NAVIGATING THE WEB OF CHOICE: SCHOOL DISTRICT ENROLLMENTS AND RESPONSES TO CYBER CHARTER SCHOOLS

A Dissertation in
Educational Theory and Policy

by

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ABSTRACT

This study examined the enrollment and organizational influence of cyber charter school policy and practice on Pennsylvania traditional public school districts. Specifically, it examined the demographic composition of school districts most likely to lose students to cyber charter schools and how this composition changes over time, the prevalence of a school district response to create a full-time online school, and the effectiveness of this response in recovering student enrollment. The methods used in the study were mainly quantitative (ordinary least squares regression, logistic regression, and Cox proportional hazard modeling). Qualitative supplements (interviews of school district administrators) informed patterns seen in the quantitative data.

Three major findings emerged from this study. First, no demographic pattern existed in the districts that lost the most students to cyber charter schools early in the cyber charter movement. Over time, as the reputation of cyber charter school quality skewed negative, disadvantaged districts—particularly those with low levels of education and low statewide test scores—were most likely to experience continually increasing enrollment losses to cyber charter schools. These students overwhelmingly moved into programs with lower academic growth rates compared to the traditional public schools that the students left. Second, based on a random sample of school districts, the majority of school districts in Pennsylvania (more than 80%) created an in-district, full-time online learning option during the cyber charter school movement. The first adoption of school district online programs is explained both by market and institutional patterns. Third, analysis in the trends of choosers before and after a school district created an in-district online program showed that the district’s strategy tended not to decrease enrollment losses to cyber charter schools.

There are a number of possible implications of these findings. For example, when a new educational reform or program is perceived as an inadequate option in a choice-based system, findings here suggest that advantaged populations will first refuse it and perpetuate their advantage. Additionally, higher student enrollment losses and increased institutional pressures both relate to district adoption of a new online school. Further, since students can leave regardless of whether a district provides the same online options as cyber charters, there exists online learning program redundancy. These trends have placed Pennsylvania in a situation where districts lose millions of dollars per year to cyber charter schools while unsuccessfully recovering student enrollment. The dissertation concludes with leadership and policy recommendations related to these implications.
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OPENING QUOTATION

“We have developed speed, but we have shut ourselves in. Machinery that gives abundance has left us in want. Our knowledge has made us cynical. Our cleverness, hard and unkind. We think too much and feel too little. More than machinery we need humanity. More than cleverness we need kindness and gentleness. Without these qualities, life will be violent and all will be lost…”

– Hynkel/Dictator of Tomania, played by Charlie Chaplin in *The Great Dictator*, 1940
Chapter 1

Introduction and Rationale for Research

More than 6,000 charter schools serve over 2.5 million students in the United States (National Alliance for Public Charter Schools, 2014). These numbers represent the sector’s rapid growth since the 1990s, particularly in conjunction with urban educational reform strategies. Due to this growth, scholars have suggested that this once niche educational reform strategy is “here to stay” (Wohlstetter, Smith, & Farrell, 2013). Charter schools affect student enrollment in traditional school districts and sometimes cause public school closures, which push districts to consider response strategies to keep their students from leaving (Jabbar, 2015; Simmons-Ritchie, 2015). At the same time, online school enrollments in kindergarten through 12th grade (K–12) have increased in the United States—during 2013–2014, more than 315,000 students on aggregate had enrolled in all forms of full-time online schools, including cyber charter schools; 740,000 students had enrolled in supplementary online courses (Watson, Pape, Murin, Gemin, & Vashaw, 2014). In fact, at least six states have made it mandatory for students to complete an online course as a requirement to graduate from high school (Horn & Staker, 2015). Amidst the increase of charter schooling and online learning, some states have seen the two coalesce to form cyber charter schools, which are public, choice-based educational programs that offer full-time online schooling to students.

Conceptually, cyber charter schools allow for a large and diverse number of students to enroll across a wide geographic area. This ability allows researchers to
explore whether similar market pressures (and the “response” of school districts competing for enrollment) have the same effect across demographic and geographic settings in school districts over time; a study also would provide data for creating better informed policy, which would ensure that new programs only benefit the educational system. Based on currently low national cumulative enrollment percentages, cyber charter schools may superficially appear as an insignificant byproduct of the charter school movement (Huerta, d’Entremont, & González, 2006). However, the nature of these schools provides a unique opportunity for theoretical research with implications for national policy. Further, the importance of studying these schools heightens each year, as enrollments grow in the more than 30 states that allow for full-time online learning (Watson, Murin, Vashaw, Gemin, & Rapp, 2012).

Figure 1-1. Percentage of Pennsylvania Students in Cyber Charter Schools, 2000–2014.
The x-axis is year; the y-axis is total percentage of students enrolled in a cyber charter school. Adapted from the Pennsylvania Department of Education (n.d).
Cyber charter school policy and practice in Pennsylvania provide the ideal opportunity to explore the practical and theoretical implications of cyber charter and related choice-based policy. Since the first cyber charter school opened in 1998, state policy allowed these schools to enroll any student in Pennsylvania. According to Pennsylvania Department of Education (PDE) data, 99.8% of districts (all but one out of 500) have lost students to cyber charter schools during the past 10 years. These cyber charter enrollments, as shown in Figure 1-1, have consistently increased. The financial effects of these enrollments emerged in the altered distribution of taxpayer funds: Each time a student enrolls in a cyber charter school, the home school district transfers approximately 70% of the per-pupil expenditure to the student’s new cyber charter school. Through this funding formula, cyber charter schools on aggregate receive millions of dollars each year in taxpayer funds (McCorry, 2015).

Despite the enrollment growth and district fund disbursement, there has been limited research to help understand and guide these schools. A variety of research exists related to brick-and-mortar charter schooling; however, debates continue about their organizational influence and that of school choice on public school systems. Contentions assert in a theoretical stalemate that these competing schools either respond to market pressure or follow patterns of institutional isomorphism (summarized in Berends, 2015). Meanwhile, the limited literature on cyber charter schools focuses on school outcomes and financial concerns (CREDO, 2011, 2013; Schafft et al., 2014; DeJarnatt, 2013), school selection, and policy design (Marsh, Carr-Chellman, & Sockman, 2009; Ahn, 2011). Both research literature and cyber charter policy-making will benefit from this study that examines the Pennsylvanian context and explores the theoretical and practical
implications of the cyber charter school movement across the statewide public schooling institution.

Out of this need to advance knowledge and explore implications, this dissertation is guided by a general question: What are the statewide consequences of cyber charter schooling on the Pennsylvania public school system? Specific research questions are described later in this introduction, but this larger question provides a broad inquiry into many academic areas related to educational theory, policy, and leadership. The relationship between traditional public schools, technology, and cyber charter schools makes this dissertation applicable to scholars such as historians of education, policy researchers, educational leaders, and institutional and organizational theorists.

Historically, technology has had an underwhelming influence on public education, but romanticizing its reformative power for schools is hardly a new theme. For example, in the wake of the widely cited educational report *A Nation at Risk* (Gardner, 1983), historian Peter B. Dow (1991) declared that one problem facing U.S. schools was a lack of technology in the classroom. He explained that textbooks were inadequate and suggested that new forms of media should supplement or even supplant the traditional tools used to teach students (pp. 258–259). Even then, Dow’s logic was not new—the United States responded to *Sputnik* in the 1950s by funding the National Defense in Education Act (1958), which included provisions to use federal dollars for educational technology. The argument embedded in both Dow’s recommendations and the National Defense in Education Act (NDEA) was that schools needed to adopt new technology because technological advancements had altered society, and schools needed to respond to meet those societal demands. If they did, it was assumed that schooling would become
easier and better—an argument similar to the rationale for using online learning in K–12 schools today (although many other arguments, such as personalization of learning, are added to today’s discussion).

However, historian and educational policy scholar Larry Cuban (1986, 2009) suggested that school reforms involving technology have hardly changed the traditional practices of teaching and learning. Reformers declared in the past that new technology would remake education and better prepare students for a changing society; but each time, the classrooms barely used the technology on a widespread basis. Contemporary online learning claims correspond with those delivered by the NDEA in 1958 and Dow in 1991, but it is essential to understand if and how online learning and cyber charter schools have influenced practices across the educational system. If these effects have indeed led to robust changes across an entire state system like Pennsylvania, then the movement is unprecedented in the history of educational technology.

For those focused on the effects of charter schools and school choice and the subsequent response of school leaders, choice policy comes with a goal of increasing innovation in public schooling to improve public school quality (Wohlstetter et al., 2013; Moe & Chubb, 2009). Choice advocates have promoted market principle ideas in conversations mainly related to charter schools (Ravitch, 2011, p. 110). Reformers supporting choice policy also claim that the competition caused by charter schools\(^1\) induces traditional school districts to modify their practices in order to meet parental demands for their children, giving parents an option other than moving to a new

\(^1\) Voucher programs do exist in pockets throughout the United States, but this dissertation focuses on charter schools because they are much more popular in practice and cyber charter schools use the charter school model.
neighborhood (Moe & Chubb, 1988, 2009). Hypothetically, charter schools compete with traditional public schools for enrollment, and this competition forces all schools to innovate their practices in order to attract students.

The theoretical implications of this study are that it builds on existing research in the debate between the aforementioned market proponents who argue that choice is superior to traditional schooling practices, and institutional scholars who argue that choice policies waste time and resources. Institutional logic indicates that schools seek legitimacy and do not change unless institutional pressures force them to do so (DiMaggio & Powell, 1983). These pressures include various forms of isomorphic processes: coercive, where legitimate agencies force an organization to behave certain ways; mimetic, where organizations replicate practices of others similar to them; and normative, where normal and legitimate behavior patterns influence how organizations function (DiMaggio & Powell, 1983, pp. 150–154). Therefore, it is essential to understand the influence on school innovation and improvement and to understand if theoretical market-based claims match schooling trends in practice.

The theoretical goal of this dissertation, therefore, is to inform this debate. This study builds on the knowledge from institutional and market scholars by using a strategic action field (SAF) framework (Fligstein & McAdam, 2011). This framework allows for considerations of both market and institutional understandings, which helps to build a broader theoretical awareness of actual school choice trends over a school system in an entire state. In expanding the isomorphism versus market debate, this study considers market pressures in the context of institutional and organizational traits as opposed to in lieu of them. This consideration leads to the major assumption of this study, which is that
cyber charter school patterns and the school district responses to them differ depending on organizational composition and the context in which these organizations are embedded.

The market versus institutional academic debate comes at a time when there is a large, bi-partisan movement in federal U.S. politics that argues that school choice in general is an efficacious educational reform. For example, the Obama Administration put charter school expansion as a key policy reform in its major educational policy initiative “Race to the Top” (Ravitch, 2011). On the other end of the spectrum, a mainstream pro-charter school advocacy group collated data showing that all of the Republican candidates running for president in 2016 stated school choice is among their priorities (The 74 Media, n.d.). This study will inform the conversation evolving around this popular educational reform.

Finally, this study has practical implications in that it will develop an understanding of how and why districts in one state respond to pressures related to a politically contentious, specific version of school choice. Based on the prevalence of online school options in the traditional public school districts in Pennsylvania, it seems that school district administrators there have responded. Indeed, as this study will show, a vast majority of traditional public schools have created (or outsourced) full-time online learning for students within their districts. Some districts created online schools by themselves; some received help from an organizational intermediary unit (IU) between the district and the state; very few districts did not adopt online learning whatsoever. This disparity means that in a state where nearly all districts face statewide competitive pressures from cyber charter schools, neither market nor institutional forces uniformly
explained adoption patterns; rather, both seem to have an effect. This study will examine cyber charter school trends and school district responses, and it theoretically and practically will consider the consequences of these developments.

**Research Questions and Layout**

As cyber charter school enrollment has increased, traditional public school districts in Pennsylvania have indeed created their own online programs. It is not clear if these online programs came as a direct response to cyber charter schools or as a concurrent development. One likely explanation is that traditional public school districts looked for ways to participate in online schooling in order to recover student enrollment (and the funding that comes with enrollment). However, there is a possibility that other institutional forces, such as pressure from other organizations, pushed districts to create online learning programs—or some combination of both possibilities may be the case.

To determine the reasons for the growth of online learning enrollments and the creation of district online programs, this dissertation will first analyze and describe the composition of districts that were likely to lose the most students to cyber charter schools, how this trend changed over time, and if these students moved into high or low performing cyber charter schools. This study then will explain the extent and timing of traditional public school district responses and determine what theoretical factors relate to the early adoption of online schooling practices in these districts. For school districts in general, this study will determine when they joined, why they joined, and whether the strategy worked in in recovering student enrollment. In exploring these topics, this study
considers whether cyber charter schools have indeed improved the statewide schooling process as a whole, specifically by answering the following research questions:

1. What demographic traits are associated with school districts that lose the most students to cyber charter schools? How have they changed over time? Are the moves to cyber charter schools academically advantageous for students?

2. Does the loss of student enrollment and/or institutional pressure relate to earlier creation of a district full-time online school?

3. Does the district strategy of creating a full-time online school work in recovering student enrollment? Is this process financially efficient for Pennsylvania?

To explain the steps in investigating and answering these questions, this dissertation is divided into six chapters. After this first chapter, Chapter 2 looks at the background and literature related to cyber charters and school district responses to charter schools in general. This summation includes explanation of Pennsylvania charter school policy, general charter school and online learning research, and cyber charter school studies and reports.

Chapter 3 explains the conceptual underpinnings of this study. This includes positioning the Pennsylvania charter law within a theoretical context and describing institutional and market theories. The chapter then introduces strategic action fields (SAFs) and how an understanding of this theoretical framing helps illuminate the findings of the study. The explanation includes a rationale for focusing on a specific subset of school district response: creating a full-time online learning program.

The research design of this study, fully explained in Chapter 4, encompasses a mix of methods. A quantitative analysis of researcher-collected data from a random sample of Pennsylvania school districts was completed. This sample merges with outside
data sources and interviews of traditional public school district and IU leaders in semi-structured formats. The quantitative methods used include a mix of ordinary least squares regression, logistic regression, and Cox proportional hazard (CPH) modeling. The regression models help determine the composition of districts that lost the most students to cyber charter schools. The next part of the study compares traditional public schools and cyber charter schools to see if students migrated to environments with higher rates of learning growth based on state-provided academic growth metrics. The CPH model enables the researcher to understand the hazard ratio that determines the covariates (organizational and environmental traits) related to the school districts likely to adopt online learning first. The semi-structured interviews inform and provide examples of the patterns found in the quantitative research that corresponds with administrators’ rationales for creating, joining, or forgoing online schooling in their districts.

Finally, means comparisons determine how losses to cyber charter schools changed after districts implemented their own online programs. Chapter 5 describes these findings, and Chapter 6 discusses the implications of the study and positions it within the larger contexts outlined in this introduction. It also considers policy solutions that legislators can use. These options ensure that students have access to online courses without hindering the effective practices of traditional schools. All of this information will be used to provide recommendations for school leaders and policy-makers as they navigate this new system of educational choice and cyber charter schools.
Chapter 2

Background and Literature Review

Charter School Law and Cyber Charter Practice in Pennsylvania

The charter school organizational type is unique because a charter school is created when the school receives a “charter” from authorizers who are decided by state law; charter schools are usually managed by private organizations that are either local or national and either for-profit or nonprofit (Ravitch, 2011). The public then funds charter schools, but these private organizations and/or individuals manage in a hypothetically different fashion than traditional public schools. Cyber charter schools exist as an online version of charter schools.

The Pennsylvania Department of Education (PDE) explained the purpose of the state’s original charter school law, Act 22 of 1997:

- “Improve pupil learning;
- “Increase learning opportunities for all pupils;
- “Encourage the use of different and innovative teaching methods;
- “Create new professional opportunities for teachers, including the opportunity to be responsible for the learning program at the school site;

2 Portions of this literature review have been published in a book chapter on the topic (Mann, 2016). The portions that overlap have been modified to fit the form and content of this dissertation, but much of the chapters remain similar due to consistency of arguments and framing.
• “Provide parents and pupils with expanded choices in the types of educational opportunities that are available within the public school system; and
• “Hold the schools established under this act accountable for meeting measurable academic standards and provide the school with a method to establish accountability systems.” (PDE, 2004)

The first of the goals listed under the Pennsylvania charter school law summary states that charter schools are intended to improve student learning. The subsequent goals envision this process as happening through choice, innovation, and accountability. These expectations also are reflected in the legal goals of charter schools across the country (Wohlstetter et al., 2013), which can be summarized as a hope to provide parents and students the opportunity to opt out of their school district and choose one of the established charter schools all while improving student learning outcomes. Appendix A provides the PDE’s specific guidance for interpreting state charter and cyber charter school law. Specifically, the document states, “at the heart of the Charter School Law is the idea that cyber charter schools will serve as laboratories of innovation on behalf of all of Pennsylvania’s schools” (PDE, 2004). Together, these policy statements show an expectation that innovation is a core idea in developing cyber charter schools in Pennsylvania, and this ultimately should lead to more academically effective schools.

To fund charter schools, as depicted in Figure 2-1, the law mandates that when a student leaves for a charter school, the home school district (sending district) must pay roughly 70% of the district’s per-pupil expenditure to the charter for each leaving student (Hardy, 2015). The exact funding formula for each district is created by the PDE and is different for non-special education and special education students, leading to a tuition
cost for the sending districts ranging from $6,600 to $17,000 for a non-special education student and $13,000 to $43,000 for a special education student (Hardy, 2015). The state bases these numbers on the district’s per-pupil operational cost, which is deduced by subtracting certain federal reimbursements and expenditures for facilities, transportation, adult education, dual enrollment, and pre-K programs from the district’s total per-pupil cost (per-pupil regular, or per-pupil special depending on the classification of the student) (Pew, 2015).

While the majority of cyber charter funding comes from school district tuition rates, some of the funding can come from state-level support as well. To mitigate the detrimental effects of budget losses from 2006–2010, the state provided reimbursements to school districts for charter school budget losses. These reimbursements ranged, on average, from 23–32% of the districts’ lost funds. However, after the economic recession of 2008 and the subsequent ideological change of the elected legislature shortly thereafter, the state removed these reimbursements in 2011. These reimbursements have yet to be reinstated (Pew, 2015; PSEA, 2013), but with a new governor, it seems that lawmakers are on track to reinstating the reimbursement in the next budget (Associated Press, 2016).

The first cyber charter school opened in 1998 and was based out of an intermediate unit (IU—an intermediary organization between the districts and the state) near the geographic center of Pennsylvania. Then, in 2002, the legislature updated the charter school law, legitimizing the practice of cyber charter schools and establishing the PDE as the authorizer (approving agency) for cyber charter schools in Pennsylvania. Based on an October 1, 2014 enrollment count, there were 13 cyber charter schools in the
state enrolling 37,289 students (30,458 non-special education; 6,831 special education).

These enrollments accounted for approximately 2% of the Pennsylvania student population (Pennsylvania Department of Education, n.d.).

Figure 2-1. Funding Mechanism for Cyber Charter Schools in Pennsylvania, 2015.

The Pennsylvania Department of Education derives the price from a formula connected to the sending district’s PPE. The formula is different for non-special education and special education students. Districts received a reimbursement from the state that reached up to 32% of tuition sent, but this was removed in 2011 (Pew, 2015).

Charter School Research

Knowledge on the influence of charter schools on traditional public schools is largely shaped by an unsettled debate over one question: When choice is introduced into a schooling environment, do school organizations respond to market pressures, or do they follow institutional norms (Berends, 2015)? Research has failed to support either theory fully, and there is little conclusive evidence about the effects of choice on districts and student learning. This section on charter school research will detail these competing ideas and explain the current state of charter school research, focusing on organizational theory related to charter schools. Other topics related to charter schools such as the role of management organizations, charter school leadership, and intentionally diverse charter schools are emerging as important related topics. However, this study will stay closely to
organizational theory topics within the literature review because, while related, the other topics do not completely align with the focus of the study.

In 1955, Milton Friedman made the original argument for school choice based on the assumption that the U.S. educational system could operate within a free market model. The choice movement in the United States, especially in regard to charter schools, embraced this market metaphor. Advocates for this movement also argue that when traditional public schools compete for students, this competition promotes academic improvement for all students because schools need to improve their practice to entice students to join their programs (Chubb & Moe, 1990; Berends, Cannata, & Goldring, 2011). Market theory advocates explain how this competition process occurs in two steps: First, parents respond to their schooling options by making a rational decision to enroll their children in the school best suited for them. This decision is expected to improve a specific student’s educational achievements and attainment. Second, the market sets the demand, which forces schools to meet it or close. Because of this process, administrators make rational decisions to improve their schools.3 This process hypothetically empowers parents to improve their children’s educational experiences while also improving schooling outcomes across the entire system.

Current research challenges these assumptions and shows that marketplace dynamics do not occur always as predicted. Parents may not act as rational consumers

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3 Charter schools did not necessarily start with this process as the stated goal in mind, but they have drifted into this realm. Albert Shanker, former president of the American Federation of Teachers, felt charter schools could be incubators of innovation that experiment with new practices to provide knowledge of better practices to help the traditional system (Ravitch, 2011, pp. 122–123). This dissertation does not consider the original intent; rather, it considers the current conceptions in which charter schools and neoliberal educational reform movements are placed.
looking for the government’s definition of higher quality schools; instead, they may act on preferences ranging from varied beliefs on definitions of school quality, alternative curriculum expectations, and even race (Berends & Zottola, 2009; Holme, 2002; Marsh et al., 2009; Billingham & Hunt, 2016). Counter to the assumptions made about school district response patterns, Cannata (2011) showed that principals often perceive little to no competition from charter schools, and even if they do, this perceived or concrete competition may not influence their actions. Jabbar (2015) showed that when school leaders experience market pressures, their responses vary. Some strategies such as marketing to and attracting only the most advantaged students to enroll may not actually improve schools. Finally, Lubienski (2003) showed that innovative responses tend to occur at the administrative level instead of the classroom level, and Preston, Goldring, Berends, and Cannata (2012) explained that innovation often does not occur in most charter school features, compared to traditional schools.

Most of the studies that question the assumptions of market theory and charter schools tend to be conducted through an institutional framework that argues schools of choice will not promote innovation or improve schooling quality. Instead, institutional norms force school organizations to follow a pattern known as isomorphism, which means that organizations with similar goals tend to replicate each other (DiMaggio & Powell, 1983). Isomorphism suggests a trend where schools of choice mimic traditional schools. This pattern causes a lack of difference between schooling sectors and thus a lack of substantive traditional school innovation in response to schools of choice.

The market versus institutionalist theory dichotomy has led school choice research to focus on whether schools of choice improve students’ achievement and
attainment or do no better (or worse) in facilitating these outcomes. This line of inquiry has tended to produce mixed results. Some studies show that charter school students do not to perform much differently than their public school peers (Clark, Gleason, Tuttle, & Silverberg, 2014; Gleason, Clark, Tuttle, & Dwoyer, 2010; Booker, Gilpatrick, Gronberg, & Jansen, 2007; CREDO, 2009, 2013; Davis & Raymond, 2012; Hanushek, Kain, Rivkin, & Branch, 2007; Bifulco & Ladd, 2006; Zimmer et al., 2009, 2012). Yet others such as Berends (2015) concluded that studies on charter schools run the gamut of displaying positive, negative, and neutral academic results. Still others have concluded that studies on educational attainment lean toward positive significant effects, but are limited to certain geographic contexts (Booker, Sass, Gill, & Zimmer, 2011; Furgeson et al., 2012; Dobbie & Fryer, 2011).

These examples indicate that findings in the charter school literature have not neatly aligned with the predictions of market or institutional models, perhaps stemming from the ideological debate mentioned prior. In lieu of these findings and this stalemate, one purpose of this dissertation is to consider both institutional and market frames and examine how they inform the development of cyber charter schools in Pennsylvania. While it seems that cyber charter schools superficially have indeed spurred traditional schools to innovate in online learning, it is not clear if the mechanisms of choice, competition, and/or isomorphism are driving this practice, change over time, and educational system improvements.
Online Learning Research

A Brief History

While this section discusses trends related to online learning, including history, funding, organizational types of programs, and briefly, learning outcomes, subtopics related to understanding and analyzing K–12 online learning in the United States are not discussed. These include issues of school leadership, teacher preparation for online schools, the growth of different platforms, and types of online learning. Topics selected for this dissertation focus on the structural and funding influences that online learning, particularly cyber charter schools, have on the educational system. This dissertation adds to the general conversations about how educational policy and online learning influence and fit within the traditional educational structures of Pennsylvania. The definition of online schooling used for this dissertation is based on Watson and Kalmon’s (2005) description: a form of schooling where “instruction and content are delivered primarily over the Internet” (p. 127). This definition aligns with the one used in Pennsylvania’s cyber charter school law, which also classifies these as full-time, online programs as required by state policy. This definition of online learning excludes a major portion of the educational technology movement known as blended learning, where traditional classrooms are mixed with online learning during instruction (Horn & Staker, 2015). The rationale for this exclusion is that this dissertation primarily focuses on the cyber charter influence on traditional public schools. While blended learning is emerging as a potentially “disruptive” model in other states such as California, these programs should be explored in a separate study and are outside of the scope of this dissertation.
Learning from a distance with technology is not necessarily a new or innovative trend in schooling; the use of technology for distance education in K–12 schooling started with distance programs paired with radio broadcasting in the 1920s. Online learning’s origins lie in the web-based platforms that developed in the 1990s (Clark & Barbour, 2015). K–12 online schools originated in the 1990s with the growth of Internet access across the United States. The first online school of record in the United States is the Laurel Springs School—a private online school that started as a text-based distance education program that developed its online curriculum in 1994 (Watson et al., 2014). After the initial creation of these programs in the early 1990s, two developments catalyzed K–12 online learning on a larger scale. The first was the beginning of the Florida Virtual School (FLVS) in 1996. FLVS helped legitimize online learning through the implementation of a large-scale, state-sponsored program for all of Florida, and it eventually grew to provide courses to students in other states. The second development was the creation and implementation of the first cyber charter schools in the late 1990s and early 2000s (Clark & Barbour, 2015). Despite enrolling only a small proportion of students nationwide, online learning is now the fastest growing school choice option in the United States (Miron & Welner, 2012).

**Limited Research**

Research related to K–12 online learning practice and policy is limited. It has grown in the last decade, but many technical reports, meta-analyses, and literature reviews say that it needs to expand further (Barbour & Reeves, 2009; Glass & Welner,
2011; Huerta et al., 2006; Means et al., 2010; Miron, Horvitz, & Gulosino, 2013). The National Education Policy Center (NEPC) has created annual policy briefs about online learning developments; the most recent one explained a need to improve the funding and structure understanding of formal online programs (Molnar, 2015). Therefore, this dissertation will act as a key extension of a conversation that currently lacks the robustness needed to fully guide policy-makers in cyber charter school policy and practice.

**Funding and Policy Debates**

Authors who have published articles about the funding of online learning usually fall into two opposing groups. One believes that online schools should receive funding allocations similar to brick-and-mortar schools. For example, Anderson, Augenblick, DeCescre, and Conrad (2006) argued that the costs to operate an online school are about the same as brick-and-mortar schools. However, some that advocate for cyber schools also seek more funding; they suggest that current funding formulas, however derived, tend to be rooted in traditional schooling models and thus lack the sophistication needed to determine the funds that online schools need (Watson & Gemin, 2009). On the other side of this argument are those who suggest online schools should receive funding in line with the actual proven cost of operation. In fact, Baker and Bathon (2012) along with Barbour (2012) showed that online learning may actually cost less and should be evaluated on a program-by-program basis.
Some critical discussions about online learning focus specifically on cyber charter schools because these schools tend to be the most controversial. This controversy stems from funding structures that typically use formulas that mandate traditional public school districts as the source of funding for cyber charters. The primary contention to this strategy is seen in Pennsylvania; one report argued that based on the district-as-funder model, cyber charter schools seem to be a bad investment of public school dollars (Schafft et al., 2014). This report suggested the nature of funding cyber charters is inefficient because these schools tend to have lower outcome-based performance metrics than the districts from which enrolled students originated (even when controlling for and considering student population characteristics). The NEPC, as well as advocacy groups and additional education scholars, further outlined these concerns and discussed legal and financial issues about cyber charter schools in general (Glass & Welner 2011; DeJarnatt, 2013; Wagner, 2012). They primarily argued that cyber charters need better regulation, and funding formulas need not penalize traditional public schools.

Those who prefer to deregulate online learning and allow open, market-based school choice suggest that parents should ultimately be allowed to choose the option they believe best fits their child. Based on this philosophy, some have proposed that the very presence of online learning shows that they emerged to fill this need (Moe & Chubb, 2009): Mann and Barkauskas (2014) explained that these arguments became key selling points for cyber charter school providers. Online learning advocacy groups generally echo this sentiment, explaining that policy should “enable funding to follow the student to the program and course level” (iNACOL, 2012).
This dissertation informs the funding and policy conversation because it explores how funding cyber charter schools, particularly with a model that sends school district funding with the student, affects local public school districts. It seeks to understand which districts are most likely to be affected by these changes, if students move into higher performing academic environments, and if cyber charters increase the likelihood of school districts creating their own online schools. After presenting the findings, the discussion section of this dissertation considers the efficiency of this model, especially in terms of cost effectiveness and success as a strategy to bring students back to their original school districts.

Cyber Charter Schools

Political debates about cyber charter school operation make the schools popular media topics. Local and national media outlets tend to criticize cyber charter schools about issues ranging from embezzlement scandals to poor learning outcomes on school evaluation metrics (Saul, 2012; Niederberger, 2012, 2013). Advocates of cyber charter schools tend to argue traditional indicators are not representative of the true value of cyber charter schools because they attract the most struggling students and thus should be judged based on student growth instead of aggregate metrics (Hanak, 2015). However, more recent student growth metrics have not shown favorable outcomes for cyber charter school students either (CREDO, 2015).

Despite the debates surrounding cyber charter schools, they are the most popular version of full-time online education (Watson et al., 2014). Arizona, California, Ohio,
and Pennsylvania have the highest cyber charter enrollments; each of these states has more than 30,000 cyber charter students yearly, which is between 2% and 4% of their statewide student populations. This percentage shows that uneven development of cyber charter schools exists across the United States because while some states provide robust and growing options, cyber charter schools are not even present in others (Watson et al., 2014).

Studies have shown that cyber charter schools nationally enroll a lower than average percentage of students who are eligible for free and reduced lunch (35.1% compared to 45.4% nationally); fewer than average English-language learners (0.1% compared to 9.6% nationally); and a higher than average percentage of White students (69.6% compared to 53.9% nationally). These findings indicate that the schools tend to be wealthier and less diverse than traditional public schools (Miron & Gulosino, 2015). One study explained that parents say they choose cyber charter schools because they want a program that can be customized for a child’s needs, they can try a new school type without financial risk, and they hope that this new option will finally be the right choice for children who did not fit well in traditional brick-and-mortar settings (Marsh et al., 2009). While this dissertation does not specifically examine individual decision patterns, it does consider these patterns in how they reflect the overall composition of school districts that most likely lose the most students to cyber charter schools. To this extent, this study can only comment on individual choice demographics by examining the demographics of districts most likely to see students leaving.

As with K–12 online schooling, cyber charter research is largely critical of these schools when discussing their funding and practice. DeJarnatt (2013) and Wagner (2012)
examined Pennsylvania cyber charter schools and argued that there is a lack of financial accountability in the schools, showing that funding formulas give more money to cyber charter schools than they need. Rapp, Eckes, and Plucker (2006) suggested that major questions exist related to cyber charter sponsorship, funding, enrollment, accountability, and special education practices. Huerta et al. (2006), along with Brady, Umstead, and Eckes (2010), raised concerns about the lack of legal oversight and argued that a need remains to update policies with stricter accountability standards. Meanwhile, other scholars have raised concerns about the influence of privatization in the cyber charter school sector (Meyn-Rogeness, 2010). Hasler-Waters, Barbour, and Menchaca (2014) conducted a literature review about cyber charter school scholarship and reiterated these privatization concerns, adding that concerns about a lack of accountability, funding structures, and performance persist.

As a whole, the research on cyber charter schools leaves many unanswered questions across several topics, feeding into yet another two-sided debate. One side argues the platform has potential because it allows for a new version of schooling that provides unprecedented levels of access to educational content in an emerging type of learning modality. The other side questions the quality, funding structures, and fairness of cyber charter schools, seeking reform to either improve or eliminate the programs. In particular, this latter group tends to worry that cyber charters are harming traditional public school districts without adding much value to the schooling system as a whole. These debates indicate that there is interest in cyber charter schools and that these conversations need reliable information to inform policy.
This dissertation will solidify practical understandings regarding how cyber charter schools affect traditional public school districts and whether or not the cyber charter school model is an efficient way to allocate resources. Additionally, while the research on cyber charter demographics largely considers the aggregate schooling populations based on race and free- and reduced-lunch statuses, this dissertation will add levels of family educational attainment. Specifically, it will consider how areas with lower educational attainment are affected by cyber charter schools, all while still considering race and free- and reduced-lunch statuses. This dissertation also will examine the organizational, structural, and demographic ramifications of these programs in Pennsylvania as well as the efficacy of students moving to these schools, starting with the beginning of charters under the 1997 charter school law.

School District and Private Online Schools

At the same time as the expansion of cyber charter schooling, school districts and private schools have developed supplementary and even full-time online programs. Often, they create content and curricula similar to what is seen in cyber charter schools; sometimes, they outsource or buy curricula or even teachers from outside vendors. Quantifying the scale of these practices has proven to be challenging because districts often merge online programs into preexisting brick-and-mortar schools. This means that with the current configuration, state enrollment data often identify full-time online students as being enrolled within a brick-and-mortar school. Similar difficulties emerged within the private sector as comparable patterns developed (Watson et al., 2014). This
lack of data creates a knowledge gap where there is a need to quantify online learning activity within these organizational types.

There is also limited knowledge about the particular types of online learning used by school districts and the rationale for these uses. Waters (2011) explained that in California, traditional public schools compete with virtual schools for students. Districts responded to their competition with three options: full-time, supplementary, and blended modes of online learning. Watson et al. (2014) stated that they believed the majority of traditional school districts use some form of digital learning; however, their report called for precise quantification of trends because a lack of data exists.

The lack of data leads to a likely underestimation of online learning activity overall because 84% of all U.S. students attend public schools, and tracking online learning trends in these schools has relied mostly on observational data. These data show that online learning is used mostly at the high school level for either credit recovery, alternative education, and/or advanced placement courses (Watson et al., 2014). This dissertation will not quantify precise numbers of online school enrollees in traditional public schools, but it will use a random sample of school districts to determine how many of these districts have at least begun their own full-time online programs. The research will prove to be a useful first step to either support or refute Watson et al. (2014) and their claim that most school districts use online learning in some form.

The knowledge about online learning trends within the private school sector is also lacking. Brick-and-mortar private schools are usually tuition based, and less than 9% of K–12 students in the United States attend private schools. Despite the fact that the first online school in the United States started in a private-school format, private schools tend
to “lag behind” public schools in their use of digital and online learning (Watson et al., 2014). The little research that exists on the small number of full-time online private schools suggests that they tend to enroll fewer students than the cyber charter schools, are tuition-based, and sometimes enroll students from both inside and outside of the United States (Watson et al., 2014, p. 25). The primary knowledge about school districts and privately run online schools suggests that there are different types of programs that are growing, though the scale and composition of these programs is unclear. Use of online learning in the private school sector seems less extensive, as these schools do not appear to have the same scale of online learning as cyber charter schools or even traditional public schooling options. This dissertation will not examine online private schools because the focus is on how cyber charter schools affect the public school districts from which they receive their funds. However, looking at private online schools would be a useful point for further investigation after this study is complete.

Overall, the lack of substantial of data in this domain of academic literature leaves an obvious need for research: Scholars need to understand the scale of online learning in traditional public school districts and guide policy-makers on how to manage this growth. This dissertation will begin to fill this void and offer an explanation for the scope of full-time online learning used by traditional public schools and will identify when and why districts began these programs.
Learning Outcomes

The knowledge base related to K–12 online learning outcomes continues to grow, and it expanded significantly during the last decade. Online school studies that depict aggregate student outcomes tend to show lower traditional achievement ratings in formal online schools than in traditional public schools. In contrast, studies that focus on individual student learning and growth outcomes tend to show mixed results. Generally, learning outcomes research supports the notion that online learning produces positive outcomes only in specific circumstances; however, more research is needed to determine actual student outcomes and the types of programs that best match particular student needs (Molnar, 2015).

Learning outcome findings are mixed about online learning in general and negative about cyber charter schools, specifically. One early meta-analysis about K–12 online learning showed positive effects, while another showed null effects (Cavanaugh, 2001; Cavanaugh et al., 2004). Other outcome-based studies showed that when comparing performances between face-to-face students and online students, there is often not much of a difference (Barbour & Mulcahy, 2008; Cavanaugh, Gillan, Bosnick, & Hess, 2008; O’Dwyer, Carey, & Kleiman, 2007), whereas Chingos and Schwerdt (2014) showed that students in the Florida Virtual School performed equal to or better than their brick-and-mortar peers. Smith, Clark, and Blomeyer (2005) reported on eight studies conducted about online learning in North Carolina and showed that online schools seem to promote positive academic achievement. However, more recent research has suggested a lack of rigorous empirical studies specifically about current K–12 online learning
programs in order to fully understand the effects of this modality on student learning in K–12 settings (Means et al., 2010).

Yet when it comes to research specifically on cyber charter schools, the data tends to show poor performance in these programs. Miron et al. (2013) looked at some of the performance metrics that the U.S. government uses to evaluate schools—Adequate Yearly Progress (AYP) scores and high school graduation rates—and showed lower graduation rates of cyber charter schools compared to all U.S. schools in 2011–2012 (37.6% compared to 79.4%). They also showed that only 30% of cyber charter schools met AYP in the same year. These researchers conducted their study at the school level and not the student level, so there may be a negative selection bias at play, allowing for the possibility that cyber charter schools are doing better with lower performing students. However, CREDO (2011) focused on cyber charter schools specifically in Pennsylvania, refuted this potential selection bias, and showed that when examining data at the student level, achievement in cyber charter schools remained significantly lower than in traditional public schools. As a follow up, CREDO (2015) reported on a large-scale study where the researchers “virtually matched” cyber students to statistical twins in traditional settings and showed that the academic growth of cyber charter students was extremely lower than that of the traditional public school students nationwide.

While this dissertation does not statistically analyze sensitive measures of academic outcomes in cyber charter schools, it does investigate if students move into schools affiliated with higher or lower growth according to one metric. The findings discussion will lean on these understandings when considering policy recommendations and leadership suggestions. Further, this dissertation will focus on cyber charter schools
in aggregate and will consider their overall implications for the Pennsylvania system as a whole. However, future research about online learning needs to determine the contexts in which online schools promote effective student learning and the characteristics these schools possess.

**How This Dissertation Informs These Disparate Topics**

This literature review explored several issues related to the growth of cyber charter schools and their influence on Pennsylvania traditional public school districts. Issues included practical implications of the law itself, theoretical implications about school choice, and understandings about the scale and growth of online learning in general. This dissertation informs each of these topics.

**Practical Implications of the Pennsylvania Charter School Law**

The Pennsylvania charter school law began in 1997, and cyber charter schools certainly expanded after the state legitimized their practice in 2002. This dissertation will examine enrollment patterns of Pennsylvania cyber charter schools and the districts most likely to lose students. Assessment also will include whether students moved into higher performing academic settings. The study will seek to understand the response to this loss of enrollment. By exploring these topics, this research will consider the effect of Pennsylvania charter school law on local school districts, how it spurred responses from
them, if these responses were productive, and if the setup as a whole is financially and academically efficient for Pennsylvania.

**Charter Schools and Theoretical Arguments About School Choice**

A theoretical stalemate has developed about the implications of school choice, particularly in the theory of action related to school choice response patterns. On one hand, some scholars argue that markets force school districts to respond to a loss of student enrollments. On the other hand, some argue that institutional trends dominate and that isomorphism—and thus a lack of innovation—dominate as well. This dissertation will examine these different forces and will seek to understand the timing of school district response to cyber charter schools through the creation of full-time online programs.

**The Scale of Online Learning and the Effect of Cyber Charter Schools**

Finally, this dissertation will inform practical discussions about the number of school districts that created their own online schools. While this study will not quantify the number of students participating in online programs in traditional public schools, it will show that there are many more full-time online schools in Pennsylvania than just cyber charter schools. In doing so, it suggests that research about the scale of online learning is likely underestimated when considering only cyber charter school enrollments.
Chapter 3
Conceptual Framework

What the Law Assumes

The PDE explained that the charter school law, Act 22 of 1997, was created to improve learning through the expansion of school choice and innovation, and to hold “schools established under this act accountable for meeting measurable academic standards and provide the school with a method to establish accountability systems” (PDE, 2004). The assumptions in choice policy suggest that, at least in part, market forces acting through new educational choices are a major mechanism in the improvement of schooling outcomes (Chubb & Moe, 1988). This chapter considers two of the major process assumptions—chooser action and organizational response—and explains how this dissertation conceptualizes these processes both theoretically and operationally. This chapter discusses the theoretical understanding about likely adoption patterns of individuals (i.e., the choosers) and the response patterns of school districts (i.e., the sending districts).

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4 Portions of this framework have been published in an article about the topic (Austin & Mann, under review). The portions that overlap have been modified to fit the form and content of this dissertation, but much of the work and findings remain the same due to consistency of arguments.
Theory of Action for Choosers

The market-based school choice theory originally advocated by Friedman (1955), Chubb and Moe (1988), and Moe and Chubb (2009) holds straightforward assumptions about how choosers behave in a school choice system. For instance, the assumption is made that the choosing families make rational decisions about selecting the best schooling option for their children. This simple, yet seemingly powerful process puts pressure on school districts to improve in order to meet the needs of parent consumers or else face enrollment losses, which could eventually lead the school to go out of business just like organizations in the business marketplace.

However, scholars such as Orfield and Frankenberg (2013) argued that this understanding of decision-making behavior rests on a pair of flawed assumptions (pp. 45–55). The first assumption wrongly presumes that families have equal access to accurate information about their options (Bell, 2009; Holme, 2002). Families of higher socioeconomic status have better access to information, and thus hold a greater capacity to make informed decisions on behalf of their children (Teske & Schneider, 2001). To complicate the process of choice even further, the ability to read and interpret academic data may differ depending on the understanding of parents (Hastings & Weinstein, 2008). Accordingly, research has shown that student test scores and achievement data do not always serve as the best predictors of school choices made by their parents (Butler, Carr, Toma, & Zimmer, 2013).

The second flawed assumption that Orfield and Frankenberg (2013) pointed out is that it is wrong to assume that families have equal opportunities to make decisions
because political and geographic traits of a choice environment restrict choice opportunities. These geographic and district boundaries alone showed that unequal access to choices is a challenge to the purity of a free-market choice system in the schooling sector. Equal transportation, school availability, and fair enrollment processes need to become available. In Pennsylvania, a provision allows a student to only choose a brick-and-mortar charter school within 10 miles of the boundaries of the student’s sending district; however, the student may choose any cyber charter school in the state.

**How This Study Conceptualizes Chooser Action**

This study builds off of these theoretical challenges related to how choosers (i.e., those who choose a new school) segment the steps of the decision-making process. It considers the traits associated with unequal choice as essential in shaping decision patterns across school districts in Pennsylvania. One of the major strengths of studying market assumptions related to cyber charter schools is that the geographic constraints disappear\(^5\) because parents within the entire state of Pennsylvania can choose any cyber charter school. This also means that their options are not isolated to particular districts. In the past, brick-and-mortar charters with their geographical requirements likely skewed decision-pattern results in research. For example, choice studies of the past typically explored school choice in urban settings, leaving the possibility that scholars detected

\(^5\) There are some geographic footprint requirements in Pennsylvania policy, but these have been deemed largely irrelevant as cyber charter schools have found ways around this and remain more or less unbounded to geography (Pazhouh, Lake, & Miller, 2015, p. 5).
patterns where decisions correlated specifically to urban communities as opposed to independent of location.

The theoretical understanding that explains how this dissertation conceptualizes chooser action stems from the framework of Baker (2014) and is linked with a larger theoretical understanding about the role of education and its broader influence on society. This understanding is that formal schooling transforms individuals and that educational attainment changes an individual in three primary ways: It increases wealth, enhances cognitive processes, and establishes a particular form of psychological development and normative belief structure (Baker, 2014). Levels of educational attainment therefore both increase the capacity for decision-making and shift the beliefs of what an individual finds as valuable behavior. The framework therefore would suggest that, ironically, attained levels of education would change an individual’s capacity to understand quality, interpret data, and make educationally efficacious decisions within a school choice setting. This, in turn, leads to disadvantage; those who have prior advantages select choices that further their advantage in a society where educational outcomes are strong determinants of future well-being (Baker, 2014). This framework essentially critiques choice arguments because it suggests that seeking to improve schooling outcomes is both the ailment and the cure. Studying Pennsylvania cyber charter schools is advantageous because this statewide study has the ability to capture variation in educational attainment. Cyber charter choices are not limited by geography. Therefore, they provide subject diversity and variability over a geographically dispersed population. These cyber charters operate within a unified policy, which allows for analysis of unique subsets of the population.
Hinged on the research highlighted in the literature review and background section, this dissertation will assume that there is currently a perception of low quality in the cyber charter schooling sector that has existed since the mid-2000s in research and media stories (including the reporting of Annual Yearly Progress scores). Fewer stories emerged about cyber charter quality and performance early in the movement, but as the movement grew, the research and media studies created a negative reputation for cyber charter schools. Baker (2014) as well as Smith et al. (2015) explained that when a new “risky” product enters an environment, the educated often adopt it first and then turn away from it as knowledge about the risks are made known. Later, lower educated individuals are likely to continue adopting it despite the known risk of this new choice.

Based on this framework, students from advantaged school districts would be more than or at least equally as likely as students in less advantaged districts to enroll in cyber charter schools toward the beginning of the cyber charter movement. Over time, as knowledge builds about poor cyber charter performance, the adoption patterns will shift and show that lower educated populations would be likely to continue enrolling in these programs due to the inability to access or interpret this performance information. Prior levels of adult educational attainment in a school district serve as the indicator that represents the capacity of the members of the district to assess cyber charter schools.

Theory of Action for School District Responses

Two dominant theories describe the expected organizational behavior of school districts in response to school choice: market theory and institutional theory. Scholars
who suggest that institutional forces prevail tend to argue that isomorphism dictates institutional pressures; and thus, little “innovation” or differences between schooling types occur. Market theorists predict that in order to maintain enrollments, school districts and charter schools must innovate to attract students (Chubb & Moe, 1988; Lubienski, 2003; Berends, 2015). This section explains how each theoretical stance perceives the theory of action for school districts in response to cyber charter schools, what an ideal response would entail according to these theoretical leans, and how this dissertation will conceptualize the response of school districts to the cyber charter school movement.

**Market Theory**

The market theory of school district response is that school districts have to adapt to consumer preferences or go out of business (Friedman, 1955). This theory of action supposes that as cyber charter schools in Pennsylvania acquire a greater number of students from a particular school district, then this district would develop strategies to re-recruit students and ensure that other students do not leave. This process would hypothetically lead to continual school improvement. In business, a market supposes that the consumer makes decisions through spending money on products, and the Pennsylvania charter school law designed a system where money follows the student. In turn, traditional public school districts are assumed to respond to money they lose while the cyber charter schools respond to new money they obtain.
If traditional school districts in Pennsylvania follow predicted trends, then the dominant action would be for schools to innovate as a means of improvement. Innovation would most likely occur in the form of online programs within the districts that initially would lose the most students. This improvement would lead to increased student enrollment. Competition would spur cycles of innovation to improve schooling as the push and pull between districts and cyber charter schools would lead to attempting new strategies. In this process, isomorphism is unlikely to occur because the response to an enrollment threat would be to create an even better, different product that attracts students. Therefore, market scholars would expect to see high levels of change and growth across the entire schooling sector as well as improved quality.

**Institutional Theory**

Institutional theorists predict that the patterns that emerge due to isomorphism cause little variation in organizational structures and routines within a sector. This is because organizations with similar goals tend to replicate each other (DiMaggio & Powell, 1983). Scholars have argued that this process occurs due to three types of pressure: coercive, mimetic, and normative isomorphism. Coercive isomorphism means that a regulatory body would mandate certain requirements for a schooling agency to follow; mimetic isomorphism causes organizations to copy each other to establish legitimacy; and normative isomorphism occurs when certain values or beliefs dictate behavior within a field, such as when defined roles like teachers and principals are created. Lubienski’s (2003) study on innovation in the choice sector showed that brick-
and-mortar charter schools often mimic traditional public schools in order to obtain legitimacy. This mimesis leads to limited school innovation in the charter schooling sector and thus little difference in academic outcomes and school performance.

In the Pennsylvania cyber charter schooling context, regulatory requirements compel cyber charter schools to develop in some similarity to traditional public schools; for example, they meet accountability standards and test students at the end of the year (see Appendix A for a full list of these schools that are regulated). However, by the very nature of teaching students from a distance, cyber charters differ from traditional schools. Since institutional theory would suggest that cyber charters would never emerge, get regulated away, or somehow be absorbed into traditional institutional structures, scholars may likely need to reframe their arguments when something drastically different appears in this environment, such as cyber charter schools.

How This Study Conceptualizes School District Response Action

In looking at response patterns of traditional public school districts, this dissertation will assume the theoretical forces of isomorphism and markets operate in tandem and not in opposition to one another. To do so, this study uses a strategic action field (SAF) conceptualization that suggests that isomorphic and market patterns depend on certain situations and contexts (Fligstein & McAdam, 2011). It is important to note that this dissertation will not examine the specific structures of cyber charter schools and their similarities to traditional public schools; therefore, there is an element of structure that will not be included in this analysis.
SAFs represent a compromise between institutional theory and market theory. Rather than categorizing organization responses as either innovation or isomorphism, SAFs expect organizations to navigate both competitive pressure and institutional norms in determining strategies related to their survival. SAFs add to the complexity of market and institutional theories by considering both as important when organizations strategically interpret rules and organizational behaviors within a field. The goal of organizations in SAFs is survival. Improvement or innovation is not always essential to this process.

This conceptualization is a new direction for school choice research. It merges institutional theory and market theory into the same theoretical paradigm, suggesting that the actions of traditional districts and competitors depend on the strategic context of their organization (Austin & Mann, under review). The rest of this section describes how SAFs inform this study.

**Strategic Action Fields**

SAFs have roots in institutional theory but also have the flexibility to incorporate market principles. While institutional theory focuses mainly on macro-level structures and market theory tends to focus on the influence of micro-level decision-making, SAFs consider meso-level structures to be key to action and decision-making (Scott & Meyer, 1983; DiMaggio & Powell, 1983; Laumann & Knoke, 1987). SAFs suggest that meso-level actions depend on strategic positioning—if an organization is best served strategically by following patterns of isomorphism (and traditional schooling
organizations usually are), then the organization follows this logic. However, a strategic position may need to adapt to a different framework when the normative culture is altered or challenged. For example, when Pennsylvania created charter school law, it altered norms and changed behavioral logics that traditional school districts follow. With these changes, direct competition became a possible strategic, institutional tactic.

Regulatory changes, including those in Pennsylvania, occur throughout the education sector, including the creation of charter school and cyber charter school policy. These regulations indeed have the capability to change institutional logic from the presumable default of isomorphism to one that works in circumstances where competition and change are expected and normative behaviors, even if the changes may not be particularly substantive or even educationally efficacious. SAFs push research beyond the institutional theory assumption that fields are always stable (Fligstein & McAdam, 2011, pp. 4–5) because they emphasize the importance of actors’ relative standing within a field for delineating the dynamics of action.

Given the organization of SAFs, one of the most important considerations then becomes a shared understanding about the “rules of the field”—the actors must understand “what tactics are possible, legitimate, and interpretable for each of the roles in the field” (Fligstein & McAdam, 2011, p. 4). In order to predict action within this context, it is vital to first understand the rules. This means that before studying the dynamics of cyber charter school growth and development in Pennsylvania along with the subsequent response, first understanding the rules that define action in the Pennsylvania schooling institutional environment is a requirement.
Defining the Rules of the Pennsylvania Field

In Pennsylvania, the most important rule of the field as defined by charter and cyber charter school policy relates to the funding mechanisms. Sending districts pay a receiving charter school the tuition based on every student that attends the charter. The traditional public school districts also spend a higher tuition rate for special education students. At first, the state reimbursed districts for part of this loss in revenue, but these reimbursements ceased in 2011. In this strategic reality, districts want to find ways to mitigate this loss of funding. School districts will likely do what they can even if their actions do not necessarily translate to improvement or innovation.

Another rule more normative than explicitly stated is that cyber charter schools and charter schools in general tend not to close based on academic performance, even though policy states that they should. Pennsylvania cyber charter school law (fully described in Appendix A) states that schools will be held accountable based on the metric of PSSA performance (the state’s annual test) but never sets a clear threshold. So while the law says that it will hold these schools accountable for quality, of the 18 cyber charter schools to exist in Pennsylvania, only four have ever closed (two for financial reasons, one for reasons that are not clear, and one that operated as a brick-and-mortar-school, which violated state law). Even if cyber charters meet the minimum educational expectations, this shows that cyber charter schools rely primarily on enrollment demand, which suggests that districts and cyber charter schools alike do not have to necessarily create high-performing online schools, only programs that meet their strategic goal of maintaining appeal. While quality may be a part of this equation, it may be that
maintaining high enough performance to meet the operating standard from the state is strategically what a school needs to do to stay open, so long as it has other attributes that make it attractive enough to recruit and retain students.

Districts also have additional organizational structures, specifically intermediate units (IUs), which support traditional schooling options. This means IUs have the potential and capacity to support school districts in their creation of online schools. Further, school districts are also able to partner with other districts in the creation of online schools. School districts have the capability to collaborate with other districts or IUs, or even to outsource their online programming if they do not have the capacity to create programs on their own.

Finally, and perhaps most importantly, risk is not necessarily incentivized in the policy and practice of the Pennsylvania online learning field structure. While the introduction of a new schooling type may act as a bold first step, it may be the last step in innovation. The state may have declared cyber charter schools as viable options in 2002, but the institutional reality is that moving too far beyond normative notions of “schooling” is a risky strategic behavior that may lead to negative consequences. The popularity of the programs, not quality, incentivized their development, and it has been seen in other recent studies on technological innovation in education (as discussed in a recent EdWeek article by Herold, 2016).
Expectations, Types of Responses, and Why Focus on Full-Time Adoption

Taken together, these strategic realities suggest that there can be a few trends to expect in the Pennsylvania context. First, around 2002, cyber charter schools began to have increased enrollment when the state legitimized them. Second, both institutional and market patterns are likely to explain the responses of school districts because as school districts lose students, they should act strategically in response. They would likely use IU structures already built into the Pennsylvania system, as well as receive help from local school districts to develop strategies to respond to the growing cyber charter school sector. This also means that the districts are likely to pursue programs that best recruit students rather than programs that are of high quality. Districts that do not lose students have no need to respond; however, districts that lose greater numbers of students will respond in a way that minimizes losses in the least resistant form possible.

Additionally, it could be expected that there might emerge competition without innovation beyond the beginning of the cyber charter movement. This is because the legitimization of cyber charter schools acted as the first push, and subsequent enrollments spurred school districts to act. However, cyber charter schools are not judged based on their performance, but rather their amenities that lead to popularity. Therefore, their incentive is to find a model that gains enrollment rather than improves performance. The forces of legitimacy put these responses within normative boundaries and little change may occur beyond the start of the movement.

This strategic understanding supposes that school districts that responded early were the biggest losers in term of student enrollment; that 2011 was a key year for online
learning adoption; that the least restrictive responses occur (easiest implementation with the greatest enrollment return); that the programs are not necessarily educationally efficacious; that districts will use online learning for more functionality than cyber charters; and that districts will lean on support structures like outsourcing and IU assistance to achieve the goal of creating an online school to bring students back.

**Why This Study Focuses Only on Full-Time Schools**

Based upon pilot interview data and descriptive statistics obtained early in the data collection process, it became apparent that the use of a full-time online school embedded within the traditional public school district structure was by far the most popular strategic action of school district leaders. Indeed, as will be described in the findings section, from the random sample collected in this study, more than 85% of school districts used this strategy. The strategy tended not to improve on the cyber charter model; rather, it used very similar types of programming, and districts often purchased content and materials from the same providers as cyber charter schools. Therefore, the primary quantitative focus of this study is to explore the response pattern of the most popular strategic response: the inclusion of a full-time online school in the school district’s academic program.
Summary of Study Rationale

Based on the logic put forth in this conceptual framework, this study will focus both on the choice patterns of student enrollments and on how districts respond to growing numbers of students choosing cyber charter schools. This study will conceptualize parental prior levels of education as important to choice patterns and thus will examine how education levels affect their choices. Additionally, this study will focus on the school district response of adopting full-time online learning because the strategic environment pushed this model as the legitimate option to use in response to cyber charter schools. The goal of this research then is to understand, in this strategic action field, institutional and competitive pressures. This understanding will be used to predict full-time online learning adoption patterns and how these patterns change over time as institutional forces of norms and legitimacy shape the market environment. In addition to studying these patterns quantitatively, examples from interviews will be used to inform the research on how school districts are using full-time online learning and why they chose specific options. Finally, this study will place this theoretical analysis in a practical context by working to understand if the seemingly rational, strategic responses to cyber charters worked in recovering student enrollment, and how these patterns promote or detract from educational quality and efficiency overall.
Chapter 4
Methodology

Quantitative Data Sources

The quantitative data used in this study come from a combination of researcher-collected sources and data downloaded from the Pennsylvania Department of Education (PDE), the Common Core of Data (CCD) from the National Center for Education Statistics, and the American Community Survey (ACS) from 2010–2014. The data responding to the first research question set came from the latter three sources and included all districts in the state, while the data responding to the second and third research question sets include all four sources. This section details the collection strategy and logic for using and selecting these data. It also identifies potential issues regarding validity with the variables derived from these data sources and explains how these concerns were mitigated during the collection and analysis process.

Researcher-Collector Data

Only two of the variables used across all of the quantitative analyses came from researcher-collected sources. However, these variables are vital to the study because they are the primary dependent variables for the second and third sets of research questions. The variables are whether a school district created a full-time online program, and if so, the year each district started its program. The reason for focusing on only full-time online learning adoption came out of the collection of pilot data prior to conducting the full
analysis, as well as the theoretical framework described in Chapter 3. Before the study began, a survey was sent to all districts and interviews were conducted with administrators. It became apparent that while there were many possible strategies that districts could use in response to cyber charter schools, the most popular was the creation (through either outsourcing or internal creation) of a full-time online learning program available to students within the boundaries of the traditional public school district. This process is also in line with the theoretical framework. Limiting the study to full-time adoption was necessary because it kept the data collection instruments consistent and reliable.

The first step in collecting these data was to determine the districts of focus in the collection process. The school districts in the study were selected using a simple random sampling strategy. The population of school districts in Pennsylvania is 500; of those, 217 districts were selected to ensure a 5% margin of error for generalizing findings. The process of randomly selecting the districts included assigning a number to each of the 500 districts in the population with a random number generator in Excel. The dataset was sorted on these random numbers, and the first 217 entries were selected.

The purpose of this sampling strategy was to create a sample that would be representative of the population of districts in Pennsylvania. The external validity of this sample should be understood in that the findings in this dissertation are representative of school districts in Pennsylvania; however, it is difficult to make generalizations beyond there. Please see Appendix B for a comparison of key demographics of the sample of districts to the population of Pennsylvania districts overall. The comparison shows that
the sample typically reflects state averages in key demographics, with some areas of minor under or overrepresentation, but no extremes that pose a threat to external validity.

The collection period lasted from September 2015 to February 2016. The first stage in the process was to e-mail administrators in each of the 217 districts in the sample. This included sending a form e-mail to three to seven administrators in each district (depending on availability of e-mail addresses). These administrators included superintendents, assistant superintendents, curriculum supervisors, principals, and online learning and technology coordinators. The e-mail explained the project and asked questions related to the information needed for this study, including whether the district had a full-time online learning option, and if so, the exact school year it began. E-mail examples are included in Appendix C.

After a first round of e-mail contact, answers of district administrators were collated and marked on an Excel spreadsheet. This spreadsheet was used throughout the correspondence process. After noting some inconsistencies in these reported results (e.g., administrators counting “part-time online learning” as an online program), the text of the e-mail was changed and re-sent as a follow-up to make expectations clearer. After this second round of contact, the administrators received an additional e-mail that reiterated their answers to ensure they were certain of the information they provided. This meant a single administrator could have been e-mailed up to three times, but to respect their time and inbox, no more than one e-mail was sent per month. Through this e-mail strategy alone, information from slightly more than 60% of the 217 districts was obtained.

To supplement the emailing-mail contact, online learning administrators of each intermediate unit (IU) were contacted via e-mail and at times by phone. The reason for
this correspondence was that the IUs coordinate and work with administrators in implementing district-level programs. Some IU officials preferred to coordinate via e-mail, while others were receptive to phone calls. Many also knew the status of online learning implementation in the other IUs because some coordinate and run all of the online programs for several IUs (and thus more districts than just those in their own IU) across the state. Eleven leaders responded and offered information about the initial development of online learning support for 25 of the 29 IUs (the smaller network made it easier to extrapolate information about multiple IUs). The missing IU data caused 15.2% of the school district sample to have missing data regarding the year when their IU started online learning support; a limitation discussed later in this chapter. The IU correspondences also included cross-referencing the online learning start dates provided by the districts. In particular, three of the IUs were major aggregators of online learning and shared contract information related to more than 25% of the school districts in the sample.

The next step in the data collection was to conduct supplementary online searches for school board meeting minutes and websites. These meeting documents proved useful in that within some of the board meeting minutes, school districts listed start dates of online programs. Other school districts detailed the history of online learning on their websites, while still others archived press releases or news stories that announced an online learning program.

The final step of data collection included calling individual school districts and speaking with administrators. This step was only used if the other steps did not yield at least two points of triangulation in terms of verifying online learning status and the start
date of full-time online learning. This contact included a simple phone call to the district explaining the project and marking in the spreadsheet if and when the administrator said the school started full-time online learning.

The largest threat to internal validity is misremembered or inaccurate information provided by school administrators. Many administrators in the sample often only knew “best guesses” of when their district started an online school. Some, during either phone or e-mail correspondence, confirmed information provided from contracts or other sources, while others relied on memory. A number of strategies were used to address this threat of validity. First, the data were triangulated and included in the analysis if responses showed the same information from two different sources. For example, if it was found that board meeting minutes show a particular year and an administrator said the same year, this would be considered corroborated and included in the analysis. If contradictory information was uncovered, the district was not included in the analysis. However, discretion was used in that if any single administrator pulled up a contract of their first online learning vendor and read the exact year, then the researcher would privilege this information in the dataset.

This collection and triangulation strategy ultimately led to the inclusion of nearly 87% of the districts from the random sample in the final analysis. Meaning, 188 school districts were included in the final analysis out of the 217 first pulled in the random sample. Of course, despite double-checking and triangulating of the year provided for a given school district, there is still a possibility that some of the years are inaccurate. In considering these challenges as a whole, the distribution of years is what one would theoretically expect as compared to traditional rate of adoption curves (Rogers, 2010).
There is normally an S curve linked to the adoption percentage of a new product and a bell-shaped count curve. The curves in this data are shown in Figure 4-1 and generally represent these trends. The only difference, which perhaps could have been expected based on the state-level policy of removing reimbursements, is a slight spike of adoptions in 2011. Depicting these descriptive trends provides assurance that the sampling strategy was successful in capturing the overall patterns of full-time online learning adoption in Pennsylvania school districts.

Figure 4-1. Pennsylvania School District Adoption of Full-Time Online Programs, 2000–2015.
Data From Other Sources

Additional data for this study comes from the CCD, PDE, and ACS from 2010–2014. The CCD dataset depicts school demographics and is highly accurate because districts are required by law to report the information found in this dataset, which includes measures of demographics and geographic traits of all school districts in Pennsylvania. The PDE data includes grade-level testing scores of students in grades 3–8 and 11, which was federally required and reported for nearly every student in each district. The ACS data offers the levels of education within each area defined by census boundaries. The data from CCD and PDE were merged using district identifiers, and the ACS data were joined through GIS software to their corresponding school districts in Pennsylvania. These data were also merged with the district identifiers to the researcher-collected data mentioned previously in this chapter.

Additionally, for the research question seeking to understand if the moves of students were academically advantageous, the Growth Measure metric was used from the Pennsylvania’s Value-Added Assessment System (PVAAS). The indicators from PVAAS were only available for 2014–2015, so this variable does not represent the actual moves depicted in the other research questions. Instead, it explores moves that happened in the year after the other analyses were conducted. This variable then reflects the efficacy of moves in 2014–2015 or later years when compared to the other data and analysis in the study. Therefore, there is a possibility that in previous years, moves were more academically advantageous than represented in the PVAAS results outlined in the findings section.
PDE describes in the PVAAS description materials included with the data that the growth measure is “an estimate of an LEA’s/district’s influence on students’ academic growth. The Growth Measure for Science and Keystone content areas (Algebra I, Biology, and Literature) is a function of the difference between the students’ actual scores and their predicted scores.” For this comparison, the Algebra I score for students was used because it was a common test that all students took in districts and cyber charter schools. These scores were necessary to use because all cyber charter schools in the dataset enrolled high school students, but not all enrolled elementary students. This measure is more accurate (since it is value added) and more recent, so it helps offer insight into how moves into cyber charter schools can be considered based on the most up-to-date and refined performance outcome measures available.

Quantitative Analysis

Question 1

Again, the first questions in this study were, what demographic traits are associated with school districts that lose the most students to cyber charter schools? How have they changed over time? Are the moves to cyber charter schools academically advantageous for students? The analytical strategy needed to answer these questions requires two primary steps, and as mentioned, include data from all Pennsylvania districts; the researcher-collected data was not needed for this question set. The first step was to establish a relationship between educational attainment (in line with the theoretical
framework expectations) and the number of students who opted out of a school district—and that this pattern changed over time. The second step was to show that educational attainment had an independent effect while controlling for other variables.

Table 4-1. Descriptive Statistics of Sending Districts in Pennsylvania.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of students leaving</td>
<td>496</td>
<td>2.10</td>
<td>1.03</td>
<td>0</td>
<td>7.11</td>
</tr>
<tr>
<td>Percent of bachelor’s degree or higher attainment</td>
<td>496</td>
<td>24.08</td>
<td>12.99</td>
<td>8.16</td>
<td>75.99</td>
</tr>
<tr>
<td>Percent of students scoring “below basic” in math</td>
<td>496</td>
<td>8.60</td>
<td>5.38</td>
<td>1.00</td>
<td>50.20</td>
</tr>
<tr>
<td>Percent free and reduced lunch</td>
<td>490</td>
<td>37.82</td>
<td>17.34</td>
<td>0</td>
<td>99.15</td>
</tr>
<tr>
<td>Percent of White students</td>
<td>496</td>
<td>85.04</td>
<td>18.23</td>
<td>1.08</td>
<td>99.49</td>
</tr>
<tr>
<td>Locale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural (reference)</td>
<td>244</td>
<td>(49.20)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>20</td>
<td>(4.03)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suburban</td>
<td>232</td>
<td>(46.77)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total expenditures per student</td>
<td>496</td>
<td>$11,922</td>
<td>$1,893</td>
<td>$8,603</td>
<td>$21,990</td>
</tr>
<tr>
<td>Number of students per school</td>
<td>496</td>
<td>522.07</td>
<td>171.07</td>
<td>99</td>
<td>1,348</td>
</tr>
</tbody>
</table>

Table 4.1 describes the variables used in this portion of the study. The independent variable is the ACS 2010–2014 reported percentage of adults living within the district boundaries who had obtained a bachelor’s degree or higher. This percentage serves as a proxy for the level of education in a given district. The dependent variable is the percentage of the total student population (an aggregate of charter and traditional public school students) who had left the for district cyber charter schools. These data were provided by PDE and were reflected the October 1 enrollment reports of each year (all variables reported in the table reflect 2013–2014 numbers, unless otherwise noted).
While there is high mobility in the cyber charter school sector (Mann et al., 2016), these enrollment data are the best proxies available, as they are based on PDE data collections across districts. The other CCD variables used were based on previous findings regarding the likelihood that students would leave a school district for charter schools in general (Fuller, 2013; Hastings, Kane, & Staiger, 2005; Hoxby & Murarka, 2009; Weiher & Tedin, 2002).

The control variables include free and reduced lunch status to determine if there was an economic relationship, percentage of White students to determine a relationship based on race, geographic locale to determine a geographic relationship, and expenditures and number of students in a school to determine a relationship to resources and size. Percentage of White students is from the CCD and represents the number of White students in a district divided by the total number of students in the district. Geographic locale is also from the CCD and is collapsed into three basic locale categories: urban, suburban, and rural. The total district expenditures are of a per-pupil expenditure derived from the PDE formula. And the number of students per school is the total number of students divided by the total number of schools in the district.

An additional variable from PDE was the percentage of students performing “below basic” in math in the sending district. This variable serves as a proxy for school quality to determine if students left based on the PSSA results recently reported to the public. This variable uses the 2011–2012 scores: the most recent year available at the time of the study that preceded the enrollment moves. Taken together, these variables reflect independent, dependent, and control variables to determine the effect of
educational attainment of a district related to the number of students leaving for a cyber charter school in that district.

To first understand the enrollment patterns, a Pearson’s correlation coefficient was calculated between the percentage of bachelor’s degree or higher attainment variable and the percentage of students leaving variable for each year, and then the coefficients are compared over time. Upon examining and cleaning these data, it became apparent that the relationship between students leaving and educational attainment was curved linear, requiring the computation of a log transformation of students leaving. The correlation and subsequent regression equations reflect the log transformation of the dependent variable. This calculation preserved the directionality of the relationship represented by the regression coefficients (a positive, negative, or null) and statistical significance, but made it untenable to understand the predictable magnitude of these relationships when interpreting these coefficients.

The second step to answering this set of questions was conducting an ordinary least squares (OLS) regression analysis to see if the educational attainment relationship held when considering control variables. In doing so, this study uses three models: one only with the educational variable, and two with the control variables described earlier. The reason for three models and not two was because the free and reduced lunch variable and the below basic scores correlated above +.70, which threatened multicollinearity. Therefore, the second model included the below basic variable percentage and excluded the free and reduced lunch variable, while the third model included free and reduced lunch but excluded the below basic percentage:

Model 1: \( \log(Y) = \beta_0 + \beta_1 x_1 + \varepsilon_i \)
Model 2: \( \log(Y) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \epsilon_i \)

Model 3: \( \log(Y) = \beta_0 + \beta_1 x_1 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \epsilon_i \)

These models were run for each year to ensure results were consistent over time with the correlation coefficients. As will be shown in the findings chapter of the dissertation, the models followed the same patterns of the correlation coefficients. Therefore, for the sake of parsimony, the full regression model reported in the findings section was of the most recent year.

The next portion of analyzing this set of research questions was to compare the average growth measure difference between the sending district and the cyber charter school for each student mover (deduced based on number of choosers per district to each cyber charter school). This involved first determining the mean growth metric of each sending district for students and then the corresponding growth metric of the cyber charter school in which each student actually enrolled. The cyber charter mean was then subtracted from the sending district mean to determine, on average, whether the moves were positive or negative. To put these numbers in context, the average growth metric of all traditional public districts and cyber charter schools (a simple average of all schools’ overall growth measure by type, divided by the number of schools) was calculated and compared to the means of the moving student averages.

**Question 2**

The second question in this study was, does the loss of student enrollment and/or institutional pressure relate to earlier creation of a district full-time online school? The technique used in this portion of the study was to use a Cox proportional hazard (CPH)
model (Cox, 1972; Allison, 1984) with the researcher-collected data that was merged with the PDE data. CPH modeling enables the researcher to understand the hazard ratio that particular covariates have on influencing an outcome; in this case, it would be the adoption of online learning. The higher the hazard ratio for a particular variable, the sooner the event would be likely to happen for an organization that has high levels of this particular variable (or simply just has this trait if the variable is dichotomous). For a given covariate, a value above 1.0 means an event is more likely to happen, and a value below 1.0 means the event is less likely to happen.

This type of modeling is typically used in medicine; for example, it can determine if a prescription poses a lower hazard ratio for patient mortality as opposed to if the person had not received the prescription, or if certain health behaviors (e.g., smoking) are linked to earlier mortality. An example of this model in practice is seen in the medical article by Burton and Walls (1987). The authors in the study showed that amyloidosis has an extremely high hazard ratio (8.26), and if patients were seen with this condition, they had a much higher mortality rate. If this measure was continuous, then those with the highest levels would be more likely to die first. Similar models have been used in educational studies. Most recently, LaVenia, Cohen-Vogel, and Lang (2015) used a survival analysis in determining covariates related to state adoption of the Common Core Curriculum Standards.

In the context of this study, the hazard ratios link to market pressures, institutional pressures, and covariates. The outcome is a school district’s adoption of online learning. As mentioned, the hazard ratios will be values that are either less than 1 or greater than 1. More technically, the basic equation for the CPH model used in this study is as follows:
\[ h_i(t) = \lambda_0(t)e^{(\beta_1x_1 + \beta_2x_2 + \cdots + \beta_kx_k)} \]

In this CPH equation, the left side is the baseline hazard, which means the rate at which the event happens with all of the coefficients being null, \( t \) being time and \( h_i \) being the baseline for adoption. The right side of the equation is a function (\( \lambda_0 \)) of time that is exponentially influenced by the beta coefficients in the model. To make this equation linear, a log is taken of each side of the equation. To run the model, the researcher used a Stata software package, which reports coefficients as the hazard ratios mentioned earlier.

Hazard ratios are calculated from the CPH equation using the following transformation:

\[
HR_{i,j} = \frac{h_i(t)}{h_j(t)} = \frac{\lambda_0(t)e^{(\beta_1x_1 + \beta_2x_2 + \cdots + \beta_kx_k)}}{\lambda_0(t)e^{(\beta_1x_1 + \beta_2x_2 + \cdots + \beta_kx_k)}}
\]

The hazard ratio transformation can be understood as the ratio of a case that has a certain level of a beta value compared to a case where this beta value is null. These hazard ratios are understood then as the proportional risks that a particular covariate has on influencing the outcome. These are interpreted similarly to a logistic regression model in that hazard ratios that fall to less than 1 are associated with a lower likelihood of an event happening. Hazard ratios greater than 1 are associated with a greater likelihood of the event occurring. For example, if a hazard ratio value is 5.00, then something that has one unit of this variable has a five times greater incidence rate than a null value. In a study of online learning adoption, if the market pressure variable has a statistically significant hazard ratio, then it means that higher a market pressure values indicate a greater likelihood of a district adopting online learning sooner. The highest would be most likely to adopt online learning first.
Table 4-2. Descriptive Statistics of the Variables in the Cox Proportional Hazard Model About School District Responses to Cyber Charters.

<table>
<thead>
<tr>
<th>Variable Description</th>
<th>Observations</th>
<th>Mean/percentage of cases</th>
<th>Std. dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>School district adoption of full-time online school</td>
<td>188</td>
<td>2011.16</td>
<td>3.33</td>
<td>2002</td>
<td>2016</td>
</tr>
<tr>
<td>Percentage of cyber charter students lost</td>
<td>215</td>
<td>1.15</td>
<td>0.52</td>
<td>0.18</td>
<td>2.77</td>
</tr>
<tr>
<td>IU stated they adopted before 2010</td>
<td>205</td>
<td>36.10%</td>
<td>---</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Actual year IU first participated in online learning</td>
<td>205</td>
<td>2009.8</td>
<td>3.66</td>
<td>2000</td>
<td>2016</td>
</tr>
<tr>
<td>Average adoption of online learning in the district’s IU</td>
<td>217</td>
<td>2010.15</td>
<td>1.18</td>
<td>2007.33</td>
<td>2012.8</td>
</tr>
<tr>
<td>Percentage free and reduced lunch 2009–2010</td>
<td>211</td>
<td>33.68</td>
<td>16.9</td>
<td>0</td>
<td>99.31</td>
</tr>
<tr>
<td>Percentage of White students 2009–2010</td>
<td>214</td>
<td>87.71</td>
<td>14.9</td>
<td>1</td>
<td>99.27</td>
</tr>
<tr>
<td>Total population in a district</td>
<td>215</td>
<td>23589.61</td>
<td>2729</td>
<td>2272</td>
<td>309436</td>
</tr>
<tr>
<td>2009–2010 Percentage below basic in math</td>
<td>215</td>
<td>6.44</td>
<td>4.85</td>
<td>0</td>
<td>22.7</td>
</tr>
<tr>
<td>Percent of bachelor’s degree or higher attainment</td>
<td>215</td>
<td>25.02</td>
<td>13.7</td>
<td>8.28</td>
<td>75.15</td>
</tr>
<tr>
<td>Locale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural (reference)</td>
<td>105</td>
<td>48.83%</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Urban</td>
<td>6</td>
<td>2.79%</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Suburban</td>
<td>104</td>
<td>48.37%</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4-2 describes the variables used in this portion of the study. The primary independent variables in this portion act as proxies for market pressure and institutional pressure. The market pressure variable was created through a measure of determining the proportion of students that left a school district for a cyber charter school during the years in the study. An aggregate metric was used because it best represents the total loss of cyber charter students during the time period (and as analysis in later questions will show, implementing a district full-time online school did not seem to remedy this loss).
However, to ensure that this measure is valid, the aggregate metric was correlated with the individual year metrics, and the correlations consistently were extremely high (for example, the correlation between the aggregate percentage and the 2013–2014 percentage was .834; aggregate and 2008–2009 was .862; and aggregate and 2003–2004 was .569).

Due to various functions and positions of IUs throughout Pennsylvania, it was less clear on how to construct a cogent proxy variable for how IUs influence a school district’s adoption of online learning. Therefore, three potential IU variables were created and tested. This required a new model for each variable to examine if any of the coefficients reflected the finding that institutional pressure influenced school districts to create a full-time online school earlier.

The first IU variable was based on whether the IU created an online learning support for school districts before the year 2010. This information was coded in a binary fashion and merged onto every school district record. Each school district was coded “0” if there was no IU support before 2010, or “1” if their IU had created online support before 2010. The year 2010 was used because it represented a time when 50% of the school districts had adopted full-time online learning. This strategy allowed for the labeling of 205 of the 217 districts because, as mentioned earlier, there was an inability to acquire information about four of the IUs. This variable was the cleanest of the IU predictor variables because it is either a “yes” or “no” proposition and indicates whether the IU offered some form of online learning guidance to districts before 2010.

The second IU predictor variable was the exact year in which the IU created an online learning support program. The purpose of this was to add a specific time element to see if district-level adoption related to earlier creation of a program at the IU level. The
districts that had not yet had their IU do this at the time of the study were given a start year of 2016. This calculation is less accurate in that it uses the last year as the proxy adoption year, likely suppressing the strength of hazard ratios. This variable also had only 205 cases because there were four IUs for which information could not be retrieved or deduced.

The third and final IU variable was based on the average adoption of online learning in every district for each IU district adoption data. This metric was assigned to all districts in the sample because it was the average adoption year of the districts within each IU for the data available. The null values were not included in the averages. This metric therefore serves as a proxy drawn from researcher-collected district data that represents the average year of district adoption of online learning in each IU. For IU schools with adoption years, the average adoption year was assigned to each district in a given IU. This variable is not as clean as the others because the missing data could potentially change averages for a given IU, but the three variables together account for the limitations of any given single variable.

Taken together, the institutional variables help capture a thorough understanding of online learning adoption trends across Pennsylvania. The purpose of linking online learning adoption to IU variables was to consider whether there are independent effects from institutional pressures on the likelihood of a school district creating an early full-time online school program. These pressures could come in the form of direct assistance from the IU or help from nearby school districts. It was attempted to capture all of these possibilities by using multiple measures for the IU variables in this portion of the study.
The logic behind selecting certain control variables comes from considering potential traits that may foster or detract from full-time online learning adoption. The free and reduced lunch and percentage White variables represent populations of students in the school and perhaps the types of pressure on the school district to meet the needs of these students (and the types of funding that come with them). The total population of the district, identified with the ACS data, speaks to the size and potential tax base and resources available to the district. For example, pilot interviewees suggested larger districts have more resources with which to work, so perhaps in larger districts, economies of scale foster easier implementation of online learning. The below basic in math variable relates to potential internal school traits that may suggest that higher performing or lower performing schools have some sort of capacity to decide or not to create a full-time online school. The percentage of bachelor’s degrees in the community links to community-level capacity and perhaps early creation of an online school. The locale examines the potential for a geographic relationship to adoption. While each of these variables fulfills specific purposes, together they serve as controls for the primary independent variables in the study.

In addition to the dependent and independent variables and the covariates, the data needed for the CPH models are time and whether the data are censored. Time is needed because a primary function of CPH is to include time in determining hazard ratios. Data is considered censored if the subjects (school districts) in the dataset have or have not experienced the event and are coded “1” and “0” respectively. This means that if a subject experiences the event, it is labeled “1,” and this labeling is linked to the time. This information is modeled to pair with covariates in order to understand the subjects
who achieve the event and at a shorter duration of time. The CPH model also allows those districts that have not experienced the event — those attributed to “0” in the censoring—to be included in the study.

For this study, the time variable starts at 1998 (when the first cyber charter school opened), and the time is calculated in years due to the fact that school districts typically adopt a new program at the beginning of an academic year. The time listed for each district is how many years it took them to adopt online learning (censored coded “1”; time coded as number of years). Those who have not adopted online learning are given the latest time in the dataset (for example, 2016 is used and time is assigned as 18 since 2016 is 18 years after the first-known cyber charter in 1998). They are then censored “0.” With this modeling, the CPH allows the researcher to understand what hazard ratios (market pressure and institutional pressure) have the strongest association to early adoption of online learning in the sample.

**Question 3**

The third question in this study was, does the district strategy of creating a full-time online school work in recovering student enrollment? Is this process financially efficient for Pennsylvania? The strategy used to answer this question examines the schools that implemented a full-time online school and identifies if this implementation affects their losses to cyber charter schools. To do this, the analytical strategy required first to create a variable that was the proportion of students lost to a cyber charter school in a given district the year before the district implemented a full-time online program.
The next step was to create a variable for the proportion of students that were lost to cyber charter schools two years after the program implementation. Two years after was used in order to allow a year for the program to begin, startup difficulties to subside, and ultimately, to allow for a full year for the school district to recruit and prove the worth of its online program.

With this data, the logical analytical strategy would have been a dependent $t$ test because it deals with the same sample over two points of time. However, the data did not pass tests for normality, so an alternate method was required (Kremelberg, 2010, p. 133). Therefore, the analytic tool used was a Wilcoxon signed-rank test as an alternative to a dependent $t$ test where the data is not normally distributed (Lowry, 2015; Wilcoxon, 1945). This test compares the means of the same sample of observations at two different time points in the event that the data are non-normally distributed. The method ranks the data and then compares the rankings of each data point, and thus approximates a normal distribution. The outputs are interpreted the same way one would interpret a dependent $t$ test; that is, the testing provides a W statistic that is compared to an expected value. This creates a hypothesis testing situation, testing the following at the 0.05 (95%) level:

\[ H_0 : \text{before implementation} = \text{two years after implementation} \]

\[ H_1 : \text{before implementation} \neq \text{two years after implementation} \]

Of course, this strategy excludes districts that adopted online learning in the two years before the last year of enrollment in the dataset (2014) because it would require analysis beyond 2014. This means that the before-and-after analysis could only occur with 106 schools in the dataset, which is less representative than the full sample (allowing possible alternative outcomes for those schools that adopted later). To
complement this, the percentage of districts that had gains or losses of proportional enrollment was also examined in order to approximate an idea for how frequent the strategy of adopting a full-time online school worked in regaining enrollment. This calculation allows the researcher to identify those districts that had the most success.

**Qualitative Supplements**

Interviews and observations supplemented the quantitative findings in the study. The purpose of these interviews was to identify examples of the quantitative patterns and seek possible explanations as to why these patterns occurred. This means that while researcher-collected data was obtained from the school districts, administrators were also asked if they would be willing to participate in an interview and/or if they had any meetings or events related to online learning that would be helpful for the researcher to observe.

While this type of qualitative inquiry did not allow for the identification of all patterns, nor did it represent possible findings of the whole sample, it did provide examples for particular patterns seen in the quantitative data. For example, administrators were asked when a particular district adopted online learning and why, and then these responses were triangulated with quantitative findings. Another example would be an interviewee explaining the types of students that left her or his district for online schools. This data then was considered in tandem with quantitative understandings of the demographics of districts that lost the most students. Instead of coding and extrapolating
rich data, the purpose of the qualitative data in this study was to explain and to provide examples of the findings gleaned through the quantitative analysis.

The interviews typically ranged from 30 minutes to an hour. They included asking administrators and officials with knowledge of online learning (ranging from IU to district or to school officials) inquiries related to each of the quantitative research questions. For the Q1 set, the interviewer asked administrators to explain who leaves the district and why they believe this explanation to be the case. For Q2, the interviewer looked for information about the creation of online school patterns, why districts created an online school, and why they created the program when they did. This also allowed for the consideration of whether there were other strategic actions at play and other uses for online schools, online school vendors, and costs. For Q3, the interviewer asked the administrators to share their perception of whether the creation of an in-district, full-time online learning option was effective in regaining students for the school district.

The process of querying for interviews allowed for the inclusion of 26 subjects. In addition to these interviews, when an administrator provided extra details via e-mail, the researcher took notes and included the e-mail text as explanatory examples in the findings. These e-mail notes were included with interview data as a further set of data to supplement the quantitative findings. Additionally, this also allowed the researcher to attend two meetings related to online school concerns. The first meeting was a town hall open to the public and the second was a meeting with a vendor regarding online learning contracts. The latter came via invite at the request of one of the interview subjects.
Limitations

There are indeed limitations in the research design across each of the steps as well as the study overall. A major limitation in the first set of research questions is that the dataset only included district-level variables. This created an inability to identify the specific traits of each student who chose a cyber charter school. The limitation is an issue because it allows for the possibility of families within a district whose demographic traits were not reflected and for them to go undetected. While this is a clear limitation, it does not counter the findings per se; it only reduces specificity. As will be shown, disadvantaged districts indeed lost the most students. So in a sense, it is evident regardless of the particular moves within districts that disadvantaged districts overall lose greater resources to cyber charter schools.

Other limitations include grouping all cyber charter schools together in the analyses. For example, this grouping occurs in the regression analysis of districts most likely to lose students to any cyber charter school. This strategy was used because developing proportions for each district and 13 different schools would become unwieldy. However, based on the PVAAS data described earlier in this chapter, every cyber charter school in the entire state performed with lower growth metrics than the state average, so these concerns would not drastically bias the understanding of how school quality influences moves overall. The researcher tried to mitigate counterfactuals related to this issue with the growth metric comparison among individual moves, but it would be interesting to see the choice set of individual students within the cyber charter school sector by comparing cyber charter school enrollees to each other. This is a direction for
future research. If the within cyber charter school choice patterns hold, it would reinforce findings of the mover data of this study.

Further, while this analysis allows for examination of patterns related to socioeconomic and demographic variables, it does not provide a way to definitively explain why these differences persist. The reason that the patterns emerge in the dataset may be from unobservable variables, such as fears linked to school safety, a greater need for flexibility in scheduling, or extreme isolation from traditional public schools. The findings about moves into the cyber charter sector reported here reflect levels of education, but there is the possibility that while these findings align with theoretical expectations, they may be the result of another unobserved possibility. This likelihood was mitigated through interviews, but further research on why students move into lower performing environments is needed. However, as explained in the literature review and regardless of the reason, obtaining lower levels of education have shown to lead to disadvantage later in life (Baker, 2014), so the moves still identify and allow for this concern.

There are also limitations related to the organizational response portion of the study. As mentioned, there are concerns with the construction of the variables. The market variable is an aggregate, although concern should be mitigated by the depiction of high correlations with each yearly student-loss rate. Each institutional variable may also raise concerns when considered individually, although taken together, the concerns to these limitations subside. One limitation comes through some issues related to missing data (i.e., the missing start date on four IUs affecting 15% of the school district sample). There may be unobserved variables that influence response patterns that are undetected in
this study. Additionally, there are limitations of the IU variables. While assigning “2016” to a non-adopting IU in order to attribute a top-end year for the IU variable reflecting a particular adoption year (and thus not excluding these non-adopters from this portion of the study), this variable likely suppresses the results toward lowering the level of the institutional effect. Thus, if the coefficients are null or not significant for the institutional variable in the model, then changing the model using a later start date (for example, starting in 2020) would show a stronger relationship. This again provides further justification for running three IU models because a single IU variable has limitations. Using multiple IU variables and discussing them in tandem help augment the internal validity of the research design.

Another clear caveat that should be made with this study as a whole is it cannot be shown if the discovered phenomena are specific to cyber charter schools in Pennsylvania or if these patterns happen elsewhere. However, at the very least, this study surfaces a real possibility that certain subsets of the population may choose programs counter to policy-maker goals in improving quality based on choice and that the school district responses are ineffective and inefficient. Therefore, the research presented here must not be overstated, and there is a need to recognize that the trends found in Pennsylvania represent only one set of findings in one study in one state context. However, the findings that the study reflects are certainly noteworthy to school choice and online learning advocates and policy-makers elsewhere.
Chapter 5

Findings

The Stratification of District Losses Over Time

Educational Attainment and the Percentage of Students Leaving

No statistically significant relationship between the percentage of students lost to cyber charter schools and prior parental levels of educational attainment appears to exist in the early stages of the cyber charter school movement. Over time, a relationship seems to develop and strengthen. This pattern is shown in Figure 5-1, where the first image graphically depicts no relationship in 2002–2003, which is reflected by the non-significant correlation coefficient of -.045. In the middle image, the districts with the lowest levels of educational attainment have higher proportions of students leaving their districts in 2007–2008, with a statistically significant correlation coefficient of -.459. This relationship strengthens in 2013–2014 with an even stronger coefficient of -.604. This initial evidence without statistical controls indicates that as cyber charter school enrollment increases over time, districts with lower levels of adult educational attainment lose higher proportions of students. The graphs depict the actual relationship, and the correlation coefficients represent the connection between the log of leaving students and the proportion of educational attainment, as explained in Chapter 4.

To increase the validity of only examining the graph and correlation coefficients, the next step in the analysis related to the Question 1 set is to use more precise statistical strategies to examine each year in the dataset (2002–2003 to 2013–2014, consecutively).
Figure 5-1. Relationship Between Educational Attainment in a District and Students Leaving for Cyber Charter Schools.

Note. The x-axis is percentage of adults having higher than a bachelor’s degree in a district. The y-axis is the proportion of students in a district enrolled in a cyber charter school on October 1 of that year. The coefficients come from the correlation between percentage receiving a bachelor’s degree or higher and the log of the proportion students leaving for cyber charter schools. ** = p < .01. Data adapted from the Pennsylvania Department of Education and the American Communities Survey, 2010–2014.
This step includes using regression techniques and adding statistical controls. These controls include a variety of demographic and district-based indicators to determine other possible explanatory variables for students leaving and if the relationship between education and proportions of students leaving still holds when these other variables are added to the statistical models.

The patterns found with the correlation coefficients hold in the regression models. The most recent model reported here represents the final year in Figure 5-1 and shows the same end result of the pattern described in Figure 5-1. As shown in Table 5-1, three statistical models represent the most recent year in the dataset. These models show how educational attainment relates to the proportion of students leaving for cyber charter schools. The finding that educational attainment is a predictor variable holds in all three models, suggesting that educational attainment indeed relates to a district losing students to cyber charter schools.

The first model in Table 5-1 is the null model without statistical controls. It shows that the regression coefficient representing the relationship between the log calculations of the proportion of students leaving for cyber charter schools and the percentage of adults in a district with a bachelor’s degree or higher is statistically significant (effect sizes are unintelligible in log transformations). Models 2 and 3 show that this effect holds with a number of statistical controls. The reason for using both models instead of one is...
that below basic percentage and free and reduced lunch scores are highly correlated, so
only one is included in a model at a time.

Table 5-1. Relationship Between Educational Attainment and Students Leaving, Multiple

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage with bachelor’s degree or higher</td>
<td>-.027** (.002)</td>
<td>-.019** (.002)</td>
</tr>
<tr>
<td>Percentage of students scoring “below basic” in math</td>
<td>.025** (.006)</td>
<td>.003 (.002)</td>
</tr>
<tr>
<td>Percentage free and reduced lunch</td>
<td>.003 (.002)</td>
<td></td>
</tr>
<tr>
<td>Percentage of White students</td>
<td>-.004* (.002)</td>
<td>-.008** (.002)</td>
</tr>
<tr>
<td>Locale (reference: rural)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>-.190 (.125)</td>
<td>-.170 (.129)</td>
</tr>
<tr>
<td>Suburban</td>
<td>-.121* (.055)</td>
<td>-.132* (.056)</td>
</tr>
<tr>
<td>Total district expenditures per student</td>
<td>.000* (.000)</td>
<td>.000* (.000)</td>
</tr>
<tr>
<td>Number of students per school</td>
<td>.000 (.000)</td>
<td>.000 (.000)</td>
</tr>
<tr>
<td>Constant</td>
<td>1.77** (.311)</td>
<td>2.18** (.372)</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.3649</td>
<td>.436</td>
</tr>
</tbody>
</table>

Note. Data adapted from the Pennsylvania Department of Education, the National Center for Education Statistics, and the American Community Survey 2010–2014.

An additional finding in these models is that other variables relate to students leaving a district for cyber charter schools. The other variables of significance are a district’s percentage below basic on PSSA tests, which suggests schools with lower performance are more likely to have higher levels of students leaving; race, which shows schools with lower levels of White students have higher levels of students leaving; and
some geographic elements, in that while urban and rural districts have no differences in proportions of student choosers, suburban districts are less likely to lose students. Taken together, districts that have lower scores on state tests and higher proportions of disadvantaged populations—particularly along the lines of levels of education and race—are most likely to have a higher number of students leave for cyber charter schools. This relationship did not exist in the beginning of the cyber charter movement, but it did emerge and strengthen over time.

When asked to consider and describe the students who typically left their school district, superintendents and school leaders tended to echo these quantitative findings and added some insight as to why they felt this trend happened. These reasons include having high levels of homeschooling, lack of success in traditional environments, or simply just students not fitting within the cultural, academic, and behavioral expectations of the traditional school routines. One superintendent described these families as perhaps being convinced to leave due to alternative reasons other than school quality:

They’re not telling us they’re running away from [our district]. They’re telling us they are running to what they perceive to be something better…they are making judgments based on in many cases marketing...and our lack of marketing as a school district.6

Among their concerns, school district leaders suggested that of the school districts that lost the most students, the educationally disadvantaged were most likely to leave because they were persuaded into leaving due to discomfort in the district environment,

6 The names and schools of interview subjects are withheld to preserve anonymity of sources.
despite academic limitations in the new schooling environment. A general consensus of school leaders feel that “the ones that least benefit from it often get in it” and “we had numerous kids at the [high school] that weren’t functioning well in the traditional school environment so they started opting for cyber school” and “there is a reason they are in cybers … parents don’t want to chase them around and get them into school.”

Leaders also suggest that other rationales for students leaving include homeschooling, seeking courses that the traditional school did not offer, or needing a flexible schedule for medical or athletic reasons. While they describe other reasons, the first and most pressing reason the administrators cite is that the majority of students who left their districts for cyber charter schools were “alternative” students; a coded word meaning to represent disadvantaged students. The fear among the leaders suggests that these are the precise students they would not want to see in learning environments comprised of unstructured, independent time that they feel is the hallmark structure of the cyber charter school model.

Students Move to Lower Performing Cyber Charter Schools

The simple comparison for student choosers based on the math growth measure from public school to receiving cyber charter indicates that the vast majority of students moved into schooling environments with lower academic growth. As shown in Table 5-2, the range of all school growth metrics went from -41.30 to 39.00, with a mean of 0.31; traditional public schools range from -22.9 to 39.00, with a mean of 1.63; and cyber charters ranged from -25.80 to -0.80, with a mean of -11.69. These ranges and means
help interpret scores and show that cyber charters as a sector tend to have drastically lower scores; again, these growth metrics help consider student growth and are less prone to selection bias (that is, it helps quell the argument that the schools with lower scores have them because they have larger proportions of disadvantaged students). Table 5-2 shows the range of the growth metrics between the sending schools and receiving cyber charter schools, which is -56.80 to 22.10, with a mean move of -9.363. This trend of students moving into schools with lower growth metrics is so pronounced that 84% of the student moves were to cyber charter schools of this nature, suggesting that the moves have not been academically advantageous for the majority of cyber charter students.

Table 5-2. Difference in Algebra Scores Between Sending District and Receiving Cyber Charter School.

<table>
<thead>
<tr>
<th>Growth metric, all districts, charters, and cybers</th>
<th>Range</th>
<th>Mean</th>
<th>Std. dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth metric, all traditional public school districts</td>
<td>-41.30 to 39.00</td>
<td>0.31</td>
<td>10.41</td>
</tr>
<tr>
<td>Growth metric, all cyber charter schools</td>
<td>-22.90 to 39.00</td>
<td>1.63</td>
<td>9.93</td>
</tr>
<tr>
<td>Growth metric, districts that the students opted out of</td>
<td>-25.80 to -0.80</td>
<td>-11.89</td>
<td>6.24</td>
</tr>
<tr>
<td>Growth metric, receiving cyber charters</td>
<td>-25.80 to -0.80</td>
<td>-10.64</td>
<td>10.14</td>
</tr>
</tbody>
</table>

Growth metric differences between send and receive | -56.80 to 22.10* | -9.363 | 10.14

*84% of moves were to schools with a lower growth metric

Loss of Students and Institutional Traits Both Predict Responses

In an effort to consider how and why school districts respond to the loss of students, the second set of research questions of this study explores variables that relate to response patterns. As mentioned in Chapter 3, a number of organizational factors may relate to the ability of a school district to respond and create a full-time online school sooner than others. While interviews and pilot study data suggest a number of response
strategies, the most ubiquitous and logical strategic response is for traditional public school districts to create (internally or outsourced externally) their own versions of a full-time online school. The findings presented here suggest that the responses relate to both losing students to cyber charter schools and to institutional pressures.

This section of the study considers the non-adoptions of online schools. The term non-adoption rate is what is known as survival estimates in previous CPH studies. Non-adoption is defined as a school that has not yet created or outsourced a full-time online program for its own students to use. For example, when all school districts in the sample are considered, the non-adoption rate starts at 100% in 1998—before the first cyber charter school was created—and falls to below 25% in the most recent year of the data. In 2010, the year before subsidies from the state disappeared, more than 50% of districts offered their own version of an online school.

Figure 5-2 depicts the non-adoptions rate with two lines. The blue line associates with school districts that did not have an IU that adopted online learning support before 2010. The red line represents districts whose local IUs had a full-time online learning program before 2010, which is the year associated with a 50% school district adoption rate. This comparison suggests that those districts with IU online learning support programs were more likely to offer their own online learning earlier than the districts who did not have IU support, as indicated by a continual presence of a lower non-adoptions rate throughout the time period of the study.

Figure 5-3 shows the same type of comparison as Figure 5-2; however, the red line in Figure 5-3 is a dichotomous variable for the district that lost more than the average proportion of students to cyber charter schools. This comparison suggests that school
districts that lost above average proportions of students to cyber charter schools adopted online programs quicker. Taken together, Figures 5-2 and 5-3 offer evidence to suggest that the variables related to organizational support and/or institutional pressure, as well as variables representing the rate of losing students in a school district, relate to the adoption patterns of online learning in a traditional public school district. When higher proportions of students leave, adoption occurs at a faster rate. Likewise, if organizations affiliated with the school district support online learning programs, then the same type of trend emerges.

![Figure 5-2. Non-Adoption of Full-Time Online Schooling Based on IU Status.](image)

The lines represent the non-adoption rate, or the likelihood a school district does not adopt a full-time program in Pennsylvania at the given time points. The red line represents a dichotomous variable that a district’s local IU had a full-time online learning program before 2010, which is the year associated with a 50% school district adoption rate.
Figure 5.3. Non-Adoption of Full-Time Online Schooling Based on Loss of Students to Cyber Charter Schools.

The lines represent the non-adoption rate, or the likelihood a school district does not adopt a full-time program in Pennsylvania at the given time points. The red line represents a dichotomous variable for districts that lost more than the average proportion of students to cyber charter schools.

When these non-adoption rates are explored through analytical models, the trends are consistent with those depicted in the non-adoption figures. Table 5-3 describes these analytical models and shows the hazard ratios affiliated with variables that represent the loss of students to cyber charter schools and institutional supports and/or pressure, as well as additional variables that relate to school district composition. All three models in Table 5-3 show that as the percentage of lost district students to a cyber charter increases, the hazard ratio associated with creating an online school is more likely to be significant and greater than 1 (as cyber losses increase, likelihood of early adoption increases). Model 1
in Table 5-3 also shows that when a school district is in an area where the IU adopted and
offered an online program before 2010, the hazard ratio is strong and above 1 (early
support means earlier adoption risk in the district increases). Models 2 and 3 show as the
adoption year of an IU increases (Model 2), or the adoption year of the districts
geographically near to a school district increases (Model 3) adoption risk decreases.

Table 5-3. Hazard Ratios Associated With School District Traits and Adopting Full-time Time
Online Learning.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of cyber charter students lost</td>
<td>1.54*</td>
<td>1.56*</td>
<td>1.67**</td>
</tr>
<tr>
<td></td>
<td>(0.31)</td>
<td>(0.31)</td>
<td>(0.31)</td>
</tr>
<tr>
<td>IU stated they adopted before 2010</td>
<td>1.47*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual year IU first participated in online learning</td>
<td></td>
<td>0.95^</td>
<td></td>
</tr>
<tr>
<td>Average adoption of online learning in the district’s IU</td>
<td></td>
<td></td>
<td>0.77**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.06)</td>
</tr>
<tr>
<td>Percentage free and reduced lunch 2009–2010</td>
<td>0.47</td>
<td>0.51</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>(0.42)</td>
<td>(0.45)</td>
<td>(0.44)</td>
</tr>
<tr>
<td>Percentage of White students 2009–2010</td>
<td>1.16</td>
<td>1.20</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>(0.99)</td>
<td>(0.84)</td>
<td>(0.44)</td>
</tr>
<tr>
<td>Total population in a district</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>2009–2010 Percentage below basic in math</td>
<td>1.01</td>
<td>1.01</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Population bachelor’s degree</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Locale (rural is the reference)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>0.55</td>
<td>0.55</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>(0.40)</td>
<td>(0.40)</td>
<td>(0.37)</td>
</tr>
<tr>
<td>Suburban</td>
<td>1.30</td>
<td>1.30</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td>(0.29)</td>
<td>(0.29)</td>
<td>(0.24)</td>
</tr>
</tbody>
</table>

Note. Data adapted from a random sample of Pennsylvania school districts and the Common Core of Data from the National Center for Education Statistics. ^ = p < .10; * = p < .05; ** = p < .01
Taken together, these findings suggest that both institutional pressure and student loss variables are associated with the hazard risk of a school district adopting a full-time online program in Pennsylvania. The implications of these findings are discussed further in Chapter 6, but they reveal that while the educational marketplace does seem to influence the rate of adoption of online learning in a traditional public school district, institutional variables also explain adoption. This shows that in the strategic action field of Pennsylvania online learning adoption, a complex set of logics include institutional and market traits.

These findings were also reflected in the responses of school district administrators in interviews about online learning adoption. A common phrase used to describe this trend was that districts needed to “stop the bleeding,” although not all school districts had the capacity to create online schools of their own. For example, one administrator explained the following:

My only two goals for [creating an online school] were: A, stop the bleeding, meaning stop our [district name] students from leaving to go to outside cyber schools…and enroll them in our virtual program and B, try and get students that had already left [district name] to go to outside cybers back into our Academy or even back in the classroom.

Another said, “We implemented a cyber program in the spring of 2015 to help stem the flow of students leaving the district to attend outside charter schools and cyber charters,” and another explained, “It was absolutely a survival situation. Because of our geographic location and the impact not only of cyber charters, but the impact of brick and mortar charters, we for quite some time have been looking for ways to reduce our tuition
expenditures.” Across the vast majority of interviews, administrators pointed to the cost of cyber charter schools as a main reason they created their own full-time online learning programs.

However, when asked about strategies and the types of programs they used, districts overwhelmingly tended not to create or have the capacity to create their own online courses. In developing their online programs, they outsourced courses (content and often even instruction) to alternate providers, some of which were the very providers running cyber charter schools. This led to some interesting strategic scenarios that school districts had to consider. For example, at one meeting where an online content provider was trying to sell its courses to school districts, the provider explained that a student, if enrolled through the traditional public school districts, could take a full course load for just over $4,000. However, if the district “lost” this student to the cyber charter school run by this same online provider, it would lessen the traditional district’s tuition average (which for that particular district was more than $10,000 per student).

The lack of capacity of school districts to create their own online courses also suggests that this is why IU-related variables were significant in the modeling. Many of the IUs created some sort of support programs for the districts so they could achieve cost reduction strategies while having the IU coordinate operations. One IU leader explained the following:

[The IU online learning program] came about two years ago and started from a need of school districts losing a great deal of money to cyber charter schools. You know … 10 years ago when cyber charters first came out, school districts didn’t take notice, they didn’t think that the cyber charters were valid or they would only
be around as a fad. As the years passed, they were writing very large checks to cyber charter schools [because] students that had been in their district [were] leaving and going to cyber charter schools. Just a few years ago [the districts] realized “you know we’re going to need to do something to stop the flow of students leaving and the only thing we can do is offer a comparable program to what cyber charters do.” So that was the main goal initially of the program that I’m managing.

Examples like these were common throughout Pennsylvania. IUs developed programs to assist school districts in creating full-time online schools that the districts often did not have the capacity to create on their own. These programs were not innovative additions to cyber charter schools; they were mimetic responses, perhaps to show students and families they could provide the same services. An alternate strategy for some school districts was to create their own, innovative online program in an entrepreneurial fashion.

This strategy, though, was rare as there was only one instance in the sample where a district created and ran all of the online courses on their own.

**Still Bleeding and Not Efficient**

The findings in this section reveal a major concern related to the strategy of creating or outsourcing a district online school, which is that the strategy did not seem to “stop the bleeding.” This portion of the analysis sought to understand if a school district created an online school, whether or not it led to decreasing the numbers of students leaving for cyber charter schools. Initial descriptive evidence shows that in only 33 of the
106 cases able to be analyzed did the district achieve this goal of “stopping the bleeding” (again, only 106 adoption cases were used because of available data). In fact, on average, the loss of students to cyber charter schools in the districts increased by .4% over the two-year period, and these differences are statistically significant.

The hypothesis test, as described in the methods section, leads to rejecting the null hypothesis (that the two means were equal), providing statistically significant evidence to suggest that the mean losses before and after implementation were different. However, the means were not different in that fewer students were leaving the districts; rather, more students left after implementation. Simply stated, in the majority of the cases, school districts tended to lose more students to cyber charter schools after implementation of a full-time online learning program. Table 5-4 summarizes these results, explaining that on average, a school district had a mean of losing 1.5% of its population to cyber charter schools, and then two years after implementation, it lost 1.9% of its students.

As noted, there are a number of seemingly unsuccessful strategies school districts used in creating full-time online schools of their own. For example, one that was unsuccessful was explained by a superintendent:

To start a virtual academy in your district you can either farm it out to an IU or third party, but the model that we used was to use our own teachers. If kids were going to go to our virtual academy, and a lot of churn, kids going out to cyber and back to brick and mortar, kids go back and forth a lot. We wanted to make that transition as smooth as possible … Second we wanted to get some of those dollars back into the pockets of our teachers.
This district lost more students in the two years after analysis than they did in the year before implementation, though this lack of success was not reflected in interview responses.

Table 5-4. School District Difference in Loss to Cyber Charter Schools After Implementing a Full-Time Online School.

<table>
<thead>
<tr>
<th></th>
<th>Mean percent loss</th>
<th>Wilcoxon signed rank test W statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year before implementation</td>
<td>Lost 1.5% of district</td>
<td></td>
</tr>
<tr>
<td>Year after implementation</td>
<td>Lost 1.9% of district</td>
<td></td>
</tr>
<tr>
<td>Difference comparison</td>
<td>0.4% increase in loss</td>
<td>-5.082, reject the null, the means are not equal</td>
</tr>
</tbody>
</table>

Another unsuccessful district had the strategy of using an outside provider, but only allowed students into the program that they felt were motivated enough to participate in independent online learning. When asked about the effectiveness of their strategies linked to charter and cyber charter schools, the assistant superintendent explained, “As long as the school is there, kids will be in it … some parents just want to choose something different.” Another superintendent in a different district that also had limited success in re-recruiting, reiterated this claim saying, “Some people that leave, they are just unhappy with you and they are not coming back no matter what.” And a director of a program that runs one of the school district’s online schools suggested that there are moral dilemmas of offering and recruiting students for online programs that they often do not feel are appropriate for a particular student, saying that at times, they will coach or talk students out of going online, but worried that if they pursue this strategy they “might never get a kid back in the building.”
One of the districts that did have success in bringing students back through their online program used a number of strategies specifically targeted at the students who left. This district purchased online learning capabilities from a number of providers, including those already running cyber charter schools. The curriculum and teachers from the course provider cost this district $3,750 per student if the student took the online classes through the district, but $11,000 through the cyber charter school, even though it was the same content. The differences occur because of the funding formula structure.

An administrator of another program that has successfully regained students explained that as soon as their district hears of a family thinking about leaving, they call the family, give them a brochure, and do whatever they can to keep the student in their district. This particular district tries to coach students out of online programs if they do not approve of the suitability of online learning for the student, but ultimately leave the decision to the parents. This often puts the district in a difficult position because “[online learning] is not for everyone ... A lot of times, I want to [tell parents] they are making the wrong decision [about enrolling].” This administrator later said she thinks online learning is for highly motivated students only, but these are not the students who tend to enroll. This district let parents enroll these students in their online program anyway, even if they felt a student would fail. It was more important to the district to keep the student in an online program that they felt was not suitable than to let the student enroll in a cyber charter school. When the student was ultimately unsuccessful in the online setting, the administrator explained, they would then try to coach the student back into the classroom.

Another district, which is an outlier in this study, more recently began a program (and thus was not included in the means testing analysis). They decided to use a
completely different strategy. This included embracing the idea that students who they considered to be “at risk” would indeed be the ones who would leave for cyber charter schools. The administrator for this program said he felt most districts had the response process wrong, and that when a student left for a cyber charter school “they are basically telling the districts that they need something else.” This scenario, he said, forced his district to ask, “How do you support [at risk] eLearners?” Their response was to design a blended program that brings students on a part-time basis into the school building in a unique space. The district would then allow for the flexibility that these students craved, but also supported them in person. While it is unclear of the success of this program to date, it is an interesting alternative strategy to consider.

Taken together, quantitative evidence suggests that the strategies school leaders have used to reduce losses to cyber charters have not regularly worked in practice. The reasons for these programs not working may relate to the mindset of parents, the refusal of school districts to enroll students in online programs in which they do not think the students will succeed, or perhaps the capacity of the districts themselves. However, financial structures encourage the districts to embark on strategic actions that bring students back into the districts, and if they outsource the content and provide the students virtually the same experience as the cyber charter school program, they can save thousands of dollars per student. This saving occurs simply due to the fact that the student enrollment into the program came through the district and not through a cyber charter school.
Chapter 6
Discussion and Directions for Future Research

Discussion of Findings and Recommendations

Summary of Findings

The first findings section shows that the traits associated with the likelihood a district will lose a higher proportion of students to cyber charter schools are the proportion of bachelor’s degrees or higher in the district, as well as other variables that represent disadvantage: race, previous school scores, and non-suburban districts. The second portion of these first findings suggests that students tend to move into cyber charter schools with lower academic growth metrics. A concern emerges that disadvantaged populations are making moves into academic programs that are worse than their previous placements.

The second findings section shows that both institutional and market-based variables relate to a district’s response in using full-time online learning as a response strategy. It seems that districts that lose the most students are more likely to be the first to create their own online school; however, this is also true of school districts in areas affiliated with IUs that have higher and earlier rates of online learning adoption. This data is summarized colloquially in some of the responses of leaders, as they suggest they adopted online learning to “stop the bleeding,” but often only did so when they had the
support of an IU or other school districts. This type of response provides evidence to the understanding that there is a complex intersection between competitive structures and institutional logics, thus supporting the use of a SAF framework that moves towards understanding how these logics interact in the strategic decision-making of school district leaders.

The third findings section indicates that the strategy of creating an online school typically did not work in regaining student enrollment or reducing the number of students lost to cyber charter schools. Some interviewees suggested possible reasons that describe this pattern: Leaders may coach students out of online programs if they feel the students do not have the capability to perform well in an online setting, or school leaders feel some students just want to “leave anyway.” The cyber charter school tuition rates (the rate of sending districts’ per-pupil expenditure) appear to be more expensive to the districts than if they would find ways to enroll students in their own outsourced online programs, even if these were the exact same programs and/or courses used in the cyber charter schools. These patterns suggest that even when a competitive strategy is at play in an organizational behavior, this strategy may not lead to advantageous results for individual school districts or the system as a whole.

This chapter discusses the implications of these findings. It provides, briefly, policy and leadership recommendations. It concludes with directions for future research that will in turn enhance findings first uncovered in this dissertation.
Choices and Consequences

The findings related to the school districts most likely to lose students to cyber charter schools surface a challenge to an assumption related to school choice: What happens if disadvantaged families choose schools that are of lower academic quality than the ones that they left? This study provides evidence that this occurs as a response to Pennsylvania cyber charter school policy and practice. Educationally and socially disadvantaged school districts are more likely to lose students to cyber charter schools. Based on growth metric data, the overwhelming majority of these moves saw students enter programs with lower growth measures than the ones they left. This challenges the idea that choice is a mechanism that leads to improved outcomes in the case of cyber charter schools. It seems that educational markets do not necessarily lead to improving education through innovation. Instead, it suggests that cyber charter schools and cyber charter school policy have acted as agents that further stratify educational advantage in Pennsylvania.

This pattern problematizes certain developments and general assumptions linked to choice policy. One assumption suggests that families who wanted to leave their districts were more likely to be from districts of lower academic standing. After controlling for this, the districts with higher educated families tended to lose fewer students to cyber charter schools, suggesting that previous levels of educational attainment serve as a buffer for some to realize that while their traditional public schools are of low quality, moving to cyber charter schools could be worse. One reason for this pattern would be that prior levels of educational attainment relate to the capacity to make
choices in an educational marketplace. Higher levels of education are associated with greater abilities to make decisions and understand complex data (Baker, 2014). So in a choice-based system, ironically, this could lead to choice serving as a stratifying mechanism that sees educationally advantaged individuals making decisions that perpetuate their educational advantage.

As reflected in Pennsylvania law and echoed through school choice advocacy, the ability to choose is assumed to be a primary mechanism that cures the bureaucratic ailments that choice proponents suggest drive down the quality of public schools (Chubb & Moe, 1990). This argument has been made for more than a quarter of a century and is still proclaimed in current think tank reports (e.g., Wolf & Egalite, 2016). This dissertation provides an example that challenges this logic, especially because it explores a purer choice scenario where geographic and enrollment boundaries are not relevant. This study should not be used to discount programs like high-performing charter schools that do indeed advance goals of equity; however, when considering Pennsylvania trends, it is difficult to assert that choice is always a causal mechanism that raises quality. The lesson to choice proponents, perhaps, is that choice is a reflection of preference between limited options, but this preference is not always a reflection of quality.

The growth metric comparisons between sending districts and the cyber charter schools that students enter highlight a consequence of this possibility. One of the counterfactuals to cyber charter school quality concerns is that quality is ultimately a function of the enrolled student population. However, growth metrics show how students perform relative to their previous school rather than in aggregate. The growth metrics presented here, as well growth metrics from other studies (CREDO, 2011, 2015), solidify
concerns related to performance while the disadvantaged school districts in Pennsylvania fund lower performing programs.

One issue that needs to be further researched related to these concerns is if student moves are not academically advantageous, then what other factors are determinant of student moves, and why are students and families making them? Based on this study, trends relate to the demographic traits of communities. The school choice decisions of members of these communities may contradict the policy intentions of using choice to improve academic performance. Policy-makers must understand these other needs to ensure that they are met, whether in a traditional or choice-based system, while also ensuring that meeting these needs aligns with improving student academic performance.

This dissertation and the arguments presented here do not ignore the fact that other scholars, at times, have found empirical examples of academic gains in choice situations and charter schools (as reviewed in Wolf & Egalite, 2016). Explaining these findings in light of the theoretical challenges posed in Pennsylvania suggests that positive results relate to unobserved variables occurring in tandem with parental choice and not directly from choice itself. These variables may include the efficacy of individual programs, changes to the structure of schools in how they handle staffing and/or leading, or even just the presence of an intensive reform initiative in an area that had been previously neglected. It is difficult to tell if gains are a product of any of these or other variables, but as shown in Pennsylvania, choice policy should not be used as a guarantee to universally improve the educational system.

Another possibility that may explain the differences in Pennsylvania versus positive findings elsewhere is that there may exist issues related to both capacity and the
types of choices available. In the Pennsylvania cyber charter school scenario, disadvantaged traditional public school districts tend to lose the most students, suggesting that families wanted to leave districts with lower academic standings. They might not have left if they had the capacity (higher levels of previous educational attainment) to avoid a worse academic choice (cyber charter schools). A second explanation as to why patterns in Pennsylvania emerged the way they did relates to the types of choice available. The choices offered in the environment may not actually represent genuine school choice. Perhaps this is the educational policy equivalent of putting a second fast food restaurant in an area with no healthy food options and then calling the environment choice based.

These concerns to capacity and a lack of viable options could be summarized as situations in choice environments that see families as either being “choice rich” or “choice poor.” Perhaps some of the positive findings in charter school studies reflect choice-rich schooling environments with families that have high capacity and/or high-levels of school choice options, while negative findings reflect choice-poor situations where families have low capacity and/or inadequate options. Based on this juxtaposition, the logical change to the framing of choice would be to suggest the very idea that many neoliberal educational proponents say is the problem: Regulate the marketplace of schools of choice to ensure that only choice-rich environments exist.

Indeed, some choice advocates have begun to notice these limitations of the choice framework and have offered recommendations on how to regulate choice to improve quality. These suggestions include giving parents accurate information about choices, offering certain types of admission applications, and providing transportation
(Wohlstetter & Zeehandelaar, 2015). Perhaps another suggestion, based on the findings in this study, is to ensure that parents have the capacity and availability to choose schools that are only of high quality. That is, make all parents choice rich instead of choice poor. Ironically, this suggestion may offer a solution that is the very problem that reforms are trying to solve: raising levels of educational attainment.

Looking ahead at chooser patterns in Pennsylvania, it is difficult to predict how these patterns will evolve. Sociologists and institutional theorists argue that the traditional system would eventually incorporate or eliminate cyber charter schools. For example, as mentioned in Chapter 2, Smith et al. (2015) suggested that when a “risky” product enters an environment, the educated are often the first to adopt it and then turn away from it as knowledge about the risks are made known over time. The next step in this hypothesis is that larger swaths of the population gradually begin to understand and avoid risky choices. If cyber charter schools are indeed lower in quality, then according to this theoretical prediction, they will not be able to sustain themselves. A critical mass of the population will see them as low quality, enrollments will decrease, and programs will disappear.

Market-theory scholars who study the diffusion of innovation in other fields argue that a different trend would occur. They suggest that a “disruptive innovation” would occur, which is the idea that a solution utilized in a small segment of the population starts off by serving a niche need and then rapidly grows in quality to meet the needs of everyone (Christensen, Horn, & Johnson, 2008). These researchers pointed to programs like TurboTax that offered accounting services to a population that could not afford or did not have the capacity to use accountants for tax services. Then, this innovation
rapidly improved and achieved a greater market share, eventually disrupting previous institutions. In this framework, cyber charter schools would drastically improve and then challenge the status quo. However, during the last 15 years, this has yet to happen. So as scholars wait for disruption, a generation of students has been left behind. Also, judging by the history of technology and a lack of success of disruptive innovations in schools in the past (Cuban, 1986, 2009), it seems that programs like cyber charter schools are more likely to disband or to continue as a slightly lower quality option than become disruptive.

The Responses of School Districts

The responses of traditional school districts to choice patterns also help scholars understand the effect of choice and student movement in a choice system. Both the institutional and market theoretical expectations of school district responses suggested simple behaviors that were not simple in practice. School districts did not follow only the logic of markets or institutional isomorphism; instead, evidence suggests they followed both. It was expected in this study, based on these theoretical frameworks, that defined rules of the strategic action field embedded in schooling environments would help describe their response behaviors. Findings support this framing, although there are several quirks to the Pennsylvania context that are ripe for discussion.

Indeed, market pressures seemed to spur response, but they were not the only factor. IU status also played a key role. However, no matter the interplay, responses tended not to work in regaining student enrollment. This result shows a complex interplay between market and institutional logics within this SAF. That is, even in a competitive
environment, normative behaviors are quite powerful forces. Adopting online learning has the logic of an appropriate competitive strategy; however, this strategy in Pennsylvania was not competitive enough to produce real gain in recruiting students back into the school district. This finding suggests that while SAFs may describe the logic of appropriate behavior (i.e., this is how we act competitively), the logic actually may not reflect rational responses for non-adoption and instead reflect appropriate strategic responses that fit the paradigm of what is expected. In other words, it is possible that an institutional logic in choice systems includes the need to appear competitive, act strategically, and leverage surrounding resources in the field, but still follow an institutional reality that does not allow these competitive strategies to be effective.

Alternatively, the reason for school districts failing to re-recruit students may come out of the intersection of competing logics within the administrators themselves. On one hand, administrators reflected the logic of an actor in a competitive market, doing what they needed to do for their organizations to have the resources to thrive. On the other hand, administrators followed a logic in ensuring that they needed to provide students with a quality education that they felt online learning did not offer. Just because a school district had an online program as a response to a cyber charter school did not mean it was willing to enroll any student. Yet, it seems that districts that had success in re-recruiting students did just that.

The difficulty in this scenario lies in the understanding that school district leaders are educators, not entrepreneurs. However, at the same time, they are leaders of organizations who have an absolute vested interest to ensure that their organizations survive and flourish. This interest places school leaders in the position of needing to act
strategically to try to mitigate the losses their schools face due to declining enrollments, but they also need to still fulfill the logic of their professional responsibility to ensure that current students receive a quality education. If they do not trust online education, this puts them in the paradoxical strategic position of providing an online school while trying to convince students not to use it.

A distortion of this line of reasoning emerged in administrators’ responses. They often felt that, if given a choice, certain families would leave regardless of a district’s effort to meet the family’s needs. These districts notably still reacted by offering a full-time online school. Perhaps the intent of this strategy was to signal to other students in the district that while the district was aware of students leaving, the remaining students could remain confident in the district’s abilities because they also created an online school. Stopping the bleeding, to them, was to make sure the situation did not get out of hand.

These patterns should serve as critical insight to policy-makers: School district responses in a market environment not only reflect the enrollment challenges they face, but also the logic of being educators. Interviews with administrators indicated that they develop complex rationales beyond simple market logic. For example, leaders suggested that they did not want to lose certain students to cyber charter schools, but they also did not want to put that child into an online learning program since they, as educational experts, did not feel the child would thrive.

Despite concerns about educational efficacy, it does seem that school district leaders at times used rational tactics. This came when they depicted behaviors that reflected resource preservation (again validating an SAF framework). As the school
districts created online schools, they considered the same vendors as those used in the
cyber charter schools; they paired with their local IUs or other districts to provide their
programs; and/or they coached students in regards to online school enrollment.

Based on the design of this study, it certainly could not capture the full traits of
the field, and it could not consider all of the potential strategies that school districts used
in responding to cyber charter schools. The design of the study focuses on the most
prevalent strategic response (creating an online school) and the idea that most school
districts followed this particular strategic action. Notably, in considering the implications
this study has for improving the educational system, these responses related at least as
much to resource retrieval as they did to educational efficacy and efficiency. This means
that sometimes, school districts re-recruited students and put them in questionable online
programs to save money, but the districts did not necessarily pursue higher quality
educational options for these students. Other times, it meant districts tried to coach
students out of their online programs.

In general, these findings support the strategic action understanding outlined
earlier in the study’s framework. This framework supposed that school districts that
responded early were the biggest losers in term of student enrollment, which they were.
Next, it predicted that 2011 would be a key year for online learning adoption, which it
was because the 2010–2011 school year was the tipping point in full-time online school
creation. The framework also suggested that the least restrictive responses occurred,
which seemed true but was complicated by the competing logic mentioned throughout
this discussion. Finally, the framework suggested that the programs would not necessarily
follow the market expectation of rapid improvement toward educational efficiency and
quality. There is little evidence of improved efficiency and quality happening in Pennsylvania cyber charter schools or the traditional public school district responses.

**Overview of Concerns**

Based on its own stated goals, the Pennsylvania policy related to cyber charter schools appears largely to be a failure. While evidence suggests that the policy did indeed lead to a new delivery modality, based on this study, there is no evidence to suggest that this policy has led to “improved pupil learning,” though this is only one study using one metric of learning. Also, the market appears not to have led to continual innovation; instead, it has allowed for one seemingly ineffective innovation. Additionally, it appears that expanding choice did not make the educational process in Pennsylvania more financially efficient. Rather, it seems to have made it less efficient. More schools with more dispersed costs meant spending inflated amounts for online courses. Policy-makers should pause in concern when a school district shows that they can provide online learning for a third of the cost of a cyber charter school by outsourcing their online learning to the same sources used by the cyber charter schools. This inefficiency suggests that the money-follows-the-student funding policy may have actually inflated costs. Further, the patterns found in Pennsylvania raise concerns for educational equity in that the educationally disadvantaged in this system appear to choose options that further their disadvantage. Finally, strategic processes have seemingly pushed administrators into dilemmas of either providing educational programs that they do not trust or letting a student leave their district.
The evidence from this study in Pennsylvania suggests that there are opportunities for more efficient and more educationally appropriate online learning models. It seems that while the market appeared to be powerful in prompting school districts to action, it was not the only variable linked to a school district’s ability to seek and provide online learning to its students. Out of the strategic actions required for creating an online school, institutional structures such as IUs were important for the school districts in creating and adopting full-time online schools. Meaning, there are opportunities to leverage the institutional capacities already built into the structure of Pennsylvania public schools to create full-time online programs in a better fashion. If parents demand online schooling, the market is not the only way to give it to them.

**Suggestions for Policy-Makers and Leaders**

Pennsylvania can enact solutions that would save money when creating online opportunities that do not include a market structure to make school districts compete with cyber charter schools. Based on the evidence presented in this dissertation, an alternative cost structure would provide students with online learning, leverage competition in a different way to ensure continual quality in online learning providers, and limit the costs levied to school districts. For example, the state could mandate that every school district or IU needs to offer online opportunities for non-traditional students. They could leave the procurement of contracts up to districts or IUs, allowing them to seek bids in outsourcing online learning opportunities. Vendors would compete with each other to offer better online learning services at a cheaper rate, which is preferable to the cyber
charter schools that have less of an incentive to improve because they know they will get a certain subset of disadvantaged or dissatisfied students regardless of how well their programs perform.

Another possibility would be for the PDE to create an online school program itself, much like what Florida did with its Florida Virtual School. Again, as with the concept of school districts seeking and exploring high-quality vendors, the state could do the same. Then, students who wish to opt out of the school district and go online can go through a process managed at a different organizational level but still receive the same program as cyber charter schools. If the state made the school districts pay this cost, it would still be cheaper for the school districts than funding cyber charter schools. The state could leverage the conditions of being the online provider to ensure quality and lower costs, and it could charge each individual district the actual cost of enrolling the student instead of inflated costs associated with sending the district’s per-pupil expenditure. These suggestions propose examples of competition with fewer disadvantages, suggesting that choosing en masse may be more efficient than choosing individually.

For now, in the current policy structure, traditional public school leaders need to continue to consider their position within the SAF of online learning in Pennsylvania. If they only wish to re-recruit students, then one strategy could be to start using the same content and providers as cyber charter schools. Other strategies could include what one district did, which is specifically design programs for the students that school districts know will leave. However, it is not clear whether this strategy worked or if it was just an engaging idea. The difficulty, of course, within this entire conversation of strategies lies
in capacity and in individual role definitions. Many leaders also identify as educators, so fulfilling the role of a savvy entrepreneur may be a difficult proposition. This means that most strategies should include seeking help from peers and other educational organizations like IUs. Some leaders have successfully done this already.

**Directions for Future Research**

This dissertation, of course, is only the first step in analyzing the cyber charter school movement and how it fits in with school choice conversations across the United States. This study raises more questions than it answers, and thus leads to many possible directions for future research. Some possibilities are outlined in this section.

First, more qualitative information is needed about the intersecting logics at play in the Pennsylvania cyber charter school movement. These needs include further exploration about why families are enrolling in cyber charter schools. As mentioned in the limitations section, unobserved variables could relate to cyber charter school choices not captured by quantitative data. Some researchers have looked at these questions in a limited sample in Pennsylvania (Marsh et al., 2009). Adding to this research and creating a more robust conversation about cyber charter school choosers would be a next step to this study. Additionally, there is also an opportunity to further understand the logic of administrators. The basic findings and qualitative interviews here suggest competing logics between being an educator and entrepreneur. Future studies should do rich, in-depth qualitative work to solidify these claims.
Another extension of this dissertation would be to study another cyber charter school context in another state. For example, Ohio has a large cyber charter school movement but likely has a different set of charter school laws. It would be useful to understand if the patterns of this cyber charter school movement occur because of the policy context, a link to a specific provision that appears in both of those policy structures, or universality regardless of how policy is written. Further, as cyber charter school movements grow across the United States, it becomes imperative to create a practical guide for traditional public school leaders to understand how to respond. This could be in the form of a practical report or clearinghouse based on best practices of other responses.

In addition to these leadership concerns and strategies to mitigate them, there was a notable lack of knowledge about online learning in general in the K–12 context. Therefore, researchers should continue to study the most basic questions about the operations of cyber charter schools and online K–12 programs. Who runs them? Who succeeds in them? Who should avoid them? These concerns did emerge when interviewing school leaders who tended to create understandings on their own about who they felt should enroll in cyber charter schools. These recommendations included students who are independent and responsible learners, as they are most likely to read and participate in the activities in an online setting not fully monitored by the in-person presence of an adult. Future research needs to determine if these understandings are universally accurate.

Finally, additional studies should be conducted about choice patterns to be sure that the findings here hold within other contexts and not just between traditional public
school districts and cyber charter schools. A useful starting point within the cyber charter domain would be to explore choices within the sector. This investigation would allow researchers to see if cyber charter students themselves (eliminating some selection bias counterfactuals) choose cyber charter schools based on metrics related to quality or if they choose based on other logic. If they select on quality within the sector, it raises the potential that, over time, within-market structures could potentially lead to improvement. If not, it would further strengthen the findings presented in this study.

Final Thoughts

There might be ways that cyber charter schools could possibly improve over time. But right now, they seem to reflect poor quality academic options. However, just because this study shows students moving into cyber charter schools with lower growth metrics, it does not mean that all online learning should be seen as a net negative for the educational system. There are circumstances when online programs could serve as a benefit to the educational system as a whole. For example, students may need online learning options when they are homebound or in need of medical supervision that does not allow them to attend a physical school, or are highly trained athletes with alternative schedules. However, this does not mean that the model that has spurred the growth of online learning in Pennsylvania is the only conceivable model that will achieve these capabilities, and also it does not mean that raising questions about cyber charter schools means raising questions about all of online learning.
Additionally, just because this study shows an example where school choice does not lead to expected results, it does not mean that school choice is an inherently inept concept. In some instances, it appears that choice may be the only policy tool that can improve outcomes for families who are in poorly performing school districts and hardly improving due to the insurmountable force of an outdated bureaucracy. In a situation like this, it is conceivable to consider possibilities in which providing parents with choices is indeed a good strategy for policy-makers. However, what this study shows is that the universality of assumptions in school choice logic is not universal in practice. A major piece of this logic is that school choice by itself will always lead to a better educational system, which only can be true if the selections and responses to them relate to high-quality schools. Just because a choice is popular does not mean it is of high quality.

Another related point is that this study only shows one metric of school quality, and there are, of course, other metrics that make schools effective. Schools can promote other student outcomes like self-esteem, self-reliance, creativity, and other attributes. These characteristics should also be included before overall quality is assessed when considering school choice policies and outcomes.

This, of course, leads to a philosophical dilemma related to decision patterns and choice conversations. Should we only offer high-quality schools and not let parents make decisions? Should we let parents make decisions and deal with potential consequences while blaming the victims? Should we allow for unlimited choices and forsake improvement goals if these choices do not lead to better schools? Should we consider choice as a policy tool and only consider its use when we know its outcomes will result in higher quality? If so, how do we build this knowledge and these understandings?
While these questions are ripe for debate and future analysis, they ultimately span beyond the goals of this dissertation. This dissertation raises these questions as important ones for debate and renegotiation as the neoliberal education reform movement sweeps through the educational system in the United States, and perhaps globally. In some areas, this movement may lead to better performing schools where the poor-quality options that once existed in the past are now replaced with something else. In other areas, like Pennsylvania, it could mean that those with educational disadvantage select worse academic options then they had before, unbalancing the system, causing responses from school districts, and draining millions of dollars of resources. This situation leaves the public and policy-makers alike to consider if cyber charter schools have provided evidence that the Pennsylvania school choice policy design is adequate. It does not seem as if it is. The state needs to, at best, amend its charter school law and, at worst, start over with something else.

Taken as a whole, the historical context of Pennsylvania cyber charter schools provides insight related to larger topics in educational reform and technology. In Pennsylvania, online learning is hardly something that exists in fringe pockets of the state. Instead, more than 80% of the school districts in the study have begun to offer full-time online schooling to their students. Thus, the Watson et al. (2014) claim that most school districts use online learning in some form is accurate in this context.

However, overall enrollments regarding online learning are less clear, meaning that while online schools may be popular in availability, they may not be popular in use. Cyber charter schools enroll only 2.5% of the statewide population, and school districts are seemingly vying for this slice of the population of students. It is not clear as to the
exact number of students in the full-time programs at the district level; a detail that should be explored in future studies.

In this context, it seems that using technology in K–12 educational settings is popular and influential, but it is not transformative. Cyber charter schools have certainly left their mark on the traditional public school system in Pennsylvania, doing so in ways that are not clearly academically efficacious but have certainly promoted the use of a new schooling type. School districts, through the help of the IUs, have (and perhaps reluctantly) offered online programs of their own while cyber charter schools successfully recruited students from Pennsylvania public school districts, particularly those that reflect metrics of disadvantage. This response tells policy-makers that students from these backgrounds are looking for something different in their schooling environment. Perhaps it is to be able to use technology in school. And perhaps, at this point, it leads to a situation where out of desperation, these students enter environments that further stratify them in ways that cost the school districts in Pennsylvania a great deal of money. This means that in Pennsylvania, the practice of using technology through cyber charter schools might actually be the opposite of transformative or progressive. It seems as if it is regressive.
References


Austin, M., & Mann, B. School choice and strategic action fields: A new approach to theory and research. Manuscript submitted for publication.


from http://www.pennlive.com/midstate/index.ssf/2015/02/big_for-profit_schools_big_don.html#incart_river


Appendix A: Pennsylvania Department of Education Cyber Charter School Guidelines

**Cyber Charter Schools**

**24 P.S. §17-1741-A**

**DATE OF ISSUE:** September 1, 2006

**PURPOSE**

This Basic Education Circular provides guidance for cyber charter schools, school districts, parents, and students.

- In some instances, this document cites legal requirements contained in the Charter School Law, applicable regulations, or court decisions. Those requirements should be viewed accordingly and cyber schools and school districts must comply.
- This document also assists cyber charter schools and school districts in addressing governance, operational, or instructional issues, among others. Public school entities are encouraged to apply the law and these guidelines as they interact cooperatively for the benefit of all school children.
- Many of the provisions in this Basic Education Circular (BEC) refer the reader to the Charter School BEC (24 P.S. §17-1701-A), because the guidance is the same for both cyber charter schools and building-based charter schools. However, when reading the Charter School BEC in the context of cyber charter schools, PDE replaces the chartering school district as the oversight entity for renewed and newly chartered cyber charter schools.

The link to the [Charter Schools](#) webpage will provide a list of approved cyber charter schools in Pennsylvania; scroll down and click on *Cyber Charter Schools Listing*.

**TOPICS:**

1. **Application Process and Charter Issues**
   - **Conversion**
   - **Regional Charter School**
   - **Charter School Appeal Board**

2. **Charter Schools – Board of Trustees**

3. **Oversight**
   - **Working Cooperatively**
   - **Site Visits**
   - **Annual Reports**
   - **Records Access**
   - **Facilities Access**
• Parent Complaint Procedures

4. Accountability
   • No Child Left Behind and the Pennsylvania Accountability System
   • Strategic Planning and School Improvement

5. Renewal or Closure of Charter Schools
   • Renewal Procedures
   • Nonrenewal
   • Immediate Revocation
   • Revocation or Closure

6. Attendance Issues
   • Enrollment
   • Residency
   • Kindergarten
   • Compulsory Attendance
   • Students Institutionalized from a Charter School
   • Expelled Students

7. Discipline
   • Weapons Possession
   • Discipline Policies
   • Due Process

8. Transportation

9. Extracurricular Activities

10. Payments to Charter Schools
    • Charter School Responsibility
    • School District Responsibility
    • School District Payments to Charter Schools
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11. Master Agreement and Major Grant Programs

12. Facilities
    • Borrowing
    • Building Construction Reimbursement
    • Sale vs. Lease
    • Separate and Distinct Entity
    • Construction of a Facility
    • Renovation of a Facility
    • Lease of a Facility

13. Certification of Charter School Teachers
14. Health Care Benefits

15. Special Education
   - Early Intervention

16. Charter Schools and Career and Technical Education

17. School Health Services

18. Providing College Courses

1. Application Process and Charter Issues

Cyber charter schools are established when the Pennsylvania Department of Education (PDE) grants the cyber charter applicant a charter. Section 24 P.S. §17-1745-A of the Charter School Law identifies who may establish a cyber charter school.

Oversight

PDE is responsible for the oversight of cyber charter schools that it has chartered, including decisions whether to renew, non-renew or revoke the charter. The charter of a cyber charter school, approved by a school district under Sections 1717-A or 1718-A of the Charter School Law, that provides instruction through the Internet or other electronic means, remains in effect for the duration of the charter. Cyber charter schools that had their charter initially approved by a school district must seek renewal of their charter from PDE.

Innovation

At the heart of the Charter School Law is the idea that cyber charter schools will serve as laboratories of innovation on behalf of all of Pennsylvania’s schools. Therefore, a cyber charter school applicant must demonstrate that the proposed cyber charter school will provide innovative and unique educational opportunities for students beyond what is currently in operation. A cyber charter school, as part of its overarching mission, is expected to offer students an alternative means of achieving academic proficiency. A successful cyber charter school must be grounded in accountability for academic success. The educational programs offered by the charter school should emphasize the development and broad dissemination of best practices, in the context of ensuring the flexibility and innovative atmosphere that are inherent in cyber charter schools.

Incorporation

A cyber charter school must be incorporated as an independent, public, non-profit corporation and cannot be the subsidiary of another entity, or in any way connected with, or under the control of another entity. In its application, the cyber charter applicant must provide a copy of the cyber charter school’s articles of incorporation that have been filed.
with the Pennsylvania Department of State in order to verify that it is an independent, public, non-profit corporation. Each cyber charter school must have its own charter and Board of Trustees.

Facilities

The Charter School Law requires a cyber charter applicant to provide, “The addresses of all facilities and offices of the cyber charter school, the ownership thereof and any lease arrangements.” 24 P.S. §17-1747-A (16). In addition, a cyber charter school must maintain an administrative office in the Commonwealth where student records shall be maintained. Therefore, a cyber charter school may have more than one facility or office, but the address and ownership of each must be provided to the Department. 24 P.S. §17-1743-A (h).

Management Contracts

A cyber charter school may contract with a for-profit entity for the provision of professional and/or non-professional services to the cyber charter school. However, the cyber charter school’s Board of Trustees must maintain ultimate control of the cyber charter school. If a cyber charter school is to be managed by an outside entity, the cyber charter school must provide a finalized management agreement in its cyber charter application. PDE will review the management agreement to ensure that the charter school’s Board of Trustees maintains ultimate control of the cyber charter school. See, West Chester Area School District v. Collegium Charter School, 571 Pa. 503, 812 A.2d 1172 (2002); School District of the City of York v. Lincoln-Edison Charter School, 772 A.2d 1045 (Pa. Commw. 2001).

Sustainability

A cyber charter school must demonstrate that it has sustainable support by teachers, parents or guardians, and students in order to be granted a charter. The Charter School Appeal Board (CAB) has defined sustainable support as “support sufficient to sustain and maintain the proposed charter school as an on-going entity.” See, In re: Ronald H. Brown Charter School, No. CAB 1999-1, p. 18. “The indicia of demonstrated, sustainable support is to be measured in the aggregate and not by the individual categories from which that support is to be measured” and “failure to demonstrate strong support in any one category is not necessarily fatal to a charter school application.” Brackbill v. Ron Brown Charter School, 777 A.2d 131, 138 (Pa. Commw. 2001).

There must be sufficient support, however, from at least two of the three groups. Sustainable support can be demonstrated by signed petitions of support, letters of support, testimonials of support or in other concrete ways. However, this does not mean that the support must be in the form of enrollments, or pre-enrollments, or personal verbal commitments to sending one’s children to the cyber charter school.

Criminal History Records
The Charter School Law also requires an applicant to include a criminal history record and an official clearance statement regarding child injury or abuse. 24 P.S. §17-1719-A (15), (16). Since most cyber charter school applicants have not hired staff when the application is submitted to PDE, it may be impossible to provide criminal history records and child abuse clearances at the time of submitting the application. These documents must be provided to PDE as soon as staff has been hired. See, Vitalistic Therapeutic Charter School, CAB 1999-5, p. 8; William Bradford Academy Charter School, CAB 1999-8, p.18, n. 6.

Amendment of Charter

If a cyber charter school wants to amend its charter, it must provide PDE’s Division of Nonpublic, Private and Charter School Services with a written proposal outlining the amendment, at least 60 days prior to submission of the amendment, explaining the requested amendment and its purpose. PDE will notify the cyber charter school, in writing, that it approves or disapproves the proposed amendment and its effective date.

Please note: The cyber charter school may not unilaterally amend material provisions of its charter, including but not limited to: changing its curriculum, changing its location, or changing its mission and focus.

Conversion

There are no provisions allowing a public school to be converted to a cyber charter school.

Regional Charter School

Section 1723-A of the Charter School Law states that “all resident children in this Commonwealth qualify for admission to a charter school within the provisions of subsection (b).”

Section 1718-A of the Charter School Law allows for the creation of a regional charter school. However, Act 88 amended the Charter School Law by adding a subsection pertaining specifically to cyber charter schools.

Section 1718-A, which addresses regional charter schools, is not applicable to cyber charter schools. Therefore, any new cyber charter school that seeks a charter from the Department cannot be regional. In addition, when any cyber charter school that was chartered as a regional cyber charter school, prior to Act 88, applies to the Department for renewal, its charter cannot be renewed as a regional cyber charter school.

Section 1749-A of Act 88 sets forth other provisions of the Charter School Law, as well as other laws and regulations that are applicable to cyber charter schools.

Charter School Appeal Board

When PDE denies a cyber charter school applicant a charter, the applicant may revise and resubmit the denied application or may appeal the denial to the Charter Appeal Board. A
cyber charter school applicant may only revise and resubmit a denied application to PDE one time. Any revised and resubmitted application must be provided to PDE within at least 120 days prior to the originally proposed opening date of the cyber charter school.

2. Charter School Board of Trustees

See the Charter School BEC, 24 P.S. §17-1701-A.

3. Oversight

Working Cooperatively

In Section 1702-A of the Charter School Law, the legislature made clear its intent to provide for the creation of “schools that operate independently from the existing school district structure.”

Section 1741-A has established certain powers and duties upon PDE. Those duties include annually assessing:

1. whether a cyber charter school is meeting the goals of its charter;
2. whether a cyber charter school is in compliance with its charter; and,
3. the cyber charter school’s performance on the PSSA, standardized tests and other performance indicators to ensure compliance with academic standards.

PDE also must conduct a comprehensive review of a cyber charter school prior to granting a five-year renewal of the charter. 24 P.S. §17-1742-A. This review will include, but not be limited to, an examination of specific program areas by PDE staff.

Cyber charter schools must work cooperatively with PDE to ensure that they are operating in a fiscally responsible manner and providing quality educational services to students. They must provide sufficient and accurate information for PDE to fulfill its oversight responsibilities.

Site Visits

PDE will arrange periodic visits to the cyber charter school main offices and/or other educational sites, which may include random parent and student contacts. PDE staff will use the PA System of Cyber Charter Review (PASCCR) when conducting specific monitoring site visits. The PASSCR framework can be found on the Department’s website, on the Charter School webpage.

As part of the site visit the PDE staff will expect to be provided access to the following information:

- Student performance data e.g. Reports cards, attendance records, discipline, etc
- Professional development plans for staff
- Enrollment records
- Teacher criminal history and child abuse reports
- Direct observation of teachers working with students
Annual Reports

To help PDE perform the annual assessment, all charter schools are required to submit an Annual Report to PDE no later than August 1 of each year. This document is an important tool for evaluation of the cyber charter school. The information collected from the Annual Reports will be used to help make decisions about renewal or non-renewal of the charter. Repeatedly submitting Annual Reports after the due date or providing insufficient information may constitute a material violation of the charter. If a cyber charter school fails to provide an Annual Report by August 1, PDE will provide written notice to the cyber charter school that failure to provide the Annual Report within a reasonable amount of time may result in the initiation of revocation proceedings.

Records Access

As part of PDE oversight the cyber charter schools are required to provide PDE staff access to records, instructional materials and student and staff records 24 P.S. §17-1742-A. This oversight will include providing PDE with necessary protocols for on-line access to web pages that students and parents would see and to the cyber charter school’s internal administrative links. The cyber charter school shall allow site visits and provide specifically requested reports within a reasonable period of time to ensure that the cyber charter school is in compliance with the charter, the law, testing, civil rights, and student health and safety. Failure to provide requested on-line access and reports to PDE may result in the initiation of revocation proceedings.

The cyber charter school will have safeguard protocols in place to guard against unauthorized access to student electronic records. Cyber charter schools will have the capability to provide written copies of student records when requested and approved by the parent or student. Student records will be maintained in accordance with FERPA and state regulations and a secured backup system will be in place.

See the Charter School BEC, 24 P.S. §17-1701-A.

Facilities Access
Cyber charter school offices and education centers shall be available for PDE staff to visit any time the school is in operation and interacting with students. Refusal of a cyber charter school to allow PDE access to any facility may result in the initiation of revocation proceedings.

*Parent Complaint Procedure*

The Pennsylvania Department of Education is responsible for the intake, investigation and resolution of complaints concerning students enrolled in cyber charter schools. When possible, the complaint should be in writing and sent to the Division of Nonpublic, Private, and Charter School Services. After receiving the complaint, the Department will determine if it merits referral to an existing complaint procedure (e.g., special education, professional employee misconduct).

If the complaint cannot be referred under existing procedures, then the redacted, written complaint (or paraphrased oral complaint), will be forwarded to the cyber charter school for a response. The cyber charter school will have ten business days to issue a written response. After receipt of the cyber charter school response, the Department will determine if the complaint is resolved, or if further investigation is required.

4. **Accountability**

*The Pennsylvania Accountability System that applies to all public schools in the Commonwealth can be found at the following web link:*

School districts and cyber charter schools are encouraged to work cooperatively to accommodate students’ needs in mandated testing. Section 1744-A (2) states an intermediate unit or a school district shall provide the cyber charter school with reasonable access to its facilities for the administration of standardized tests required under this subdivision.

See the Charter School BEC, 24 P.S. §17-1701-A.

*Strategic Planning and School Improvement*

See the Charter School BEC, 24 P.S. §17-1701-A.

5. **Renewals or Closure of Cyber Charter School**

*Renewal Procedures*

A cyber charter school seeking renewal of its charter must complete a renewal application and submit it to PDE between July 1 and October 1 of the final year of its current charter. PDE will begin the renewal process by reviewing the renewal application and previously submitted Annual Reports.

During its review of the renewal application and the Annual Reports, PDE may determine that it needs additional information from the cyber renewal applicant or that corrections
are needed in certain areas in order for PDE to renew the charter. In such cases, PDE will notify the applicant as soon as possible about the needed information or corrections and provide a time period by which such information or corrections should be submitted to PDE. PDE will then make a timely decision regarding the renewal or non-renewal of the charter.

Nonrenewal

See the Charter School BEC, 24 P.S. §17-1701-A.

Immediate Revocation

See the Charter School BEC, 24 P.S. §17-1701-A.

PDE also has the authority to immediately revoke the charter of a cyber charter school if:

1. a material component of the student’s education as required under subdivision (c) of the Charter School Law is not being provided; or
2. the cyber charter school has failed to maintain the financial ability to provide services required under subdivision (c) of the Charter School Law. 24 P.S. §17-1741-A (3)(ii).

Revocation or Closure

Immediately upon revocation of the charter or decision to close the cyber charter school, the Board of Trustees shall, by Board resolution, authorize the person who will be responsible for concluding the affairs of the cyber charter school and provide to the Department of Education, Bureau of Community and Student Services, Division of Nonpublic, Private and Charter School Services, a copy of this Board resolution and the name, address, phone number, fax number and email address of this person.

6. Attendance Issues

Enrollment

See the Charter School BEC, 24 P.S. §17-1701-A.

A cyber charter school shall report to the Department an increase or a decrease of 30% or more in its anticipated enrollment set forth in the application under Section 1747-A(11)

Residency

The Charter School Law defines a student’s school district of residence as the school district in this Commonwealth in which the parents or guardians of a child reside. 24 P.S. §171703-A. Section 1302 of the Public School Code, which is applicable to cyber charter schools, provides that a child shall be considered a resident of the school district in which his or her parent(s) or guardian resides. 24 P.S. §13-1302(a).
In interpreting Section 1302, the Pennsylvania Supreme Court defined residence as "a factual place of abode evidenced by a person’s physical presence in a particular place." In Re: Residence Hearing Before the Board of School Directors, 744 A.2d 1272 (Pa. 2000). Therefore, the school district of residence of a student attending a cyber charter school is the school district in the Commonwealth where the student’s parents or guardians have a factual place of abode evidenced by their physical presence at that particular place.

See 22 Pa. Code §11.11 if parents reside in different school districts due to separation, divorce or other reasons.

Kindergarten

See the Charter School BEC, 24 P.S. §17-1701-A.

Compulsory Attendance

See the Charter School BEC, 24 P.S. §17-1701-A.

Students Institutionalized from a Charter School

See the Charter School BEC, 24 P.S. §17-1701-A.

Expelled or Suspended Students

See the Charter School BEC, 24 P.S. §17-1701-A.

7. Discipline

Weapons Possession

See the Charter School BEC, 24 P.S. §17-1701-A.

Discipline Policies

See the Charter School BEC, 24 P.S. §17-1701-A.

Due Process

See the Charter School BEC, 24 P.S. §17-1701-A.

8. Transportation

Cyber charter school students are not required to attend a specific facility to receive their educational services, therefore, the Charter School Law does not require that a student’s school district of residence provide transportation for cyber charter school students. Should transportation be required as a related service in the IEP of a student with
disabilities, who is enrolled in a cyber charter school, the cyber charter school must provide the required transportation.

9. Extracurricular Activities

See the Charter School BEC, 24 P.S. §17-1701-A.

Students who are enrolled in a cyber charter school are eligible to participate in a school district of residence sponsored extracurricular activity if the student is able to fulfill the requirements of participation and the cyber charter school does not provide the same extracurricular activity.

Cyber Charter Schools and School Districts are encouraged to communicate the requirements for participation in extracurricular activities that may include, but not be limited to, specific grades and attendance of the student. To release this information to a school district, it must first receive parent permission.

10. Payments to Charter Schools

See the Charter School BEC, 24 P.S. §17-1701-A.

11. Master Agreement and Major Grant Programs

See the Charter School BEC, 24 P.S. §17-1701-A.

12. Facilities

See the Charter School BEC, 24 P.S. §17-1701-A.

The resident school district and/or IU must provide the cyber charter school with reasonable access to the school district and/or IU facilities for the administration of standardized tests required under subdivision (c) of the Charter School Law. 24 P.S. §17-1744-A (2).

13. Highly Qualified and Certification of Charter School Teachers

Charter School-Highly Qualified Teacher Requirements (PDF)

See the Charter School BEC, 24 P.S. §17-1701-A.

14. Health Care Benefits

See the Charter School BEC, 24 P.S. §17-1701-A.

The local district referenced in Section 1724-A shall be determined as the location of the cyber charter school’s administrative office.
15. Special Education

See the Charter School BEC, 24 P.S. §17-1701-A with the following addition.

The Charter School Law ("CSL") requires that, upon request, assistance must be provided to charter schools and cyber charter schools to address the needs of students with disabilities. Because there has been confusion about what “assistance” the CSL requires to be provided to students with disabilities enrolled in a charter school or a cyber charter school, the Department’s position on this issue is stated below.

The CSL requires the Intermediate Unit ("IU") in which a charter school is located to provide the charter school, upon request, with "services to assist the charter school to address the specific needs of exceptional students.” However, for cyber charter schools, the CSL requires that upon request, the IU or school district in which a student resides must “provide assistance, to the cyber charter school in the delivery of services to a student with disabilities.” In either case, an IU or school district may not charge a charter school or a cyber charter school more for such services than they charge school district.

The Department’s interpretation of the “assistance” required by the CSL is that an IU or a school district is generally not required to provide direct services to charter school or cyber charter school students with disabilities. However, at a minimum and upon request, assistance must be provided to help a charter school or a cyber charter school locate providers who could provide services necessary to address the needs of their students with disabilities. This would include providing the names of providers, contact information, etc.

The goal of all segments of the educational community should be to ensure that all students receive appropriate educational services. Thus, the Department expects and encourages school districts, IUs and cyber charter schools to work together to ensure that appropriate educational services are provided to all students with disabilities.

16. Charter Schools and Career and Technical Education

See the Charter School BEC, 24 P.S. §17-1701-A.

17. School Health Services

Cyber Charter Schools must provide health services to all students as described under School Health Services, Article XIV of the PA Public School Code.

18. Providing College Courses

Charter schools may contract with post-secondary educational institutions to provide course work as part of their curriculum. However, charter schools may only grant their students high school credit for such courses, and may not award post-secondary credit for those courses.
REFERENCES:

Purdon’s Statues

24 P.S. §17-1701-A to §17-1751-A

Other

West Chester Area School District v. Collegium Charter School, 571 Pa. 503, 812 A.2d 1172 (2002);


Listing of Cyber Charter Schools: click on Charter Schools link, scroll down and click on Cyber Charter Schools List.

BUREAU/OFFICE CONTACT:

Charter Schools Office |
Pennsylvania Department of Education
333 Market Street, 10th Floor | Harrisburg, PA 17126-0333
Phone: 717.787.9744 | Fax: 717.787.7222
charterschools@pa.gov

Note. The source of this document is
Appendix B: Comparison Between Sample and Statewide Data

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<th>Total students</th>
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<th>Individualized education program students</th>
<th>Total free and reduced lunch students</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2,564 1,449,824</td>
<td>5.13 2,899.65</td>
<td>2.20%</td>
</tr>
<tr>
<td><strong>Limitation</strong></td>
<td>31,886 247,483</td>
<td>63.77 494.97</td>
<td>17.07%</td>
</tr>
<tr>
<td><strong>Total free and reduced lunch</strong></td>
<td>494,818 114,765</td>
<td>989.64 229.53</td>
<td>34.13%</td>
</tr>
<tr>
<td><strong>Hispanic students</strong></td>
<td>119,191 1,143,626</td>
<td>238.38 2,287.25</td>
<td>7.92%</td>
</tr>
<tr>
<td><strong>Black students</strong></td>
<td></td>
<td></td>
<td>8.22%</td>
</tr>
<tr>
<td><strong>White students</strong></td>
<td></td>
<td></td>
<td>78.88%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Urban districts</th>
<th>Suburban districts</th>
<th>Rural districts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total in sample</strong></td>
<td>6</td>
<td>104</td>
<td>107</td>
</tr>
<tr>
<td><strong>Percent of sample</strong></td>
<td>2.76%</td>
<td>47.93%</td>
<td>49.31%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Population (Pennsylvania) totals</th>
<th>Total in sample</th>
<th>Average per district</th>
<th>Percent of population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20</td>
<td>235</td>
<td>245</td>
</tr>
<tr>
<td><strong>Limitation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total free and reduced lunch</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hispanic students</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Black students</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>White students</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Percent of population</strong></td>
<td>4.00%</td>
<td>47.00%</td>
<td>49.00%</td>
</tr>
</tbody>
</table>
Appendix C: E-mail and Follow-Up Examples

First e-mail; realized answers were not consistent

Hello,

My name is Bryan Mann. I am a former teacher and now PhD student in the Education Policy Studies Department at Penn State. For my dissertation I am examining trends about school districts’ use of online learning in Pennsylvania, so I am contacting several individuals across many districts (enough to generate a representative sample) to find a few pieces of information. I have reached out to you because you might be able to answer my questions, which are:

NOT including cyber charter schools, do students in your district have access to web-based online courses? If so, what year did this access start? At the starting point, who provided the online learning (e.g. self-provided, the IU provided it for us, our district used an outside contractor, other)?

A sample reply email answer could simply be (you are welcome to expand if you would like):

Yes, 2008, self-provided
Or
No, online learning is not available in our district outside of cyber charter schools.
Or
Yes, 2004, IU provided it for us

Please note, you may have received an earlier email about this topic. If so, my apologies for the redundancy but please still respond because the purpose of this email is to double-check my data (and add missing data as well).
I will not use the name of you or your school district in the reporting of this information (the study seeks to understand statewide trends). Thank you for your time and please let me know if you have any questions. For more information about the project free to look at http://b-mann.com/my-dissertation-study.

Second e-mail attempt when first e-mails resulted in inconsistent answers

Hello,

My name is Bryan Mann and I am conducting my dissertation at Penn State University about online courses in Pennsylvania public schools. One of the tasks of the project is to conduct a statewide timeline of full time online learning in PA.
For this I am asking districts to help me. I will not use the name of the district in my data reporting, but I am looking to tally how many districts started offering online courses per year across the state. If you could please help me by answering a few questions (or directing me to someone who does know the answers), it would be great:
Not including cyber charter schools, does your district offer full time online course options (they can take all their coursework from home) to students?

If so, when, exactly, was the first school year the full time courses were offered to students?

Please keep in mind I am making a timeline with total percentages, so exact dates as well as “we do not offer any full time online learning” are both very important to the study!

Follow-up to ensure accuracy

Hello,

This is Bryan Mann the PhD student writing a dissertation about online learning trends in PA. I am following up with all of my sources to double-check that my data is accurate. In your previous email you said you first started providing online learning in 2011.

So as a follow-up, would it be accurate to say the exact first year cyber schooling for your students (ie. the “district equivalent” of a cyber charter school) was 2011 and no other attempt was made at cyber schooling prior to this? Would it also be accurate to say that a student can attend this cyber program fulltime in order to get a diploma from your school?

Please keep in mind exact years are important for my analysis. So if this year is not exact please verify. If my information is correct, please reply “yes” and if it is not please correct me in my information. Keep in mind I will not use your name or the name of your school district in reporting this data. Your input is a huge help. Thanks!
VITA

Bryan Mann

EDUCATION

2016  Doctor of Philosophy in Educational Theory and Policy
      College of Education, Penn State University

2015  Online Teaching Certificate
      World Campus, Penn State University

2009  Teaching Certification: Secondary English Education with Special Education
      Graduate School of Education, Georgian Court University

2007  Bachelor of Arts in Journalism with English Literature Specialization
      Philip Merrill College of Journalism, University of Maryland

PROFESSIONAL EXPERIENCE

2014–present  Managing Editor
               American Journal of Education, State College, PA

Summer 2015  Instructor, EDTHP 115: Education & American Society (In-Residence & Online)
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Fall 2014  Teaching Assistant, EDTHP 533: Social History and Educational Policy
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            Communications High School, Wall, NJ

PEER-REVIEWED PUBLICATIONS


