

Innovation: A Disposition, Not a Destination

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ABOUT THE AUTHORS

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EXECUTIVE SUMMARY

The National Association of Independent Schools (NAIS) is committed to providing its member schools with the data, tools and resources in order help them maintain their value proposition in their various markets. An area of specific focus is innovation in schools and how independent schools can broadcast themselves as innovators and increase their enrollments. One such resource is the Strategy Lab at NAIS. More specifically, the Strategy Lab has helped its participants grapple with innovative solutions in their schools through problem solving cycles and routines.

Innovation in schools is a continuously moving target. Independent schools pride themselves on being able to focus on this moving target with consistency and accuracy. However, schools—and independent schools in particular—struggle with maintaining innovative practices over time. The research presented here aims to determine the habits, norms, and dispositions of school cultures that foster innovative practices.

This study explores member schools of the NAIS: both participants and non-participants in its Strategy Lab. We examine the perceptions of innovation of both administrators and faculty members at schools. Through quantitative survey analysis and qualitative interview review, we assess the cultural elements of innovative schools. Our research suggests that when a school has a positive culture, there is a relationship to its commitment to innovation. Innovation in schools is not isolated from other elements; instead, it is cultural, curriculum-driven, and relies on community. Specifically, the data in this study points to a strong relationship between school cultures rooted in flexibility, trust, and congeniality with schools that self-identify as being innovative and confident in their ability to adapt to or promote curricular change.

As a result of these findings, we propose a set of recommendations that aim to assist both NAIS and school leaders in their pursuit of innovative practices and positive school cultures. In particular, we recommend that NAIS adopt a more specific definition of innovation and tailor its problem-solving practices more closely to the unique cultural needs of an individual school. We also recommend that school leaders focus on communication, scheduling support for collaboration, and intentional professional development. Because innovation is driven by faculty, we propose strategies to engage faculty voices and build trust and time for these ideas to be shared and developed. It is our hope that this study helps member schools build the habits of mind to continue to remain adaptive and relevant in the ever-changing landscape of education.

INTRODUCTION

As tuition-driven schools of choice, independent schools must differentiate themselves from other institutions in order to ensure their survival. Just as companies innovate in order to satisfy customer needs and separate themselves from competition (Rafi, 2020), independent schools must also pursue innovation in order to retain students, staff, and revenue. While tradition is important in many schools serving multiple generations of students and alumni, innovation is what carries schools forward to adjust to needs of students and communities among current educational needs and trends. As one independent school leader put it, innovation “inoculates a school from becoming irrelevant. [...] Only by being relevant can a school be excellent. And only by being excellent can it be sustainable” (Baker, 2017).

The National Association of Independent Schools (NAIS), a nonprofit association of independent schools in the United States and abroad, aims to support its member schools in developing innovative practices. As part of this effort, the NAIS appointed its first Chief Innovation Officer in 2016 (Pinkus, 2017). Since then, the NAIS Innovation Team has expanded to include additional staff members and has worked to provide a variety of resources for schools regarding innovative practices including conferences, workshops, data analysis support, and written guidance. One of the most recent initiatives, the Strategy Lab, launched in 2019. Schools who participate in the Strategy Lab identify a particular project or problem in their context, and the NAIS Innovation Team guides them through a process of rapid prototyping and small-scale testing to develop an innovative solution.

The Innovation Team is now interested in moving beyond the highly-focused consultations of the Strategy Lab to learn about the broader contexts that support innovation in an independent school environment. They sought to learn what kind of culture is needed in an independent school to make new ideas thrive. While innovation can manifest differently in various settings, in this Capstone project, we aimed to identify innovation as a set of mindsets particular to independent schools. For our purposes, innovation is a school’s ability to accurately identify a problem and ideate relevant solutions that include the investment of multiple stakeholders to ensure long-lasting success (Rogers, 2003; Chen, 2010; Genlott et. al 2018). In partnership with the NAIS, we engaged in a quantitative and qualitative analysis of the landscape of innovation and culture in independent schools. This information will inform the Strategy Lab and will also open doors for other initiatives to more effectively support member schools.

ORGANIZATIONAL CONTEXT

Client

The National Association of Independent Schools is a non-profit association whose members include over 1,800 independent K-12 schools. Altogether, NAIS schools serve a total of over 700,000 students with more than 57,600 teachers. The NAIS mission is “uniting and empowering” the independent school community through “thought leadership, research, creation and curation of resources, and direct collaboration with education leaders” (NAIS, 2019). The NAIS supports member schools by providing assistance with data collection and trend analysis as well as information and guidance on a variety of topics that are relevant for independent schools. It assists regional associations of independent schools in developing accreditation standards and processes. Finally, it hosts a variety of professional development and networking opportunities, including conferences, workshops, and institutes for teachers, administrators, and board members. Since 2019, the Strategy Lab at NAIS was created to help independent schools make “strategic progress”. Currently it has served 60 schools in their pursuit of strategic and innovative growth.

Stakeholders

The stakeholders for this project expand outward as the NAIS organization reaches member schools. The client, NAIS itself as an independent school organization, is one of the largest stakeholders. NAIS relies on trusting and strong relationships with member schools in order to continue to build upon and develop the value of independent schools across the country and abroad. The services NAIS provides to member schools cover a variety of areas of interest to independent schools, including financial services, enrollment strategies, scheduling viewpoints, hiring best practices, curriculum mapping, and more. Because of the confidence member schools place in NAIS, it is important that NAIS is responsive to needs of schools, including the need to become adaptive and innovative in the current atmosphere.

In addition to the NAIS organization as a whole, leadership at individual member schools such as Heads of School and Division Heads are stakeholders as well. School leadership likely works as initiators in asking the NAIS for information and strategies in order to become more innovative. Independent schools are continually evaluating their own academic, social, service, and athletic programs in order to meet community needs and enrollment goals, all under the umbrella of advice and guidance from NAIS as requested. Becoming adaptive and innovative is necessary for many independent schools to remain

relevant through tuition revenue and fundraising. Independent school leadership includes the Head of School, division heads, other program leaders, and the Board of Trust.

Finally, changes that leaders at school implement will no doubt have an effect on teachers, families, and students at schools. Without faculty, schools are inoperable. Many prior studies completed with the NAIS focus heavily on Heads of School and leadership teams. Understanding the classroom aspect of innovation is important to understanding how all stakeholders work together when seeking change at an independent school. Because independent schools are dependent on student tuition as a major source of revenue, filling admissions goals is vital for the survival of independent schools. Student and parent perspectives and influence on the school's operations--and changes that are made in some environments that may value traditions--cannot be undervalued in the process.

LITERATURE REVIEW

As businesses that operate in a market-based, tuition-driven system, independent schools must differentiate themselves from other institutions in order to ensure their survival. For this reason, innovation plays a critical role in independent schools' desire to maintain high enrollment, strong academics, and a commitment to the individual school's mission. As one independent school leader put it, innovation prevents a school from losing its footing in an educational market, and schools need relevancy and excellence in order to be sustainable (Baker, 2017). Successful innovation is no easy task, however. It is highly complex, requiring a willingness to take risks and a commitment to a deep understanding of both school systems and constituent family needs (Fish & Wolking, 2019). The task, then, is for schools to create cultures that foster these characteristics of innovation in order to allow new ideas to take root and thrive. Without a viable school culture for innovation, independent schools' survival in the market system is threatened.

To understand this topic, we review the literature on workplace innovation. There is considerable research on innovation in business and industry, which has identified a number of organizational characteristics that promote innovation. The research exploring the application of these concepts in the school setting is relatively limited, though. Because independent schools are both educational settings and tuition-driven businesses, we approach this topic from both the school culture lens as well as the business innovation lens. We turn to the literature on school culture to bolster claims from the non-educational settings. Prior research in this field has identified a host of benefits associated with a positive, collaborative school culture, including successful improvement efforts, which suggests that relational culture plays a key role in innovation. The present study thus seeks

to bridge these two domains, investigating the intersection between school culture and innovation in independent schools.

Innovation in Workplaces

Most organizations might state that innovation is important for their economic growth and vitality, given the ever-changing labor market and need for competition. The mere acknowledgement of the value of innovation, however, is not enough to make it a consistent value in boardrooms and company meetings. Innovation, like other aspects of a workplace culture, must be intentionally cultivated and developed over time. Some scholars describe the process of innovation as including three distinct phases: an invention, development of a prototype or model, and implementation of an idea that solves a particular problem facing an organization (Thurlings, Evers, & Vermeulen, 2015). How innovation cycles occur and what types of workplaces foster the necessary ideation for innovation are worth examination, as these could translate into school contexts. As far as non-educational industries are concerned, corporations that are innovative support a culture of innovation by providing *a quality workplace, an allowance for a diverse range of perspectives, and a high tolerance for failure* (Chen, 2016; Amabile, 1998; Usher, 2013; Tian & Wang, 2011).

One model of innovation pertains to the mechanical industry (Usher, 2013). Distilling over 100 years of data and research, the author synthesizes that innovation is not just the role of individuals in the process but also the culture in which the work is produced. By giving credit to the collective culture surrounding innovation, Usher's work highlights the importance of the contributions of an environment that promote innovation, which might be overlooked when companies are pushing for the newest or most creative solution at an individual level. This also corroborates hypotheses that innovation is determined by the culture of the workplace (Ruttan & Hayami, 1994) more than simply the collective strength of individuals working on a new product.

Additionally, innovation in workplaces includes adjusting the environment and recognizing that employee experiences are related to work production. The concentration on creating a high-quality workplace puts the health and wellbeing of employees at the forefront of a company's culture which results in higher job satisfaction, stronger relationships between employees, and increased trust in management (Chen, 2016). This cultural construct lays the groundwork for the ability to creatively approach problems and limit the fear of failure. By building a foundation of trust and job satisfaction, leaders can better prepare the path for innovation at work.

One way a workplace exhibits creative thinking is when it approaches or solves a problem by putting existing ideas together in new combinations. In her work, Amabile (1998) asserts that in order to incubate this culture, organizations should have mutually supportive groups with a diversity of perspectives or backgrounds. These groups should be

specifically orchestrated by managers who “deeply understand the people in their organization” (Amabile, 1998, p.4) This deep understanding and knowledge of people in the organization reinforce positive workplace environments and promote the repeated “cycles of divergent and convergent phases of ideas” (Garud, Tuertscher, & Van De VenGarud, 2003, p.781). Despite her work’s focus on non-educational settings, Amabile’s research is applicable to school culture because relationships are paramount to school effectiveness. Leaders in educational contexts have ample opportunities to understand the people within their organizations; through creating a positive workplace environment including diverse perspectives, leaders promote these cycles of ideas. By building teams intentionally with varied backgrounds, strong communication, and time set aside to work together, workplaces can promote a culture that fosters diversity of ideas and perspectives. In order to have this diverse range of perspectives, the variety of voices needs to be present, supported, and encouraged.

Typically, innovation activities, such as the sharing of ideas in a heterogeneous group, involve a high risk of failure. However, while intimidating, a greater tolerance for failure helps to promote innovation (Tian & Wang, 2011). Consistent with this are corporations that are able to rebound during times of economic distress when the risk of failure is even greater (Bloom, 2014). Corporations have been able to demonstrate their commitment to risk taking by encouraging these long-term innovations without threatening employees with potential termination (Chen, 2016). In other words, a culture that promotes healthy risk-taking and tolerance for failure is one wherein employees may be better poised to help companies during turbulent times.

Innovation in workplaces is reliant on the three spokes as described above: *a quality workplace, an allowance for a diverse range of perspectives, and a high tolerance for failure.* In order for innovations to last longer than the latest trend, workplaces should be fertile ground for the seeds to grow roots. Rogers’s (2003) theory of the diffusion of innovation provides one of the most comprehensive analyses of how innovations take hold. According to Rogers, an innovation is an idea, practice or object that is perceived as new by an individual or other unit of adoption; his framework identifies a number of organizational characteristics linked to increased levels of innovation: centrality, complexity, formalization, interconnectedness, system openness, organizational slack, and size. Looking at workplace culture, centrality and complexity both fall under this umbrella. Centrality refers to an organization’s governance structure and the extent to which leadership is shared, while complexity is the level of expertise possessed by members of an organization. In terms of adaptability, formalization is the extent to which members or leaders in the organization emphasize the need to follow specific rules and protocols. If the organization stresses formalization, workers may not have the psychological support to feel they can creatively respond to new circumstances or problems. Relatedly, tolerance for failure includes the important area of organizational slack: the number of available

resources (uncommitted) to use towards the innovation - time, money, or other. In total, the larger the organization's size, the more innovative they tend to be, according to Rogers (2003). Rogers's framework allows for more specificity within the three spokes of culture, adaptability and tolerance for diversity of ideas, and tolerance for failure. However, this framework has not been applied to educational settings.

Innovation in Schools

Compared to other workplaces, the need for creative thinking, flexibility, and tolerance of new ideas has been less-frequently studied in schools. Lubienski (2003) found that innovation as a practice of change is unique to each context. Even though charter schools had opportunities to be innovative as largely independent school structures, they did not pursue innovation; instead, they relied on more tried-and-true pedagogical methods for student achievement and involvement. When given the opportunity, these schools were reluctant to use the latitude available to them and instead fell back on more traditional approaches to instruction and organizational structure.

Indeed, declaring a school's mission or vision as innovative may encourage school choice among families looking to make a change (Lubienski, 2003). If the prior environment was insufficient for some reason, perhaps a school touting innovation will meet needs or fill gaps that were previously unattended. By having a smaller, more focused leadership team, as is often the case in many charter schools, educational environments are more likely to be able to shape the school day, the instructional practices, and the community involvement in such a way that is responsive to the particular school's community. Additionally, market factors that influence the school choice argument claim that public bureaucracies are less likely or unable to innovate, and so the competition provided in other markets provides incentives for innovation (Lubienski, 2003). However, the type of school that typically has the most freedom to innovate--charter schools--may find that even though parents state an interest in innovation, in practice they prefer to have their own children at schools where opportunities for innovation are limited in favor of more traditional pedagogical approaches, as decided by the market and other competition factors (Lubienski, 2003; Preston et al., 2012).

On a smaller scale, teachers who seek innovation on a school campus are often those who have identified a problem, developed ideas or prototypes to solve it, and worked to create a solution that benefits the organization as a whole (Thurlings, Evers, & Vermeulen, 2015). Teachers in these instances are likely in environments where psychological safety is strong enough to experiment, fail, and learn from mistakes; psychological safety includes feeling a stronger sense of safety for mistake-sharing (Edmondson, 1999). Innovative work depends on trust, communication, and a feeling of importance in the larger organization.

School Culture as Workplace Culture

A workplace's culture is worthy of examination because it provides fertile ground for changes such as innovation to thrive or decay (Amabile, 1998; Chen, 2016). School culture is defined as "the system of basic assumptions, norms and values, as well as the cultural artifacts, which are shared by school members and influence their functioning at school" (Maslowski, 2006, p.9). Through combined efforts, researchers identified several key dimensions of school culture. These include professional orientation (e.g., professional development, collaboration between educators), organizational structure (leadership, mission and goals, policies, communication), quality of the learning environment (academic press), and student-centered focus (caring for and nurturing students) (Schoen & Teddlie, 2008).

Researchers have also identified a variety of benefits associated with a strong, positive school culture. In effective schools, the school culture promotes a shared understanding about the roles and responsibilities of teachers and students (Jerald, 2006). This type of culture is associated with improved productivity, greater collaboration among staff, better communication and problem solving, increased student and teacher motivation and commitment to the school, and a greater focus on shared values (Deal & Peterson, 1999). School culture also plays an important role in school improvement, so much so that Fullan (2001) has suggested that "reculturing" should be seen as a key component of lasting change efforts. Researchers who have worked to develop reculturing processes point to collaboration as one of the most critical elements. Indicators of professional collaboration - such as joint problem solving, data sharing and analysis, shared decision making, and distributed leadership - are associated with higher levels of trust, respect, and professional satisfaction, improved instructional practices, better student outcomes, and change that is sustained over time (Waldron & McLeskey, 2010).

This poses a challenge for many schools, which have long persisted in the "egg crate school" model, originally coined in the 1970s (Lortie, 1975; Tyack 1974). Separated into classrooms along a shared corridor, teachers work in isolation, even though they may see the same students during the school day. In this common model, teachers are compartmentalized and have few incentives to share resources, much to the detriment of a school's culture. Teachers value their independence, but this reliance on autonomy can lead to some feeling isolated (Little, 1990), further corroding the important aspect of culture necessary for innovation. Indeed, social capital theory supports the idea that by increasing interaction, teachers may increase overall effectiveness and student experience (Johnson, 2015), which could be hard to find in an egg crate school. Unsurprisingly, school culture is in many ways defined by the relationships between teachers within the school context.

An important dimension related to teachers' experience of school culture is self-efficacy within the classroom and the wider school as whole. Self-efficacy motivates

teachers in their classroom instructional practices (Bandura, 1997; Tschannen-Moran, Hoy, & Hoy, 1998); by increasing interdependencies and sharing information, the surrounding environment can become a less-isolated, more collaborative culture (Little, 1990), leading to greater teacher satisfaction with the environment and culture. In order for school culture to improve, strengthening relationships both among teachers themselves and between teachers and administrators is necessary (Roby, 2011); this could be achieved by involving teachers as teacher-leaders, either formally or informally, to increase teachers' commitment and satisfaction, ultimately improving school culture (Berg, 2018). While school culture has been heavily studied, less is known in regard to schools' tolerance for failure or ability to adapt as is related to the importance of relationships in a school's culture.

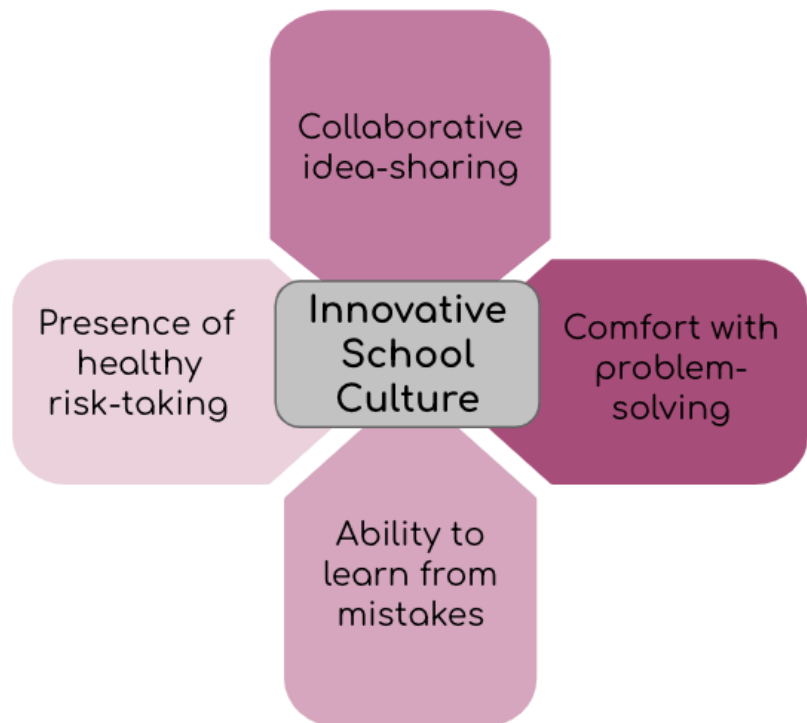
Of course, schools do not exist solely as individual teachers acting on their own. Schools, like other organizations, are driven by administrative leaders such as principals, superintendents, and curriculum specialists. Strong leadership is not limited to mission statements and well-organized meetings; instead, effective leadership includes emotional intelligence skills including self-awareness, self-regulation, motivation, empathy, and social skill (Goleman, 1998). Furthermore, leadership must be flexible enough to react appropriately to a given situation and audience. Studies have shown that effective leadership has a measurable effect on climate (Goleman, 2000). It is no surprise that when employees feel valued and part of a team, their work improves, they are more likely to stay at the company, and the culture overall is strengthened as employees cite relating to others well (Goleman, 1998). In order to address innovation in schools, leaders' emotional intelligence cannot be disregarded as it has an impact on climate (Goleman, 2000).

One method of promoting innovation through school culture is through the improvement process. For school improvement, the research makes clear that a focus on values-based, vision-oriented decision-making (Jerald, 2006) and distributed leadership that honors teachers' unique contributions (Waldron & McLeskey, 2010) are highly influential. Thus, for schools seeking to adopt more innovative practices, examining their culture is one area of necessity. This idea finds support in case studies of schools that have implemented successful innovations, which suggest that collaborative leadership, teacher empowerment, and an environment of collegiality are instrumental to the innovation process (Simpson, 1990). Interestingly, Fullan (2000) contends that, although schools with collaborative cultures do not implement the largest number of newest practices, they do choose innovations that are more closely aligned with their established goals, which may produce greater long-term success. Despite these findings, the research on the intersection between school culture and innovation remains relatively limited.

Area of Inquiry

The importance of workplace culture in creating spaces for employees to share ideas freely has been well-documented in the literature. Of importance is the ability to exchange ideas, understand employee motivation, encourage problem-solving behaviors and risk-taking, and display support for all employees. While innovation itself is a complex system of idea-sharing and ideation, workplace culture is more straightforward in its role of promoting the values that lead to innovative practices.

While school innovation is less well-studied, many of the same constructs found in workplaces are found in schools. School cultures that promote collaborative idea sharing, risk-taking, problem-solving, and a healthy ability to learn from mistakes may well be those that also encourage innovation. While this is a logical extension of the research into workplace innovation, the gap still exists between the two areas of the literature. Unlike most workplaces, schools do not simply deal with stable inputs in order to examine a logical output. There is not a plain formula for schools to follow in order to measure quarterly sales progress or customer satisfaction. Instead, schools are constantly adjusting for the demands of adolescents, families, and the impacts of current events in order to offer educational experiences that are enriching, motivating, and supportive of students' short- and long-term goals. Because of this, examining innovation in schools requires a nuanced look into the systems in play within schools, including leadership, teachers' experiences, and overall school culture. In this study, we aim to develop an understanding of this connection between innovation and school culture in the independent school setting, where innovation can play such a critical role.

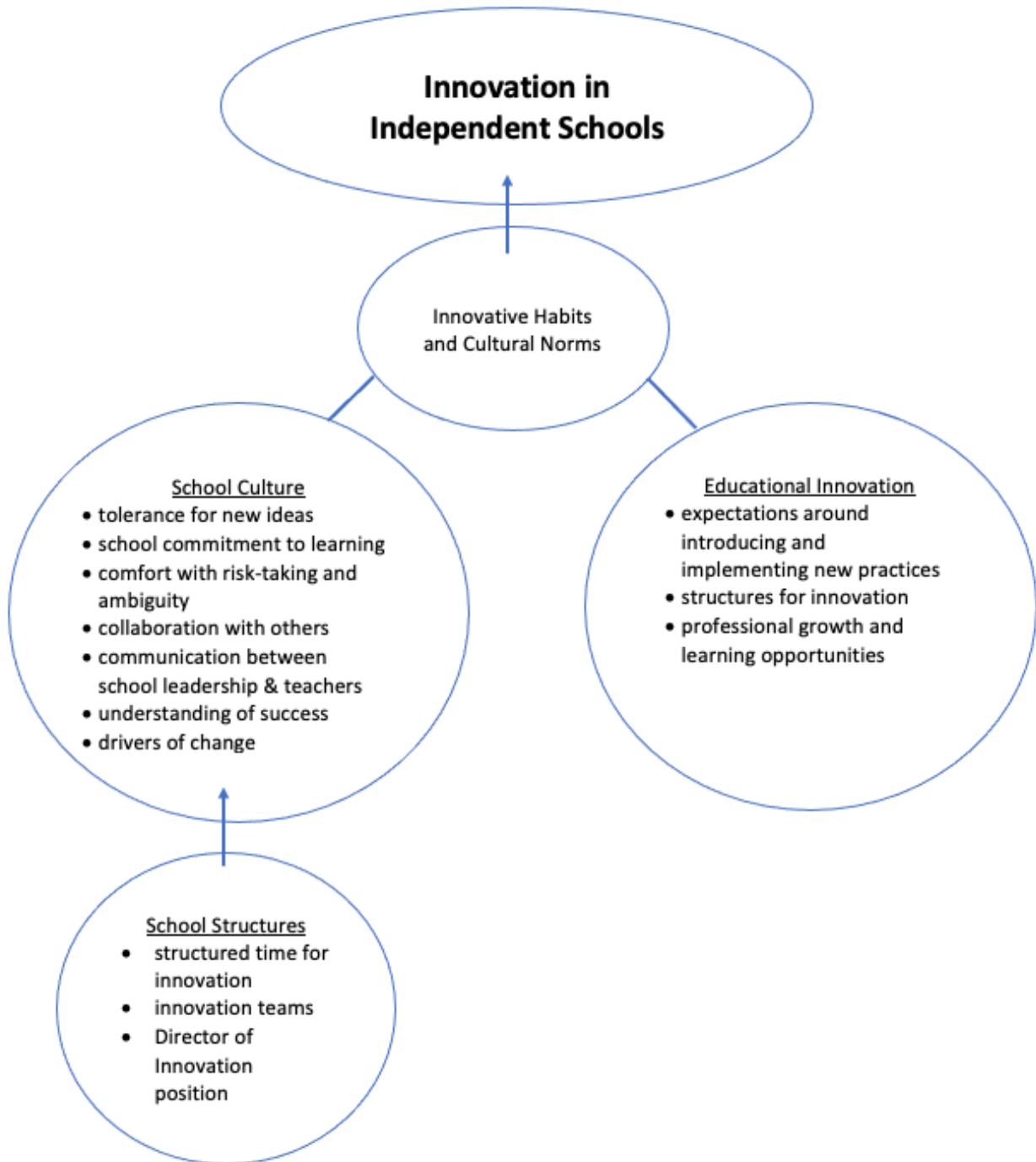


CONCEPTUAL FRAMEWORK

Based on the available literature about innovation as well as research into school culture, it is clear that the attitudes and practices on a school campus relate to the degree to which individuals feel they can pursue innovation. In order to understand this relationship, we were interested in exploring the degree to which attitudes and beliefs, our independent variable, have on innovative practices on a campus, our dependent variable. Attitudes and beliefs include shared values and understandings of role and mission, adaptability, tolerance for failure and risk-taking, psychological safety and trust, leadership's ability to allow for change and empathy, and collaboration (Tian & Wang, 2011; Rogers, 2003; Edmondson, 1999; Maslowski, 2006; Jerald, 2006; Goleman, 2000; Waldron & McLeskey, 2010).

Considering the themes that have emerged from prior research and available literature, we have identified main subgroups of the focus of our work: definitions of innovation, structures and practices of innovation, and measures of school culture. Our conceptual framework model aims to determine the extent to which various identified attitudes impact the level of innovation found on independent school campuses. Because we are interested in school-based innovation, we have also considered the possible impact of school structures such as scheduling, teams, and the Director of Innovation position as an influencer for school culture.

This conceptual framework operates under the central question derived from our theoretical framework, developed from the client needs and literature review: *What are the school habits or cultural norms that promote innovation?* Using both qualitative data from semi-structured interviews and quantitative survey data, we hope to be able to capture specific school-related elements of culture and behaviors that make a school campus ready for innovation.



RESEARCH QUESTIONS

The primary goal of this project was to understand more about the cultural characteristics that foster innovation in schools, specifically:

- *In schools with more innovative practices, what habits or cultural norms are present?*

A secondary aim was to learn more about who makes innovation happen in independent schools, guided by the following questions:

- *What is the makeup of a team that makes innovation happen?*
- *Who drives innovation?*

We forecast that those schools and leaders that embraced the habits of innovation as defined by Rogers's organizational framework would have more positive school cultures, marked by higher values placed on qualities such as respect, collegiality, experimentation, and open communication. Furthermore, we hypothesized that these schools would empower teachers as agents of change, allowing them to drive innovation. However, we also anticipated that administrators would play an important role, particularly those who are specifically tasked with innovation work. In sum, we predicted that, if a culture inculcates certain habits of mind, then teachers will feel supported and encouraged to innovate.

METHODS

Design

This study utilized a mixed methods approach to survey the landscape of innovation in independent schools. Guided by Perrin's (2002) recommendations that studies of innovation should adopt a "best practices" approach, we sought to draw on cases in which innovation is most successful, and to integrate quantitative and qualitative information. To that end, the study took place in three phases. In Phase I, we gathered qualitative data from school leaders in order to further refine our definition of innovation and inform key areas of inquiry for subsequent phases. The qualitative data gathered in this phase thus served in a development role (Greene, 1989). In Phase II, informed by the results of the previous phase, we gathered quantitative data to provide a macro view of innovation in NAIS member schools. In this phase, we aimed to learn more about the overall landscape of school culture and innovation in independent schools, as well as the relationship between these two constructs. Finally, in Phase III, we took a micro view of select schools that stood out for their innovative practices. Through qualitative interviews with teachers and school

leaders, we pursued a deeper understanding of the team dynamics that promote innovation. This phase took a complementarity approach, helping to clarify and enhance the quantitative data gathered in Phase II (Greene, 1989). Below we provide a more detailed description of the participants, measures, and analyses used in each phase.

Phase I

Participants

Participants in Phase I were drawn from a purposive sample of 45 heads of school who had previously participated in the NAIS Strategy Lab. These schools were chosen because their participation in the Strategy Lab indicated an interest in the topic of innovation. Of these 45 heads of school, 10 submitted completed surveys. Despite the small sample size, these respondents represented a diverse group of schools with respect to geographic location, enrollment, grade levels served, and student population. They were generally representative of the larger population of Strategy Lab participants in these areas (refer to Appendix B for a full analysis of demographic data).

Measures

Participants in Phase I completed an online survey that was distributed via email. This survey included three open-ended questions. First, we aimed to better understand how school leaders define innovation by asking, “What does innovation mean to you?” We then asked, “What innovation in your school has been most meaningful and why?” The purpose of this question was to narrow our scope of inquiry by identifying the types of innovation that are most important to school leaders. With our third question, we aimed to develop our understanding of how school leaders approach fostering innovation; we asked, “How does your school foster innovation?”

Analysis

In order to analyze the qualitative data collected during this phase, we employed a sensitizing concept matrix. This matrix was organized around the three key concepts described above: the meaning of innovation, types of innovation, and approaches to fostering innovation. For each of these concepts, we identified themes that were repeated across multiple responses, as well as key quotations that aligned with these themes.

Preliminary Findings

Findings from Phase I were used to inform the design of subsequent phases of research. The first objective of this phase was to better understand how school leaders

define innovation. When asked what innovation means to them, school leaders often provided definitions with multiple components, suggesting that innovation is multifaceted. Respondents repeatedly emphasized the idea of innovation as problem-solving. For example, one defined innovation as “the process where you create value by applying novel solutions to meaningful problems.” Many also cited the concept of improvement. For instance, “Innovation means trying new things with the goal of improving experiences.” Participants also conceptualized innovation not as a discrete task, but rather as a mindset or an iterative process. As one participant put it, “Innovation is a mindset and a process that encourages exploration and experimentation.” This supported our view of innovation as a disposition rather than a destination.

The second objective of this phase was to narrow the scope of our inquiry by identifying the types of innovation that are most important to school leaders. When asked about the most meaningful innovations in their schools, participants overwhelmingly referenced curricular and pedagogical initiatives. For example, one pointed to “our work to build a more culturally competent faculty,” and another cited “when we stepped back and allowed the children to investigate their solutions versus ours.” In light of these findings, we focused our research in later phases on innovation as it relates to teachers and teaching, rather than the structural or organizational aspects of independent schools.

The final objective of Phase I was to begin to understand how school leaders approach fostering innovation in their schools. In response to this question, a few participants mentioned specific staff members that were formally tasked with innovation work. This prompted us to inquire further about these positions in the second phase of our research. However, the majority of participants focused on supporting change ideas that came from the broader faculty and staff. As one explained, “I try, as much as I can, to say YES when a faculty or staff member has an idea.” This informed our approach to the interviews conducted in Phase III, where we sought to learn more about the communication between teachers and school leaders, including how change ideas are shared and how school leaders respond to them.

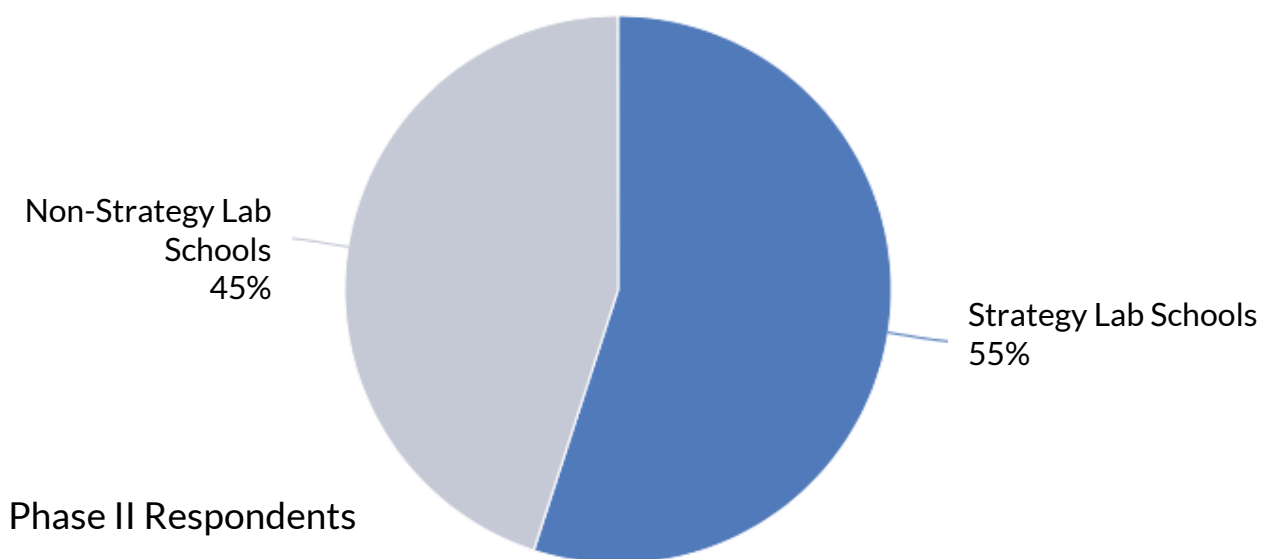
Phase II

Participants

Participants in Phase II consisted of two groups. The first were 56 schools that participated in the NAIS Strategy Lab, including the 45 schools from the Phase I sample and 11 additional schools that participated between the dates of the Phase I and Phase II surveys. These schools were selected to form the treatment group because they demonstrated a commitment to innovation by participating in the Strategy Lab. The

control group was a matched sample of 56 NAIS member schools that had not participated in the Strategy Lab. For each school in the treatment group, we selected a control school that was matched as closely as possible with respect to location, enrollment, grade levels served, boarding/day status, and coeducational/single-sex status. Heads of school were invited to participate via email and asked to distribute the survey to all of their faculty members if they agreed to participate. A total of 162 participants completed the survey.

Despite assurances that their responses would be both anonymous and confidential, some participants completed the survey but chose not to provide their school's name. As a result, they could not be assigned to either the Strategy Lab or non-Strategy Lab group. Of the 97 participants who provided their school names, 53 were from schools that participated in the Strategy Lab, representing 12 different schools. There were 46 participants from schools that did not participate in the Strategy Lab, representing 26 schools. Because of these differences in participation across schools, there were some demographic differences between the experimental and control groups, in spite of our efforts to match them as closely as possible (refer to Appendix C for a full analysis of school-level demographic data and Appendix D for individual-level demographic data).



Chi-square analyses showed significant differences in geographic location between the two groups, with participants in the Strategy Lab group being located in the Southeast and West and participants in the non-Strategy Lab group being located in the East and Midwest, $\chi^2(5, N= 97) = 34.35, p < .001$. There were also differences in enrollment, with participants in the Strategy Lab group tending to represent smaller schools, $\chi^2(4, N= 97) = 27.44, p < .001$. In addition, there were more participants in the Strategy Lab group from boarding schools, rather than all day or blended schools $\chi^2(2, N= 97) = 11.3, p = .004$. There were also differences between participants in the two groups with respect to certain

individual-level demographic factors. Specifically, although the majority of participants in both groups were teachers, a greater proportion of participants in the Strategy Lab group were administrators, $\chi^2(2, N= 97) = 6.86, p = .03$. Furthermore, participants in the Strategy Lab group reported having spent comparatively less time at their current schools, $\chi^2(3, N= 97) = 9.62, p = .02$. There were no significant differences between the two groups with respect to participants' years of experience or level of education, nor with respect to their schools' grade levels served, coeducational/single-sex status, or presence of a director of innovation.

Measures

The Phase II survey consisted of closed-ended items aimed at assessing two constructs: innovation and school culture. Items measuring school culture were drawn from the School Culture Survey, originally developed by Saphier and King (1985) and later validated by Edwards et al (1996). This survey consists of 24 items that ask faculty members to rate how often teachers and administrators in their schools engage in certain practices on a five-point scale ranging from "almost never" to "almost always." In previous studies, principal components analysis indicated that these practices related to three major constructs: teacher professionalism and goal setting, professional treatment by administration, and collaboration (Maslowski, 2006). A principal components analysis of the data collected in this study similarly indicated three main components: the first included items related to how teachers set goals for their students and work together to improve their instructional practices, the second contained items relating to administrative practices and decision-making processes, and the third included items related to communication and collective responsibility for student outcomes (see Appendix E). Analyses of data from the present study also confirmed that all 24 items together formed a reliable scale (Cronbach's $\alpha = .95$).

In the absence of similarly validated scales of innovation in schools, we designed our own items to measure this construct, in consultation with our partners at NAIS. These items asked faculty members to rate their agreement with statements about their school's commitment to innovation on a five-point scale, ranging from "strongly disagree" to "strongly agree." Items were designed to align with Rogers' characteristics of innovative organizations, including centrality, complexity, formalization, interconnectedness, system openness, and organizational slack. Eight of these items formed a reliable scale (Cronbach's $\alpha = .89$), which we refer to as the Commitment to Innovation Scale. Three items that were focused on individual (rather than school-level) characteristics did not strongly correlate with the other items in the scale and were thus excluded. See Appendix E for a full list of survey items.

Analysis

There were two primary goals for the quantitative analyses in this phase. The first was to provide a broad understanding of the landscape of culture and innovation in independent schools. In order to accomplish this, we gathered descriptive data on both the School Culture Survey and the Commitment to Innovation Scale across all participants. We also utilized a series of ANOVAs to determine whether there were differences in either of these measures associated with individual or school-level demographic factors. The second goal was to assess the relationship between school culture and innovation. Using data from all participants, we conducted a Pearson correlation to determine the relationship between the School Culture Survey and the Commitment to Innovation Scale. We hypothesized that they would be positively correlated. We also conducted ANOVAs to compare participants from schools who participated in the Strategy Lab with those who did not on both of these measures. We hypothesized that participants from schools who demonstrated a commitment to innovation by participating in the Strategy Lab would give higher ratings on the Commitment to Innovation Scale. Further, given the hypothesized relationship between innovation and school culture, we hypothesized that they would also give higher ratings on the School Culture Survey. Finally, we conducted a regression analysis to determine whether School Culture Survey ratings or demographic differences predicted Commitment to Innovation ratings.

Phase III

Participants

Based on the results of the Phase II survey, we selected five schools that were identified by the highest number of participants (at least five per school) as demonstrating a commitment to innovation. After receiving invitations via email, the heads of three of these schools agreed to participate. Participating schools were diverse with respect to geographic location, enrollment, and grade levels served. The first was located in the Southwest, with an enrollment of approximately 200 students in third through 12th grade. The second was located in the Midwest, with an enrollment of over 600 students in grades pre-kindergarten through 12th grade. The third was located in Pacific Northwest, with an enrollment of approximately 100 students in kindergarten through fifth grade. Heads of school assisted researchers in identifying at least one administrator and at least two teachers in each school who were willing to be interviewed. In order to ensure that they were familiar with the school culture, eligible faculty members were required to have worked at the school for at least two full years. Ultimately, two administrators and between two and four teachers participated from each school, for a total of 16 participants.

Measures

Interviews utilized a semi-structured protocol that was developed based on the information from the literature, namely habits of innovative workplaces, theory of innovation diffusion, and aspects of school culture. Two main areas of interest with interviews revolved around school culture and innovative practices, and interviews for teachers and administrators included slightly different questions in accordance with their roles (see Appendix F for interview protocols). All interviews were conducted over Zoom and were digitally recorded and transcribed. Most interviews were conducted individually, but some used colleague pairings where appropriate.

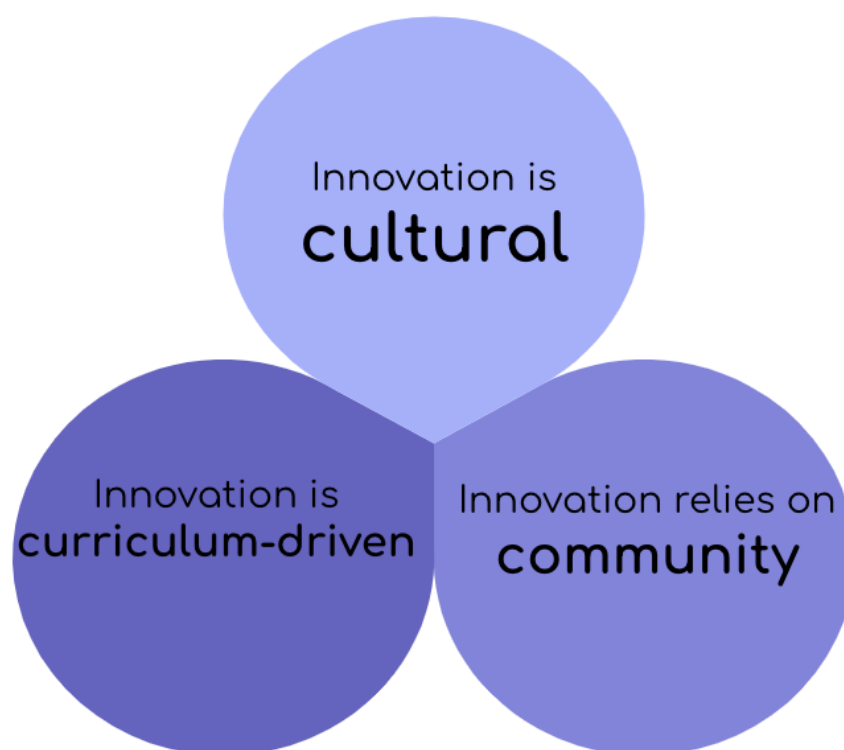
Analysis

The qualitative analyses in this phase again utilized sensitizing concept matrices to organize the data, organized around the two key concepts of school culture and innovation. For each interview, researchers identified themes and key quotations that aligned with each of these concepts. Once a matrix had been completed for each interview, we created a master matrix for each of the school sites. In order to create a master matrix, researchers compared all of the matrices from the site to identify the most prevalent themes and the strongest illustrative quotations.

FINDINGS

Habits and Cultural Norms of Innovative Schools

Our primary research question asks, “In schools with more innovative practices, what habits and cultural norms are present?” Findings across all three phases of our research point to three key norms: viewing innovation as *continuous cultural process*, *creating a supportive and collaborative community*, and providing the *curricular flexibility* needed to drive innovation. Below, we present the data from Phases II and III that support these conclusions.

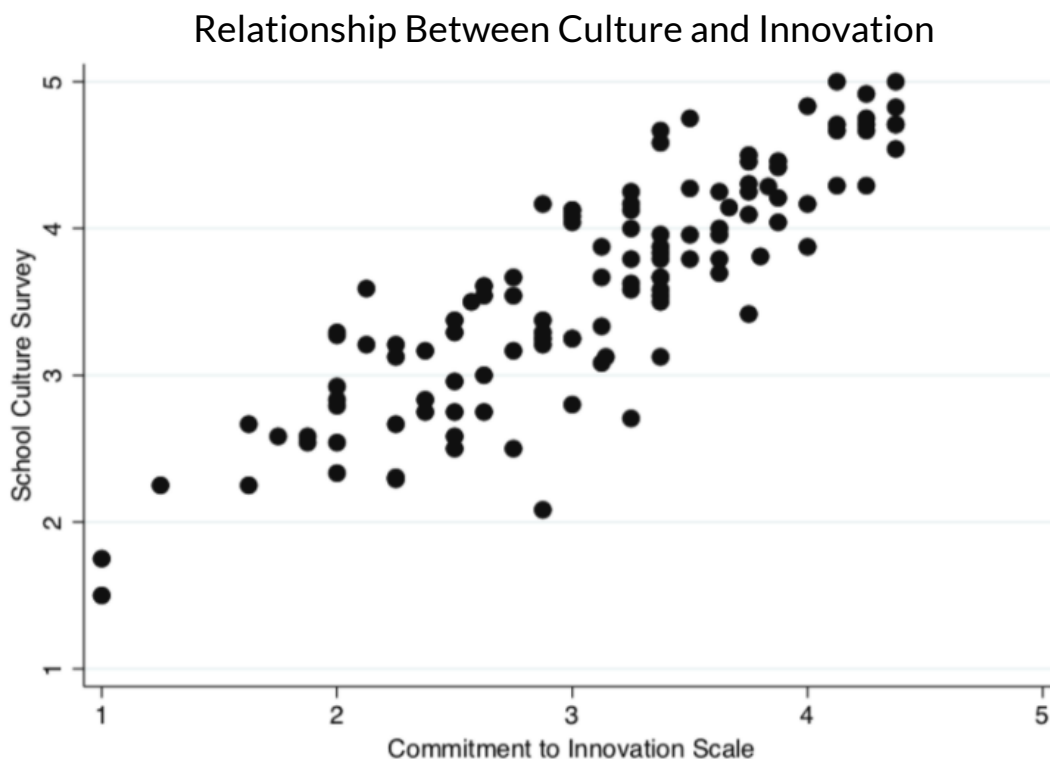


Innovation as a Continuous, Cultural Process

As presented above, preliminary findings in Phase I indicated that school leaders view innovation as multi-faceted and as a continuous, ongoing process. This conceptualization of innovation as a disposition, rather than a destination, led us to hypothesize that innovation would be closely connected with school culture. In Phase II, we aimed to explore the relationship between these two constructs using our quantitative survey data.

First, to provide a picture of the overall landscape of culture and innovation in independent schools, we examined descriptive statistics for the full data set, including both schools that participated in the Strategy Lab and those that did not. These analyses

indicated that the majority of participants rated their schools as having a positive school culture ($M = 3.61$, $SD = .78$) and at least a moderate commitment to innovation ($M = 3.11$, $SD = .76$), with ratings higher than 3 being favorable for both scales (see Figures 1 and 2 in Appendix G for distributions of ratings). Next, we examined the strength of the relationship between the School Culture Scale and the Commitment to Innovation Scale in the data set as a whole. A Pearson correlation indicated that the two variables were strongly correlated, $r(115) = .86$, $p < .001$ (see Figure 3 in Appendix G).



We then compared schools who demonstrated their commitment to innovation by participating in the Strategy Lab with schools who did not participate in the Strategy Lab. A series of one-way ANOVAs indicated that there were no significant differences in either Commitment to Innovation ratings or School Culture Survey ratings associated with a school's Strategy Lab participation status (see Appendix H for mean ratings by Strategy Lab participation group). Finally, we conducted a regression analysis to determine the association between School Culture ratings and Commitment to Innovation ratings, given participation in Strategy Lab and demographic characteristics. This analysis confirmed that School Culture ratings significantly predicted Commitment to Innovation ratings ($\beta = .87$, $p < .001$), and together the variables accounted for 77% of the variance in Commitment to Innovation ($R^2 = .77$, $F(12, 89) = 24.31$, $p < .001$). However, neither Strategy Lab

“It’s a continual cycle. Innovation is not a one-and-done type process.”

participation status nor any of the demographic variables emerged as significant predictors (see Appendix H).

In Phase III, we sought to learn more about how educators understand innovation and its relationship with school culture. When asked to define innovation, many participants again highlighted its multifaceted nature. One Assistant Head of School stated, “It means trial and error, it means being courageous, it means being adaptable. It means being willing to be wrong and make mistakes. It means a dedication to improving your craft or organization. It means creativity.” Participants also emphasized that it should be ongoing and iterative: “It’s a continual cycle. Innovation is not a one-and-done type process.” A number of participants also made it a point to explain that innovation should not be understood solely as referring to technology. For example, one responded, “There is sometimes a misnomer that education equals technology. And so, we’ve been trying to make sure that we broaden that definition of innovation as a culture.”

“There is sometimes a misnomer that education equals technology. We’ve been trying to broaden that definition of innovation as a culture.”

Supportive and Collaborative Communities

Next, we sought to learn more about the characteristics of participating schools’ cultures and how they might work to support innovation. In Phase II, we utilized a series of one-way ANOVAs to determine if there were any differences in School Culture Survey ratings associated with school or individual characteristics. These analyses showed no significant differences in School Culture ratings associated with either school-level or individual demographic factors (see Appendix I for mean School Culture ratings by school-level demographic factors, and Appendix J for individual-level demographic factors). Thus, we turn to our qualitative data from Phase III to help us better understand the role of school culture.

Our interviews revealed that culture is people-driven. Regardless of school mission, organizational chart, or mode of instruction during the pandemic (hybrid, remote, etc.), teachers and administrators reported their connections with other people as a source of school culture. Interestingly, when asked to define success, few responded with quantitative data (college-going percentages, ACT/SAT scores, etc.). A theme in the responses relating to success was relationships on campus. In some instances, this comes from building a community. One teacher shared: “We always cheer for each other when we’re able to break through with a kid or family.” For schools with younger students, success related to seeing students’ growth--developmentally or academically--as they reached the end of their time at the school, before moving onto a secondary setting. Other instances of success were personal but still relational: seeing students adapt to the changing nature of learning during a pandemic, advocating for themselves, or giving capstone speeches as school leaders. In many cases, teachers and administrators relayed stories of success as relationship-driven: the ability for teachers to see growth and recognize maturity in students was a defining feature of whether or not they were

“I’ve worked really hard to create a place that is built on kindness and respect. And I have this idea of, ‘Can you be exceptional and the best through kindness and respect as opposed to power and fear? And I’m here to tell you that you can be as powerful and as successful by being kind to people.’” (HoS)

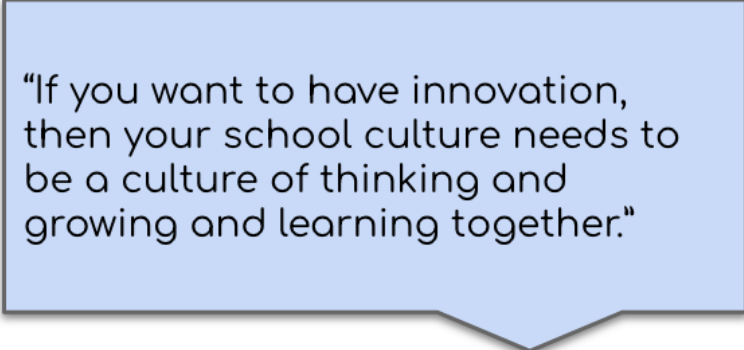
successful with their work. A teacher claimed that success was visible not on paper but in the environment: “You can tell the successful teachers because kids are happy, engaged, and doing work.” One administrator referred to success as a continuum without a final endpoint: “In general, if you’re not moving forward, you’re in decay.”

Of the individuals we interviewed, nearly all shared instances of feeling community, collegiality, and support while at work, regardless of position. We heard numerous anecdotes reflecting leadership’s ability to set an example for staff: in one school, the head of school shared her own goals for the year, and without prompting, teachers followed suit to share theirs; this is now a tradition that happens every fall. An administrator on one campus shared beliefs about building a team and culture where people are happy to come to work: “I think it boils down to trusting and liking. You have to like each other to trust them, right? And have fun - oh my gosh, you have to have fun together. Take it seriously, but not too seriously.” Another participant described her school as “joyful, and...collaborative, and it’s really a place to grow and make mistakes and build on each other’s ideas.” All of these responses illustrate the nature of strong community on school campuses.

Nearly all teachers stated their desire for greater opportunities for collaboration; those who felt as though they had specific time devoted to collaboration either in grade-level teams or departments reported more opportunities for connection, sharing of ideas, and updates on instructional technology uses. One teacher claimed that time together was

“a big part of dissemination of information - also problem solving, setting goals. [...] There’s a lot of conversations that happen...and a lot of information that is distilled.” The time to share information, collaborate, and receive updates was crucial to teachers feeling a sense of connectedness. At another school, a teacher shared that common time together promotes what adults hope to encourage with students: “[What] we’re doing here is trying to find and develop a culture of feedback, partnership, and growth, not only within our, you know, staff and teachers but also within the classroom as well.”

One participant shared the belief that not having an answer is an acceptable part of the culture at her school: “School leaders have to be comfortable being uncomfortable. Knowing this is part of the process and letting your staff wrestle with things and try things.” We heard stories referencing leadership’s ability to admit mistakes and make space for others within the school to make mistakes and learn from them without feeling shamed or penalized. In one school, a teacher shared how others can learn from mistakes or failures: “Often when we try something, it’s OK if it doesn’t work. We can share those experiences too. But giving things a try and then having the opportunity and being invited to share about how it went is really how things can shift and change.” Overall, teachers reported a general comfort around making mistakes and the ability to try new technologies or processes, especially in the changing nature of pandemic teaching structures and students’ abilities to be on campus or remote.



“If you want to have innovation, then your school culture needs to be a culture of thinking and growing and learning together.”

In our work, it is clear that leadership’s actions and expectations are stronger influences on culture than rules or procedures written in a handbook. As one school leader shared, the drive to be successful in a tuition-driven environment should not come at a cost of practicing emotional intelligence: “I’ve worked really hard to create a place that is built on kindness and respect. And I have this idea of, ‘Can you be exceptional and the best through kindness and respect as opposed to power and fear? And I’m here to tell you that you can be as powerful and as successful by being kind to people.’” To this administrator, success does not happen in an environment devoid of psychological safety.

Teachers noted that this environment of respect allowed for each individual’s unique professional strengths to be recognized. Many described how school leaders encouraged them to pursue leadership roles that played to these particular strengths: “We’re all honored for the expertise and passions that we have, and at any given moment, one of us might be stepping up to lead the group in that way.” They also described how school leaders helped them to hone their craft through PD offerings that were highly personalized: tailored to their school, department, or grade-level needs, with repeated

"I am able to try something new. And if it fails, everyone's okay with that, you know, because we tried something."

chances to ask questions, and at times conducted by other members of their school's faculty.

As one teacher explained, sharing new practices or skills became a standard tenet of meetings during the year: "We've done a few sharing sessions per year where teachers are

actually allowed to share practices and encouraged to--and even getting people over that hurdle the first year [to share themselves], three years ago, was not the easiest." In some cases, teachers were invited to join an administrative team for the purpose of sharing innovative ideas. One participant shared the importance of culture and community as a tool for building innovation: "If you want to have innovation, then your school culture needs to be a culture of thinking and growing and learning together. You can buy all the equipment that you want but if you're not encouraging people to take risks, and try new things, then the change isn't going to be as effective." Both administrators and teachers shared similar reflections.

Despite hearing positive stories of school leadership through modeling psychological safety, we also heard requests from teachers who noticed areas of improvement on their campuses. Even in schools with high levels of self-reported innovative practices, as our Phase III schools were, teachers still wished for more open communication between administration and teaching staff, especially as related to allocation of time, duties, and clarification for opportunities for teacher-leadership and growth. One school leader shared a wish for teacher-leadership to move away from logistical or administrative work when sharing that department chairs "have a whole bunch of work to do on...being more innovation/curricular type leaders; they're probably too administrative right now."

Curricular Flexibility

As discussed in the preliminary findings from Phase I, school leaders asked to identify their school's most meaningful innovations generally pointed to developments in the areas of curriculum and pedagogy. This prompted us to focus our Phase II survey primarily on questions related to teachers and teaching. When analyzing this survey data, we conducted a series of one-way ANOVAs to determine if there were any differences in ratings on the Commitment to Innovation Scale associated with school or individual characteristics. There was a significant effect for grade levels served at the school, $F(2, 111) = 3.55, p = .03$. Post-hoc analyses using Scheffe's tests showed that participants in schools serving elementary grades only rated their school's Commitment to Innovation significantly higher ($M = 3.40, SD = .93$) than participants in schools serving secondary

grades only ($M = 2.71$, $SD = .65$). Ratings from schools serving both elementary and secondary grades were not significantly different from either of the other groups.

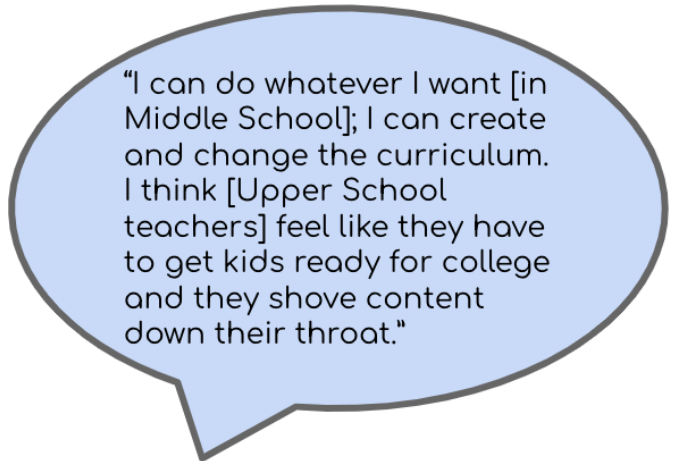
There were no significant differences in Commitment to Innovation ratings associated with a school's location, enrollment, boarding/day status, or coeducational/single-sex status (see Appendix I for mean Commitment to Innovation ratings by each of these school-level demographic factors). Another series of one-way ANOVAs were conducted to determine if there were any differences in ratings on the Commitment to Innovation Scale associated with individual demographic factors. These analyses showed no significant effects for participants' professional role, years of experience, time at their current school, or level of education (see Appendix J for mean Commitment to Innovation ratings by each of these individual-level demographic factors).

Data from Phase III interviews affirmed the idea that innovation is often driven by curriculum. When questioned about their school's innovative practices, many teachers and administrators shared stories about innovation as it related to the curriculum, especially during the pandemic: teachers and students learning new web-based platforms to avoid physical sharing of materials, using individualized technology in new ways to meet learning targets, and updating projects or curriculum to reflect students' interests and skills. For example, one teacher described how in the past, "We purposely said, we don't like kids using technology in the classroom, we want them to have social interactions," but when COVID struck, "In one week, every teacher was online, every kid was online." However, many also cited pedagogical structures that predated the pandemic that they believed were key to fostering innovation, such as project-based learning, elective classes, yearly themes, and cross-curricular activities. As one teacher put it, these types of structures ensure that "there's things that are the same, but every year, there's things that can be different too."

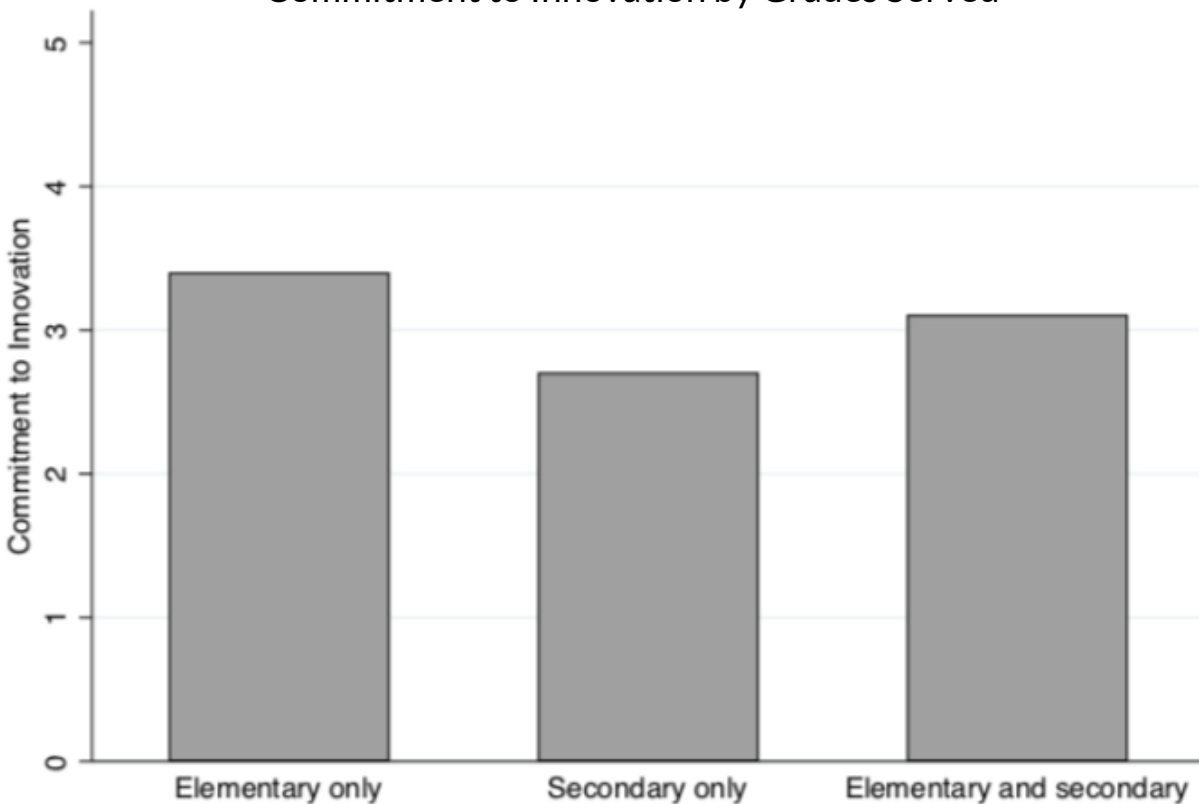
One teacher shared a belief that current trends in innovation are successful due to past work to make campus a place to share new ideas and experiment: "What makes me...really optimistic about the future of innovation here is how we've responded to the past...nine months...of how things have changed, so that I think the ground was fertile for people to...build and try these innovative things." Some recognized that innovation did not need to be grand, sweeping changes: "Our faculty were actually quite good in a lot of small things, you know like, 'What can we put up to make more outdoor space?' And to me, that's simple innovation, but that's still something that, if it's only with one teacher, you're not really getting the [same] benefit as a[n entire] school culture or community [doing it]." In

many ways, innovative mindsets and pedagogy multiplied on campuses when faculty were ready to make the shift.

Speaking to teachers across various grade levels also helped to illuminate the finding from Phase II that elementary schools demonstrated a stronger commitment to innovation than secondary schools. As one teacher stated, “I can do whatever I want [in Middle School]; I can create and change the curriculum and I love that freedom to try new things and experiment. I wish our Upper School teachers felt like that--I think they feel they have to get the kids ready for college and they [try to] shove content down their throat.” Similarly, a Head of School remarked, “Our Upper School is probably more ‘rigid’ because they’re...more mindful of AP exams and external measurements and things like that. That doesn’t allow for as much openness in terms of thinking outside the box.”



Commitment to Innovation by Grades Served



Who Drives Innovation

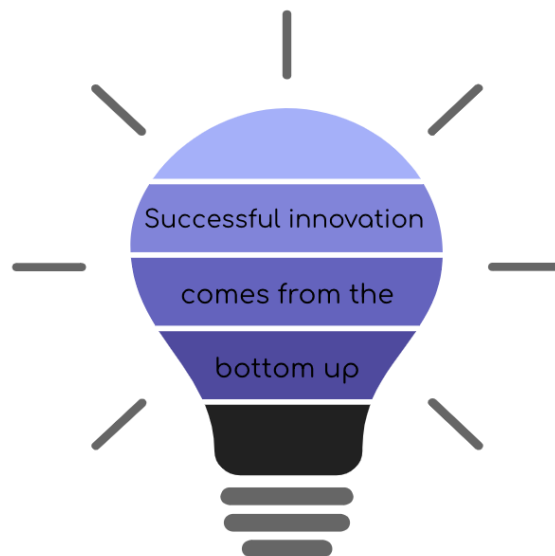
Our secondary research questions ask, “What is the makeup of a team that makes innovation happen?” and, “Who drives innovation?” Based on preliminary findings from Phase I, we wondered whether faculty members who were specifically tasked with innovation work might play a role in answering these questions. Consequently, we asked Phase II respondents whether their schools employed a Director of Innovation or similar position. A one-way ANOVA indicated that there were no significant differences in Commitment to Innovation ratings between teachers from schools with a faculty position dedicated to innovation and those without such a position (see Appendix I). Qualitative data from Phase III can help us to further understand this finding, suggesting that faculty members in these positions are not always able to fully dedicate themselves to innovation work. One Head of School recounted how, after intending to hire a Director of Innovation, his school had instead decided to add that title to the existing Director of Technology. Although some adjustments to his responsibilities were made, ultimately the Head said, “Does he have enough time for it? No.” Once again, we see a need to be intentional about use of time and communication.

Across all of the schools that participated in Phase III, participants repeatedly emphasized that innovation - particularly in the areas of curriculum and pedagogy - should not come from the top down, but rather should be driven by teachers as much as possible. As one Head of School explained, “We want most of it to come from the teachers themselves,” not from the administration mandating, “We’re an innovative school and you really should be trying all kinds of new things.’ Because I’ve had that in a couple of previous institutions where I’ve just seen it backfire.” Teachers at each institution described their administrations as highly receptive to change ideas from teachers. For example, “Our administration is very supportive...if we’re well-researched and passionate about it, it’s hard to say that it’s not going to happen.”

“We want most of it to come from the teachers themselves.”

This did not imply unquestioning acceptance of every idea. One teacher said

of her Head of School, “She will ask you questions and make it better or different or change it.” Similarly, that Head of School explained, “They put it out there, and then I kind of poke



holes in it or wonder about things.” However, she noted that this type of questioning only worked because of the high degree of trust between the faculty and the administration: “I will back up every employee to the end of the world and they know that we can talk and argue and disagree inside the school, and I would have their back, no matter what.” Ultimately, teachers noted that the Head of School provides a valuable big-picture perspective on new ideas. As one teacher put it, “She takes into account what we’ve done in the past, what our mission is, what our values are. Then that’s what guides it - what’s best for kids.” This positive, trusting relationship between teachers and administration is paramount to building school culture that allows space for innovative practices.

“I try, as much as I can, to say YES when a faculty or staff member has an idea.”

“[The Head of School] takes into account what we’ve done in the past, what our mission is, what our values are. Then that’s what guides it - what’s best for kids.”

“I will back up every employee to the end of the world, and they know that we can talk and argue and disagree inside the school, and I would have their back, no matter what.”

DISCUSSION

Habits and Cultural Norms of Innovative Schools

The primary aim of this research was to learn more about the habits and cultural norms that are present in schools with innovative practices. In order to accomplish this, we adopted a mixed methods approach. We utilized quantitative analyses to examine the relationship between innovation and school culture on a broad scale, followed by qualitative analyses that helped us to better understand how this relationship works in a select group of “best practice” cases. From these analyses, three key findings emerged: innovation is *cultural*, it relies on *community*, and it is driven by *curriculum*.

Culture

Beginning in the first phase of our research, it became clear that school leaders do not view innovation as a discrete task. Rather, they approach it as a continuous, iterative process of problem-solving and improvement. Participants in the third phase reiterated this view. Many remarked that innovation is often falsely equated with technology, but it actually encompasses much more. They defined innovation more broadly as a willingness to experiment or participate in a cyclical design process. In short, schools that innovate successfully view innovation as an institutional disposition. As such, it is inextricably linked with a school’s culture. The quantitative data collected in Phase II also support this assertion, showing a strong correlation between the School Culture Survey and our Commitment to Innovation Scale. These findings echo previous research by Ruttan and Hayami (1994) and Usher (2013), who argued that innovation is the product not just of individual actions, but of the workplace environment.

Community

Having established this link between innovation and school culture, we must now ask what sort of culture specifically helps to foster innovation. The School Culture Survey focuses on three elements of culture: teacher professionalism, professional treatment by administration, and collaboration. Based on the strong correlation between this survey and the Commitment to Innovation Scale, we can deduce that these elements play an important role. This is further supported by the qualitative data from Phase III. Participants noted that teachers in innovative schools are treated as experts in their field, and they continue to hone their craft through professional development opportunities that are tailored to meet their individual needs and goals. This type of expertise is what Rogers (2003) refers to as organizational complexity. Participants also emphasized the importance of trusting relationships between colleagues, particularly between teachers and administrators. This links to Rogers’ (2003) concept of interconnectedness and to Amabile’s (1998) claims

regarding the importance of leaders who deeply understand the people in their organization. In addition, participants noted a strong emphasis on collaboration, which was described as an expectation for teachers in innovative schools. Prior research has also found that high levels of collaboration are associated with improved instructional practices and student outcomes (Waldron & McLeskey, 2010), and that highly collaborative schools are more likely to choose innovations that are aligned with their long-term goals (Fullan, 2000). Overall, teachers and leaders in innovative schools expressed the importance of a supportive culture built on a foundation of respect.

Curriculum

In order to understand how this culture translates into innovative practices, we began by asking school leaders to tell us about the most meaningful innovations in their schools. They consistently pointed to curricular and pedagogical innovations. As our research progressed, it became clear that curricular flexibility is critical for fostering innovation. This is perhaps most apparent when comparing elementary and secondary schools. Our quantitative analyses in Phase II showed that schools who served only elementary grades were rated significantly higher on the Commitment to Innovation Scale than schools who served only secondary grades. Qualitative data from Phase III helped to illuminate these findings, as participants explained that elementary schools have much more flexibility to experiment with their curriculum. Secondary schools, on the other hand, may feel constricted by the demands of preparing students for college, forced to work within the bounds of AP exams, and other external structures. In order to innovate, teachers must have the freedom to make curricular and pedagogical changes in response to their students' needs. Moreover, the school environment must provide a safe space for teachers to make mistakes so that they can feel confident engaging in this kind of pedagogical risk-taking. This finding aligns with research on innovation in the workplace that has demonstrated the importance of a high tolerance for failure (Tian & Wang, 2011), as well as research on the importance of psychological safety (Edmonson, 1999).

Who Drives Innovation

A secondary aim of this research was to better understand who drives innovation and the makeup of teams that make innovation happen. Our findings suggest that innovation, particularly in the areas of curriculum and pedagogy, is most successful when it is driven by teachers. Leaders of innovative schools noted that forcing change from the top down is often unsuccessful. Instead, they emphasized the importance of being open to change ideas from teachers and saying yes to these ideas whenever possible. That is not to say that administrators do not play a critical role. Teachers in innovative schools reported that their school leaders questioned their suggestions and pushed them to think critically

about how changes could be implemented most effectively. They emphasized the importance of combining the administrator's big-picture perspective with teachers' on-the-ground knowledge. This echoes Amabile's (1998) work on the importance of diverse perspectives and Rogers' (2003) claims about the need for shared leadership for fostering innovation.

Some schools have recently moved to create administrative roles that are specifically focused on innovation. However, our findings suggest that this may not result in more innovative practices. There was no significant difference between schools with directors of innovation and those without on our Commitment to Innovation Scale. It may be that formally tasking one individual with innovation work causes faculty members to treat innovation as a destination that can be checked off, or as someone else's responsibility. Instead, it may be more productive to view innovation as a collective disposition of the entire school community. This will require school leaders to implement broader structures that foster innovation, such as providing dedicated time for teacher collaboration and ensuring that there is open communication between teachers and administrators. It may also be beneficial for school leaders to pursue distributed leadership models that allow teachers to serve as both formal and informal pedagogical leaders (Berg, 2018; Waldron & McLeskey, 2010).

LIMITATIONS

One limitation of this study is the relatively low response rate. This was likely influenced by the COVID-19 pandemic, which placed many demands on teachers' time. Several of the heads of school who declined to participate specified that they could not justify sharing the survey with their faculties, as it would add work to teachers' already-full plans. We cannot rule out the possibility of systematic differences between responders and non-responders. This was further complicated by the fact that many participants declined to provide their school's name, which made it impossible to place them into the Strategy Lab or non-Strategy Lab groupings. As a result, the sample size for analyses comparing these two groups was even smaller. In addition, despite our best efforts to match the two groups as closely as possible, differing response rates meant that there were significant differences between Strategy Lab and non-Strategy Lab groups on a number of demographic factors. In order to more accurately compare schools that have participated in the Strategy Lab with those that have not, it would be preferable to utilize a waitlist control group (given that random assignment is likely not practical in this situation).

Another limitation relates to the difficulty of measuring innovation. Unlike school culture, there are no validated instruments available to measure innovation in

schools. Indeed, there is no widespread consensus on how this concept should be operationalized in the school setting. Some previous research has opted to utilize questions about specific practices, such as items from the Schools and Staffing Survey about year-round schooling or multigrade classrooms (Preston et al., 2012). However, this leaves the possibility that schools may be engaging in a variety of other innovative practices that have not been identified. For this reason, we opted for a broader approach by asking teachers to rate their school's commitment to innovation in a number of areas, grounded in Rogers' diffusion of innovation theory. This approach has its own pitfalls, though, as we cannot be certain whether this self-reported commitment to innovation actually translates to more innovative practices.

The COVID-19 pandemic may also play a role in the self-reported commitment to innovation. Schools around the world were faced with unprecedented challenges to serve students remotely. Teachers and administrators alike needed to respond to being closed to in-person learning and to adapt their curricula to reach their students in their homes. In many cases, this required digitizing lessons, building community at a distance and streamlining communications to meet school stakeholders. Schools that were able to meet these challenges may have had this readily on their mind. However, in other years, without this pandemic, they may not have been so quick to affirm their school's commitment to innovation. Further research in this area is needed to develop properly validated instruments to assess innovation in the school setting.

FUTURE RESEARCH

This study provides a look at the broad landscape of innovation and culture in independent schools and confirms the close relationship between these two constructs. Future research should endeavor to learn more about the specific elements of school culture that have the greatest impact on innovation, and the ways that elements develop. This research might build on the work of Goleman (2000), who investigated the effects of various leadership styles on drivers of workplace climate, such as flexibility and responsibility. By applying similar methods to drivers of school culture, researchers could help to guide school leaders looking for specific actions that they can take to create a more innovative disposition in their school communities.

Future research might also seek to better understand some of the unanticipated non-significant findings of this study. For example, given the finding of no significant differences in commitment to innovation between schools with directors of innovation and those without, future researchers might inquire further about how these roles function. A more thorough examination of the responsibilities typically assigned to these positions, the

level of authority that they are granted, and the ways that they interact with other roles could help to explain why they may not be producing the desired results. In addition, contrary to our hypotheses, there were no significant differences between Strategy Lab and non-Strategy Lab schools on our measures of school culture and innovation. To better understand this finding, future researchers might begin by investigating who participates in the Strategy Lab and why. It might also be helpful to conduct a process evaluation of the Strategy Lab workshops in order to assist the NAIS in continuing to refine and improve them.

RECOMMENDATIONS

The current approach to innovation as implemented in the NAIS Strategy Lab emphasizes “demand-side innovation” - that is, understanding why parents as customers seek out independent schools and how schools can meet their needs (Torres, 2019). Schools participating in the Strategy Lab identify a specific challenge that they are facing in meeting these needs and learn to implement various tools to develop solutions to this challenge through an iterative improvement cycle. With its emphasis on rapid prototyping and continuous improvement, this approach captures the idea that innovation is a disposition rather than a destination. It undoubtedly provides school leaders with valuable tools for tackling specific problems. However, it is not sufficient to create a broader culture of innovation within a school. In order to foster innovation in the long-term, the NAIS must expand its focus to consider cultural factors such as the relationships between teachers and administrators, the expectations surrounding collaboration, and the degrees of freedom that teachers are granted to experiment. Below, we recommend specific steps that the NAIS can take to foster innovative practices by recognizing the critical role of school culture. In addition, we offer recommendations that leaders of member schools may enact at their particular sites.

RECOMMENDATIONS FOR THE NAIS STRATEGY LAB

The NAIS Strategy Lab for Innovation in schools offers a narrowly-focused approach to helping schools develop innovative practices. Each school shares a problem they would like to address at their school, and the Strategy Lab works to walk the school through a process that will help the school to find a solution to that problem. While there are benefits to this process, the particular outcomes are varied. Given the strength of the relationship between culture and innovation, we believe that a stronger focus on school culture will help the Strategy Lab to foster long-term change. In order to accomplish this, we recommend that the Strategy Lab outline a clearer set of dispositions a school should

seek in order to remain innovative over time. We also recommend that the NAIS provide opportunities for Strategy Lab participants with similar goals to create collaborative communities that support each other in utilizing innovative practices.

Determine A Clear Set of Dispositions for Innovation

Successful innovation is no easy task. It is highly complex, requiring a willingness to take risks and a commitment to a deep understanding of both school systems and constituent family needs (Fish & Wolking, 2019). By determining an agreed upon set of dispositions of innovation, the Strategy Lab can point to specific areas of the culture of a school that support innovation. Moreover, through outlining specific dispositions, the Strategy Lab and its member schools can partner together to navigate the complexities that are often associated with innovation. This creates more opportunities to identify and support the needs of independent schools and foster long-term innovative practices. Finally, this increase in specificity will enable the Strategy Lab to improve its ability to collect data and measure the success and progress of its participating schools. In order to continue to offer the Strategy Lab services, the NAIS should be able to classify its own success on campuses after the program has concluded; beginning with a definition and using that in follow-up communication is a first step. Because some of the most innovative practices address fundamental challenges and create permanent shifts in everyday culture (Satell, 2018), attention to long-term changes instead of short-term fixes is important to observe.

Niche Networking Opportunities

Innovation has three distinct phases: an invention, development of a prototype or model, and implementation of an idea that solves a particular problem facing an organization (Thurlings, Evers, & Vermeulen, 2015). Once the Strategy Lab is able to determine a clear cultural disposition that leads to innovation, there is greater opportunity to leverage the specific needs of a school. Just as the teachers in our study benefited from professional development opportunities that were personalized to fit their unique needs, schools who participate in the Strategy Lab may benefit from the opportunity to personalize their experience to align with their specific school context. Creating interconnected, context-specific professional development has shown to lead to greater community, better instruction, and student achievement (Darling-Hammond et al., 2009). Personalizing professional development could be presented as a part of the Strategy Lab setting as it is now, or the specific needs of a school could be presented as different networks that schools can opt into and explore. For example, schools seeking innovative solutions to student retention may be able to follow a shared PDSA cycle for like-minded campuses; leaders looking to refresh teacher professional development may find ideas for

successful changes with other Strategy Lab inventions, prototypes, and implementations, learning from similar campuses or similar cultures. Because the NAIS utilizes their website to share information with schools in a password-protected space, they may be able to create a similar shared space for schools to connect based on common themes such as curricular changes, teacher empowerment, or mission-aligned mindsets.

Strategy Lab Schools can use a shared understanding of the PDSA cycle to create a foundational practice among schools that foster long-term innovative thought. By having this shared foundation understanding to introduce innovation on campuses, schools can work together to address problems they face in the future instead of operating independently without collaboration. Our findings highlight the importance of a collaborative community within schools, and these networking opportunities could provide a way for independent schools to collaborate on a broader scale. Given the nature of independent schools' common challenges, this change in how Strategy Lab sets a foundational understanding for schools to address challenges in the future in a collaborative manner benefits school leadership beyond the intensive workshop.

Listening Lab for Leadership

Just as innovation is multifaceted, so are the cultures of each school (Fish & Wolking, 2019). As such, change is unique to each context (Lubienski, 2003). Prior to diving into the cultural adjustments for innovative changes, the Strategy Lab participants should understand the culture of their schools before engaging in the work. This cultural understanding can come through a series of focus groups or surveys that determine how ready a school is to make changes and at what rate. Alternatively, participants could engage in this work prior to beginning Strategy Lab through reflection prompts, or NAIS's Strategy Lab leaders could begin the programming with guided reflections aiming to bring out specific cultural norms of member schools.

Another element that has potential to help members of a school community adapt to change is the level of active listening at the administrative and faculty levels. Specific training for school leaders to be able to listen in order to make their faculty and community feel heard helps the stakeholders at a school develop a sense of confidence and trust that is imperative for innovative practices (Simpson, 1990). Moreover, because research clearly shows that leaders who have high levels of emotional intelligence are able to grow teams and build sustainable progress (Goleman, 2000), Strategy Lab could dedicate specific parts of its work to developing leaders' emotional intelligence, either as a separate track for leaders or as a branch before participating. By focusing on areas of empathy, self-awareness, motivation, self-regulation, and social skill (Goleman, 1998), leaders will be primed to carry out the tasks they design within the Strategy Lab program. This specific Strategy Lab scaffold for leaders will benefit schools long after they complete the work with

the NAIS, and even after change of staffing on campus, as leaders are prepared to move forward with whomever may be working on new initiatives.

RECOMMENDATIONS FOR SCHOOL LEADERS

In addition to recommendations for the leaders of the NAIS Strategy Lab, our research has revealed places of growth for school leaders as their work relates to innovation. Overall, when looking at opportunities to help schools either initiate or sustain innovation, school leaders have a powerful influence on the culture surrounding its success or failure. Effective leadership has a measurable effect on climate and an organization's ability to adapt (Goleman, 2000), and leadership should take this responsibility seriously when considering changing or adapting practices on campus. Additionally, innovation in workplaces includes adjusting the environment and recognizing that employee experiences are related to work production. The concentration on creating a high-quality workplace puts the health and wellbeing of employees at the forefront of a company's culture, which results in higher job satisfaction, stronger relationships between employees, and increased trust in management (Chen, 2016). This cannot be achieved without leadership's attention to workplace and school culture. In consultation with this research, our recommendation for school leaders is that they should focus on clear communication, scheduling support for collaboration, and specifically-tailored professional development.

Clear and Connected Communication

The power of clear and purposeful communication cannot be understated when schools are seeking change, especially in the realm of increasing innovation and innovative practices. Leaders who are able to clearly express their vision for the school and engage the stakeholders of the administrative and faculty teams will have greater success than those who are ambiguous or attempt change solely on their own. Once the vision is communicated, leaders' ability to meaningfully connect the faculty to the work depends on their ability to model and support trusting relationships in a positive school environment. As we have noted, these relationships take time to develop. Some of our Phase III respondents who reported high levels of trust credited their relationships to open, honest communication. School leaders should have a communication plan or protocol that outlines what information will be communicated in emails, large-group settings or small-group settings. By clearly espousing their channels of communication, they allow in-person meeting times to be used as purposeful times of collaboration between various stakeholder groups in the school community. Understanding what will be communicated when and in what channels decreases ambiguity for faculty whose schedules may already be full.

Specific and Supported Scheduled Space

Creating meaningful collaboration time by specifically scheduling opportunities for teachers to discuss and share their work has made teachers feel more connected and committed to collaborative opportunity. These opportunities allow teachers to create positive workplace environments that can promote “cycles of convergent and divergent ideas” which promote deeper understanding (Garud, Tuertscher, & Van De VenGarud, 2003, p.781). This time must be protected and not re-distributed for other institutional initiatives. Committing to collaboration, giving the time for collaboration, and protecting that shared time shows specific alignment to goals and missions and leads faculty to feel supported in achieving success. Additionally, this recognition of commitment to sharing ideas and co-constructing experiences could promote faculty trust in leadership, understanding, and support.

Planned and Personal Professional Development

By focusing on some of the key elements of a school’s culture, a leader can help to create an environment where innovation is not just an idea but a way of life. Some areas of focus include professional orientation (professional development, collaboration between educators) and organizational structure (leadership, mission and goals, policies, communication) (Schoen & Teddlie, 2008). Professional development is a key element of school culture and professional orientation. Furthermore, individual and personalized professional development inspires growth amongst faculty. By personalizing continuing professional learning opportunities to the needs of individuals or a group of faculty, these important constituents feel advocated for and trusted. Through investing in planned and personal professional development, leadership bolsters school culture and in turn, the ability for faculty to innovate.

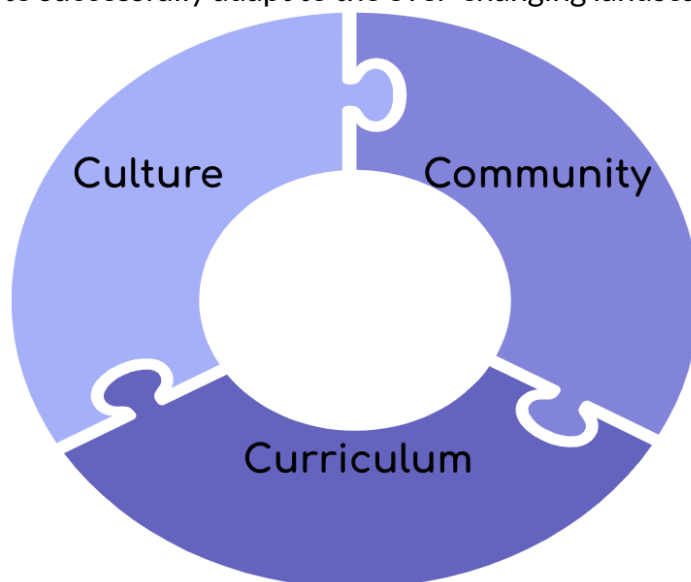
CONCLUSION

Innovation is paramount to the sustainability of any organization in the twenty-first century. However, research on innovation in the school setting has been relatively limited, primarily focused on comparing the degree of innovation in different types of schools (e.g., charter versus traditional public schools). Despite a considerable body of research demonstrating the importance of school culture, researchers have not yet explored in depth the link between school culture and innovative practices. Thus, this study aimed to explore the landscape of innovation and culture in independent schools and begin to understand the link between these two concepts. By better understanding this

relationship, we hoped to be able to inform the NAIS’s work to support independent schools in becoming more innovative and sustainable.

Using a mixed methods approach, we identified three key habits and norms that are associated with a strong commitment to innovation. First, school leaders view innovation as a continuous process that is ingrained in the school culture. Second, the school culture places an emphasis on collaboration and trusting relationships with teachers valued as respected professionals within the school community. Third, the curriculum is flexible enough to allow teachers to experiment with new pedagogies. In addition, we found that schools with the strongest commitment to innovation allow teachers to drive change in partnership with supportive administrators who can provide a big-picture perspective. Innovation is considered a shared responsibility.

Based on these findings, we recommend that the NAIS look for opportunities to more closely align professional development experiences to the needs and dispositions of individual schools in order to create long-term innovation among its member schools. This could be accomplished by modifying the Strategy Lab format to connect schools who are facing similar challenges and emphasizing the continuous and iterative nature of PDSA cycles, thus creating communities of practice to support each other long-term. The Strategy Lab might also offer additional training for school leaders in effective communication and emotional intelligence to shape school cultures that will support innovative practices. We recommend any school leader who is seeking to foster innovation give special attention to clear and purposeful communication. We also recommend that they schedule dedicated time for faculty collaboration, and that they allow faculty the opportunity to engage in professional development opportunities that are personalized for their specific needs and goals. By taking these steps to create a more supportive, collaborative, and professional culture, schools can develop the innovative dispositions that will allow them to successfully adapt to the ever-changing landscape of education.



References

- Amabile, T. (1998). How to kill creativity. *Harvard Business Review*, 76(5).
- Albert, B. (1997). Self-efficacy: The exercise of control. *WF Freeman, USA*.
- Baker, J.F. (2017). *Innovation, culture, and radical thinking*. NAIS. <https://www.nais.org/magazine/independent-school/spring-2017/innovation,-culture,-and-radical-thinking/>.
- Bartram, T., Stanton, P., Bamber, G., Leggat, S., Ballardie, R., & Gough, R. (2018). Engaging Professionals in Sustainable Workplace Innovation: Medical Doctors and Institutional Work. *British Journal of Management*, 31(1), 42–55. <https://doi.org/10.1111/1467-8551.12335>.
- Black, S., & Lynch, L. (2004). What's Driving the New Economy?: The Benefits of Workplace Innovation. *The Economic Journal (London)*, 114(493), F97–F116. <https://doi.org/10.1111/j.0013-0133.2004.00189.x>.
- Berg, Jill Harrison (2018). Leadership as Influence: In *Leading in Sync: Teacher Leaders and Principals Working Together for Student Learning* (Chapter 1): ASCD.
- Bloom, N. (2014). Fluctuations in Uncertainty. *The Journal of Economic Perspectives*, 28(2), 153–176. <https://doi.org/10.1257/jep.28.2.153>.
- Chen, C., Chen, Y., Hsu, P., & Podolski, E. (2016). Be nice to your innovators: Employee treatment and corporate innovation performance. *Journal of Corporate Finance* (Amsterdam, Netherlands), 39, 78–98. <https://doi.org/10.1016/j.jcorpfin.2016.06.001>
- Chen, J., Leung, W., & Evans, K. (2016). Are employee-friendly workplaces conducive to innovation? *Journal of Corporate Finance* (Amsterdam, Netherlands), 40, 61–79. <https://doi.org/10.1016/j.jcorpfin.2016.07.011>.
- Chen, M. (2010). *Education nation: Six leading edges of innovation in our schools*. San Francisco, CA: Jossey-Bass.
- Clegg, S., Kohlberger, M., & Pitsis, T. (2008). *Managing and organizations: An introduction to theory and practice*. Los Angeles, CA: Sage.

- Darling-Hammond, L., Wei, R.C., Andree, A., Richardson, N., & Orphanos, S. (2009). State of the Profession: Study measures status of professional development. *Professional Learning Today*, 30(2), 42-50.
- Deal, T. E., & Peterson, K. D. (1999). *Shaping school culture: The heart of leadership*. San Francisco: Jossey-Bass.
- Findlay, P., Lindsay, C., McQuarrie, J., Bennie, M., Corcoran, E., & Van Der Meer, R. (2017). Employer Choice and Job Quality: Workplace Innovation, Work Redesign, and Employee Perceptions of Job Quality in a Complex Health-Care Setting. *Work and Occupations*, 44(1), 113-136. <https://doi.org/10.1177/0730888416678038>.
- Fish, T. & Wolking, J. (2019). *Unleashing the power of demand-side thinking*. NAIS. <https://www.nais.org/magazine/independent-school/spring-2019/innovating-from-the-other-side-unleashing-the-power-of-demand-side-thinking/>.
- Fullan, M. (2000). The three stories of education reform. *Phi Delta Kappan*, 81, 581-584.
- Fullan, M. (2001). *Leading in a culture of change*. San Francisco: Jossey-Bass.
- Garud, R., Tuertscher, P., & Van De Ven, A. (2013). Perspectives on Innovation Processes, *The Academy of Management Annals*, 7(1), 775-819.
- Genlott, A. A., Grönlund, Å., & Viberg, O. (2019). Disseminating digital innovation in school-leading second-order educational change. *Education and Information Technologies*, 24(5), 3021-3039.
- Goleman, D. (2000). Leadership that gets results. *Harvard Business Review*, 78(2), 78-92.
- Goleman, D. (1998) What makes a leader? *Harvard Business Review*, 76(6), 93-102.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational evaluation and policy analysis*, 11(3), 255-274.
- Jerald, C. D. (2006). School culture. Center for Comprehensive School Reform and Improvement.

- Johnson, S. M. (2015). Will VAMS reinforce the walls of the egg-crate school?. *Educational Researcher*, 44(2), 117-126.
- Jung, D., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly*, 14(4-5), 525-544. [https://doi.org/10.1016/s1048-9843\(03\)00050-x](https://doi.org/10.1016/s1048-9843(03)00050-x).
- Langley, G.J., Moen, R.D., Nolan, K.M., Nolan, T.W., Norman, C.L., & Provost, L.P. (2009). *The improvement guide: A practical approach to enhancing organizational performance*. San Francisco, CA: Jossey-Bass.
- Little, J. W. (1990). The persistence of privacy: Autonomy and initiative in teachers' professional relations. *Teachers College Record*, 91(4), 509-536.
- Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago, IL: University of Chicago Press.
- Lubienski, C. (2003). Innovation in Education Markets: Theory and evidence on the impact of competition and choice in charter schools. *American Educational Research Journal*, 40(2), 395-443.
- Manca, C., Grijalvo, M., Palacios, M., & Kaulio, M. (2018). Collaborative workplaces for innovation in service companies: barriers and enablers for supporting new ways of working. *Service Business*, 12(3), 525-550. <https://doi.org/10.1007/s11628-017-0359-0>.
- Maslowski, R. (2006). A review of inventories for diagnosing school culture. *Journal of Educational Administration*, 44(1), 6-35.
- Molinari, F., Megliola, M., & Marsh, J. (2014). Enhancing creativity and innovation in workplaces: A living lab approach. *eChallenges e-2014 Conference Proceedings*, 1-10.
- National Association of Independent Schools. (2019, June). *NAIS Vision, Mission, and Values*. <https://www.nais.org/about/vision-mission-values/>.
- Perrin, B. (2002). How to—and how not to—evaluate innovation. *Evaluation*, 8(1), 13-28.

- Pinkus, A. (2017). *On the innovation journey*. NAIS.
<https://www.nais.org/magazine/independent-school/spring-2017/on-the-innovation-journey/>.
- Preston, C., Goldring, E., Berends, M., & Cannata, M. (2012). School innovation in district context: Comparing traditional public schools and charter schools. *Economics of Education Review*, 31(2), 318-330.
- Rafi, T. (2020). *Why corporate innovation is essential today*. Forbes.
<https://www.forbes.com/sites/forbesbusinesscouncil/2020/07/01/why-corporate-innovation-is-essential-today/?sh=9a784a95b6c5>.
- Roby, D. E. (2011). Teacher leaders impacting school culture. *Education*, 131(4), 782-790.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.
- Ruttan, Vernon & Hayami, Yujiro. (2015). Induced Innovation Theory and Agricultural Development: A Personal Account.
10.1093/acprof:osobl/9780199754359.003.0002.
- Satell, G. (2018). *Why the rewards for ambitious problem solving are about to get bigger*. Harvard Business Review. <https://hbr.org/2018/01/why-the-rewards-for-ambitious-problem-solving-are-about-to-get-bigger>.
- Schoen, L. T., & Teddlie, C. (2008). A new model of school culture: A response to a call for conceptual clarity. *School effectiveness and school improvement*, 19(2), 129-153.
- Simpson, G. W. (1990). Keeping It Alive: Elements of School Culture that Sustain Innovation. *Educational Leadership*, 47(8), 34-37.
- Thurlings, M., Evars, A., & Vermeulen, M. (2015) Toward a Model of Explaining Teachers' Innovative Behavior, *Review of Educational Research*, 85(3), 430-471.
- Tian, X., & Wang, T. (2014). Tolerance for Failure and Corporate Innovation. *The Review of Financial Studies*, 27(1), 211-255. <https://doi.org/10.1093/rfs/hhr130>.
- Tschannen-Moran, M., Hoy, A.W. & Hoy, W.K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202-248.

Tyack, D. B. (1974). *The one best system*. Cambridge, MA: Harvard University Press.

Usher, A. P. (2013). *A History of Mechanical Inventions: Revised Edition*. United States: Dover Publications.

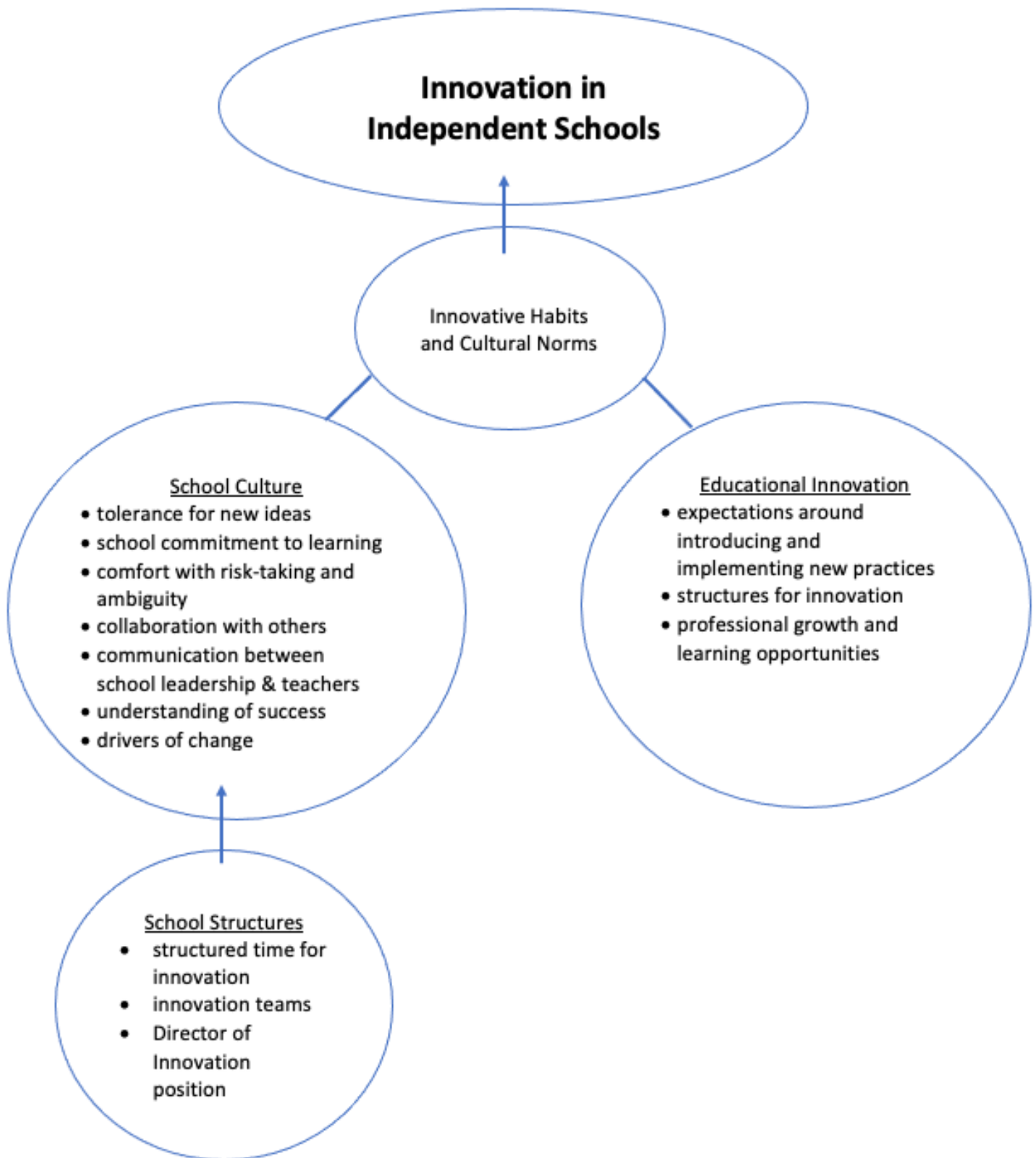
Waldron, N. L., & McLeskey, J. (2010). Establishing a collaborative school culture through comprehensive school reform. *Journal of Educational and Psychological Consultation*, 20(1), 58-74.

Washor, E. (2010, March 18). Thoughts on education. *Huffington Post*. Retrieved from http://www.huffingtonpost.com/elliott-washor/thoughts-oninnovation_b_329811.html.

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Appendix A: Conceptual Framework



Appendix B: Phase I Demographic Data

Table 1

Geographic Location

Region	All Invited Schools	Phase I Respondents
New England	16%	0%
East/Mid-Atlantic	24%	50%
Southeast	20%	10%
Southwest	7%	0%
Midwest	18%	20%
West	18%	20%

Table 2

Enrollment

Students Enrolled	All Invited Schools	Phase I Respondents
0 - 100	4%	20%
101 - 200	11%	0%
201 - 300	9%	20%
301 - 500	33%	40%
501 - 700	27%	0%
701 or more	20%	20%

Table 3*Grade Levels Served*

Grade Levels	All Invited Schools	Phase I Respondents
Elementary only (up to grade 8)	33%	40%
Secondary only (grades 9 and above)	11%	10%
Elementary and secondary	56%	50%

Table 4*Residential/Day Student Population*

Student Population	All Invited Schools	Phase I Respondents
All residential students	0%	0%
All day students	93%	90%
Some residential and some day students	7%	10%

Table 5*Coeducational/Single-Sex Student Population*

Student Population	All Invited Schools	Phase I Respondents
Coeducational	89%	80%
Single-sex (all girls)	9%	10%
Single-sex (all boys)	2%	10%

Appendix C: Phase II School-Level Demographic Data

Table 1

Geographic Location

Region	All Invited Schools	Respondents		
		Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
New England	7%	4%	18%	0%
East/Mid-Atlantic	21%	8%	27%	0%
Southeast	17%	29%	9%	35%
Southwest	7%	0%	7%	4%
Midwest	12%	2%	20%	18%
West	22%	58%	20%	41%

Table 2

Enrollment

Enrollment	All Invited Schools	Respondents		
		Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
0 - 100	2%	19%	0%	12%
101 - 300	24%	48%	35%	18%
301 - 500	29%	29%	22%	47%
501 - 700	24%	2%	24%	12%
701 or more	19%	2%	20%	12%

Table 3*Grade Levels Served*

Grade Levels	All Invited Schools	Respondents		
		Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
Elementary only (up to grade 8)	34%	17%	13%	18%
Secondary only (grades 9 and above)	16%	15%	13%	18%
Elementary and secondary	51%	67%	74%	65%

Table 4*Residential/Day Student Population*

Student Population	All Invited Schools	Respondents		
		Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
All residential students	3%	25%	11%	12%
All day students	91%	73%	67%	71%
Some residential and some day students	6%	2%	22%	18%

Table 5*Coeducational/Single-Sex Student Population*

Student Population	All Invited Schools	Respondents		
		Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
Coeducational	91%	98%	93%	100%
Single-sex (all girls)	5%	2%	7%	0%
Single-sex (all boys)	3%	0%	0%	0%

Table 6*Presence of a Director of Innovation*

Does school have a director of innovation?	Respondents		
	Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
Yes	33%	20%	18%
No	60%	65%	71%
I don't know	8%	15%	12%

Note: This data was not available prior to this survey, so we cannot report percentages of all invited schools.

Appendix D: Phase II Individual-Level Demographic Data

Table 1

Professional Role

Primary Role at Current School	Respondents		
	Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
Teacher	52%	73%	81%
Administrator	33%	24%	13%
Other	15%	2%	6%

Table 2

Years of Experience

Years of Teaching Experience	Respondents		
	Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
1 year	2%	0%	0%
2 - 4 years	7%	0%	6%
5 - 15 years	29%	28%	25%
16 or more years	62%	71%	69%

Table 3*Time at Current School*

Years at Current School	Respondents		
	Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
1 year	13%	2%	7%
2 - 4 years	35%	20%	29%
5 - 9 years	29%	33%	31%
10 or more years	23%	46%	33%

Table 4*Level of Education*

Highest Level of Education Completed	Respondents		
	Strategy Lab Schools	Non-Strategy Lab Schools	School Unknown
High School	2%	0%	0%
Some college	0%	0%	0%
Associate's degree	2%	0%	0%
Bachelor's degree	23%	11%	27%
Master's or professional degree	58%	72%	60%
Doctoral degree	15%	17%	13%
Other	0%	0%	0%

Appendix E: Phase II Survey Items and Related Analyses

Items Included in the School Culture Survey

1. We talk in concrete and precise terms about the things we're trying in our teaching.
2. We have productive observations of one another.
3. We plan lessons and make materials together.
4. We teach each other things we know about teaching.
5. We ask for and give assistance for problems with students and teaching issues.
6. Teachers and administrators encourage me and back me up when I try new things.
7. We are always searching for new and improved ways to teach.
8. Teacher evaluations let me know clearly how I stand in relation to expectations.
9. There is a close relationship in this school between job performance and recognition.
10. Meetings are worthwhile and productive.
11. Priorities for use of resources such as money and time show me that the development of staff is a top priority.
12. I feel trusted to make instructional decisions on my own.
13. Our decision-making processes are fair and legitimate.
14. I am listened to and can influence school policy.
15. People speak honestly but respectfully to one another.
16. Conflicts between individuals are resolved quickly and intelligently.
17. Staff members show initiative in developing new ideas for the school.
18. In this school, we feel responsible collectively for our students.
19. We acknowledge our imperfections readily and are always striving to get better.
20. We have an environment that encourages thoughtful analysis of our teaching and curriculum decisions.
21. Enough time is spent clarifying and understanding the goals of our school year.
22. We know what we stand for as a school.
23. As a school, we can say what we want the big-picture outcomes to be for our students.
24. Our programs support our core values.

Note - Items rated on the following scale: almost never, less often than not, about half the time, more often than not, almost always

Items Included in the Commitment to Innovation Scale

1. Faculty and administrators at my school trust each other when implementing new ideas.
2. There is clear communication between faculty and administrators when implementing new ideas.
3. Teachers at my school are interested in innovation.
4. School leaders follow rules or protocols in advancing innovation work.
5. People from different departments or areas work together on innovative initiatives.
6. People at my school connect with external organizations to glean new ideas.
7. My school dedicates uncommitted resources to innovation.

8. Innovation leadership is shared among administrators and faculty. (Innovation leadership being how a school collects novel ideas, determines which ones to prototype, and assesses their impact.)

Note - Items rated on the following scale: not at all, to a small extent, to some extent, to a great extent

Items Excluded from the Commitment to Innovation Scale

1. I feel comfortable with ambiguity.
2. I feel comfortable taking risks.
3. I am able to quickly pivot in a new direction, if needed, when implementing an initiative.

Note - Items rated on the following scale: strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, strongly agree

Individual Demographic Items

1. What is your primary role at your current school?
Teacher, administrator, other
2. How many years have you been teaching full time (in any school)?
This is my first year teaching; this is my second, third or fourth year teaching; I have been teaching for 5-15 years; I have been teaching for 16 or more years
3. How long have you been an employee at your current school?
This is my first year here; this is my second, third, or fourth year here; I have been here for 5-9 years; I have been here for 10 years or more
4. What grade level(s) do you currently serve?
Pre-kindergarten, kindergarten through 4th grade, 5th grade through 8th grade, 9th grade through 12th grade
5. What is the highest level of education that you have completed?
High school, some college, Associate's degree, Bachelor's degree, Master's or professional degree, Doctoral degree, other

School-Level Demographic Items

1. Where is your school located?
New England, East/Mid-Atlantic, Southeast, Southwest, Midwest, West
2. How many students are enrolled at your school?
0-100, 101-300, 301-500, 501-700, 701 or more
3. What grades does your school serve?
Elementary only (up to grade 8), secondary only (grades 9 and above), elementary and secondary
4. Which best describes your school population?

- All residential students, all day students, some residential and some day students
5. Which best describes your school?
Coeducation, single-sex (all girls), single-sex (all boys)
 6. Does your school have a staff member whose role includes promoting innovation (e.g., a Director of Innovation)?
Yes, no, I don't know
 7. What is the name of your school?

Principal Components Analysis of the School Culture Survey

Components

	Component 1	Component 2	Component 3
Eigenvalue	11.80	1.52	1.50
Variance explained	49.18%	6.34%	6.22%
Cumulative variance explained	49.18%	55.52%	61.74%

Survey Items Included in Component 2: Professional Treatment by Administration

Item	Eigenvector
Meetings are worthwhile and productive.	.29
Priorities for use of resources such as money and time show me that the development of staff is a top priority.	.28
I feel trusted to make instructional decisions on my own.	.24
Our decision-making processes are fair and legitimate.	.32
I am listened to and can influence school policy.	.42

Survey Items Included in Component 3: Collaboration

Item	Eigenvector
People speak honestly but respectfully to one another.	.38
Conflicts between individuals are resolved quickly and intelligently.	.40
In this school, we feel responsible collectively for our students.	.40

Survey Items Included in Component 1: Teacher Professionalism and Goal Setting

Item	Eigenvector
We talk in concrete and precise terms about the things we're trying in our teaching.	.20
We have productive observations of one another.	.19
We plan lessons and make materials together.	.19
We teach each other things we know about teaching.	.22
We ask for and give assistance for problems with students and teaching issues.	.20
Teachers and administrators encourage me and back me up when I try new things.	.19
We are always searching for new and improved ways to teach.	.22
Teacher evaluations let me know clearly how I stand in relation to expectations.	.19
There is a close relationship in this school between job performance and recognition.	.22
Staff members show initiative in developing new ideas for the school.	.21
We acknowledge our imperfections readily and are always striving to get better.	.22
We have an environment that encourages thoughtful analysis of our teaching and curriculum decisions.	.25
Enough time is spent clarifying and understanding the goals of our school year.	.23
We know what we stand for as a school.	.21
As a school, we can say what we want the big-picture outcomes to be for our students.	.18
Our programs support our core values.	.23

Appendix F: Interview Protocols

Teacher Interview Protocol

Culture

- How would you describe the culture at this school?
- How do you spend your time outside of school?
 - Do teachers interact outside of school hours typically?
 - With admin?
- What does a typical day look like here?
- What are expectations for collaborative work at this school? Do teachers often work together for instruction?
- How is information shared?
 - Do you think that it's frequent enough?
 - Adequately transparent?
- What does success look like here?
- Do teachers have the opportunity to participate in any leadership roles?
- How is your day usually divided between teaching, independent planning time, and collaborative time?
- What do you think drives change at this school?
 - How are new teaching ideas received?

Innovation

- What does innovation mean to you?
- Would you consider your school innovative?
- What are common expectations at this school related to new and creative instructional practices?
- What innovation in your school has been most meaningful and why?
- Are there structures in place at your school to foster innovation? What are they?
- How do teachers at your school learn/grow in their professional practice?

Administrator Interview Protocol

Culture

- How do you decide what goals teachers have during the school year?
- Do teachers spend time together outside of school?
- How much independent planning and collaborative planning time do teachers have? Would you say they should have more, or they have the right amount?
- Do teachers have the opportunity to participate in any leadership roles? Do they take advantage of this opportunity?
- How are updates or information shared with teachers (emails, meetings)? How often?
- How does this school support teacher morale?
- How often do teachers meet with administrators?
- What does success look like here?
- What do you think drives change at this school?
 - How are new ideas received?
 - From a teacher?

Innovation

- What does innovation mean to you?
- Would you consider your school innovative?
- What innovation in your school has been most meaningful and why?
- Are there structures in place at your school to foster innovation? What are they?

Appendix G: Figures

Figure 1: Frequency Distribution of School Culture Ratings

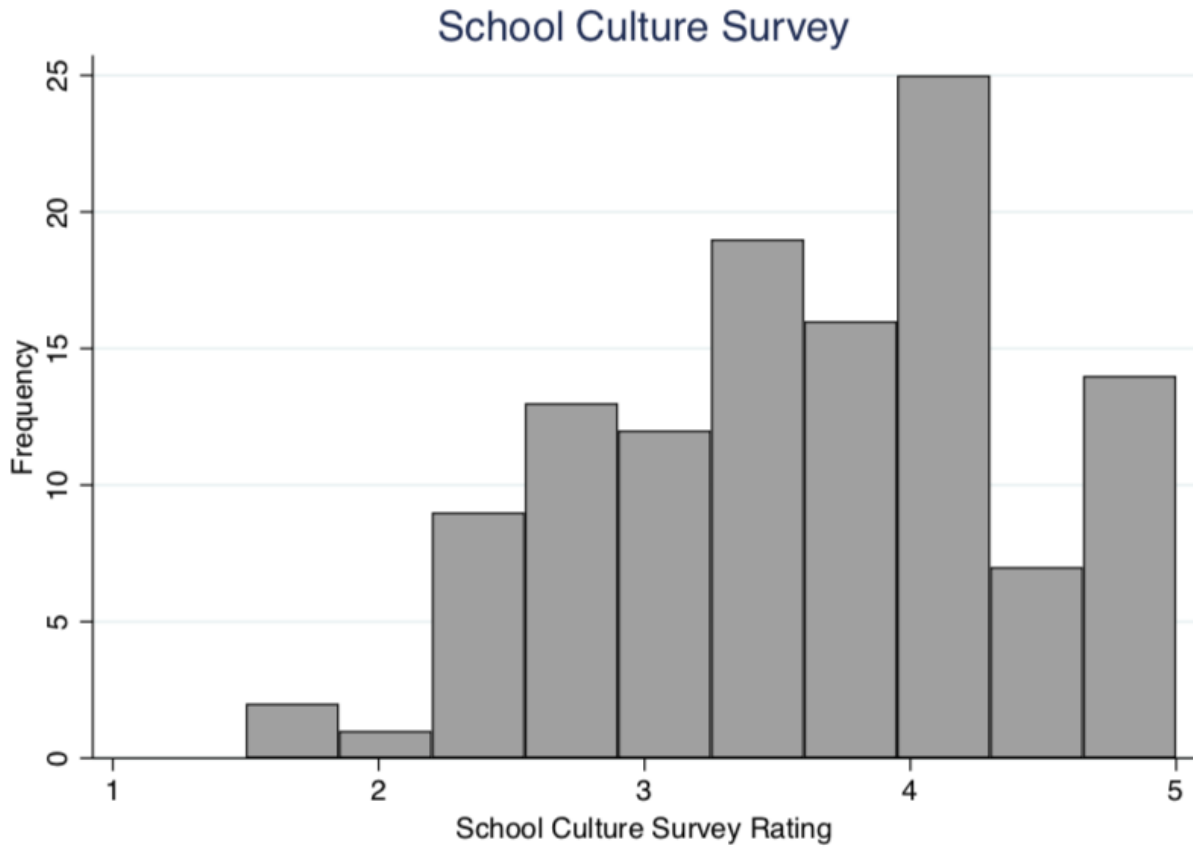


Figure 2: Frequency Distribution of Commitment to Innovation Ratings

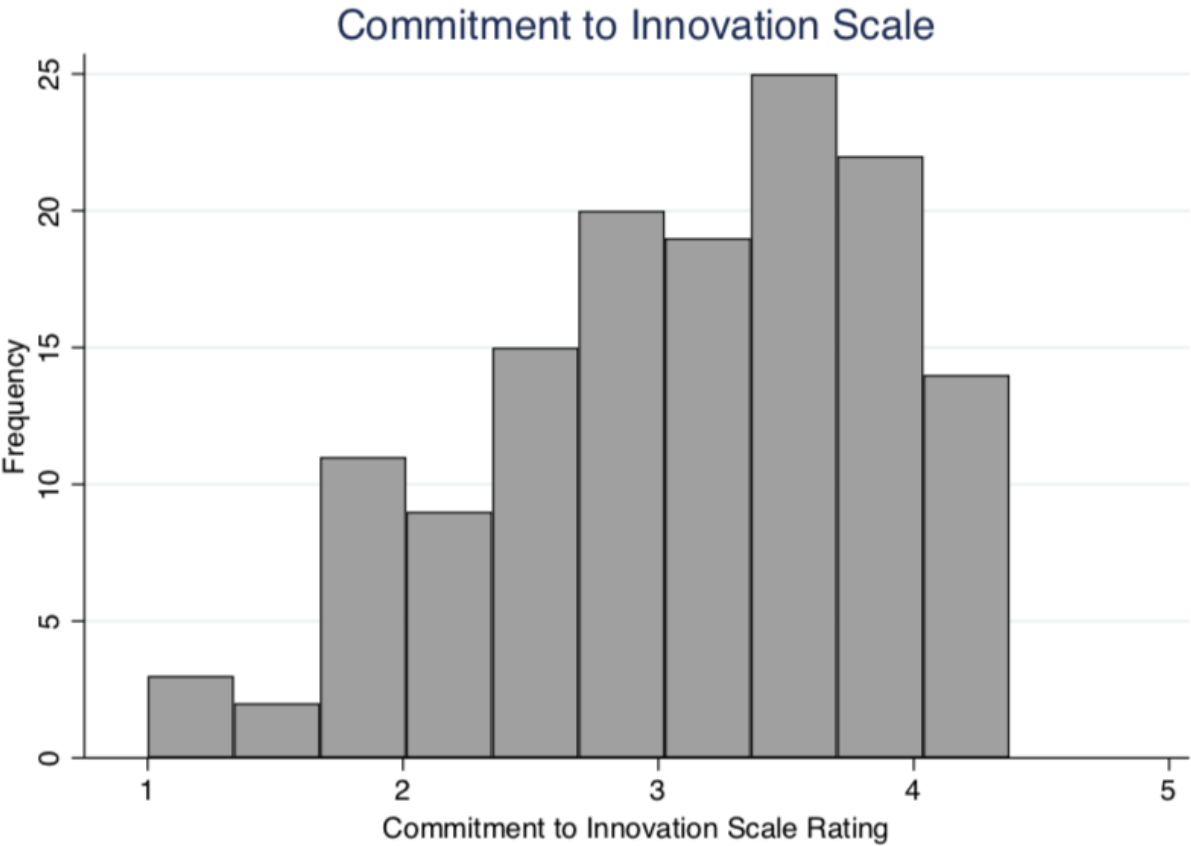
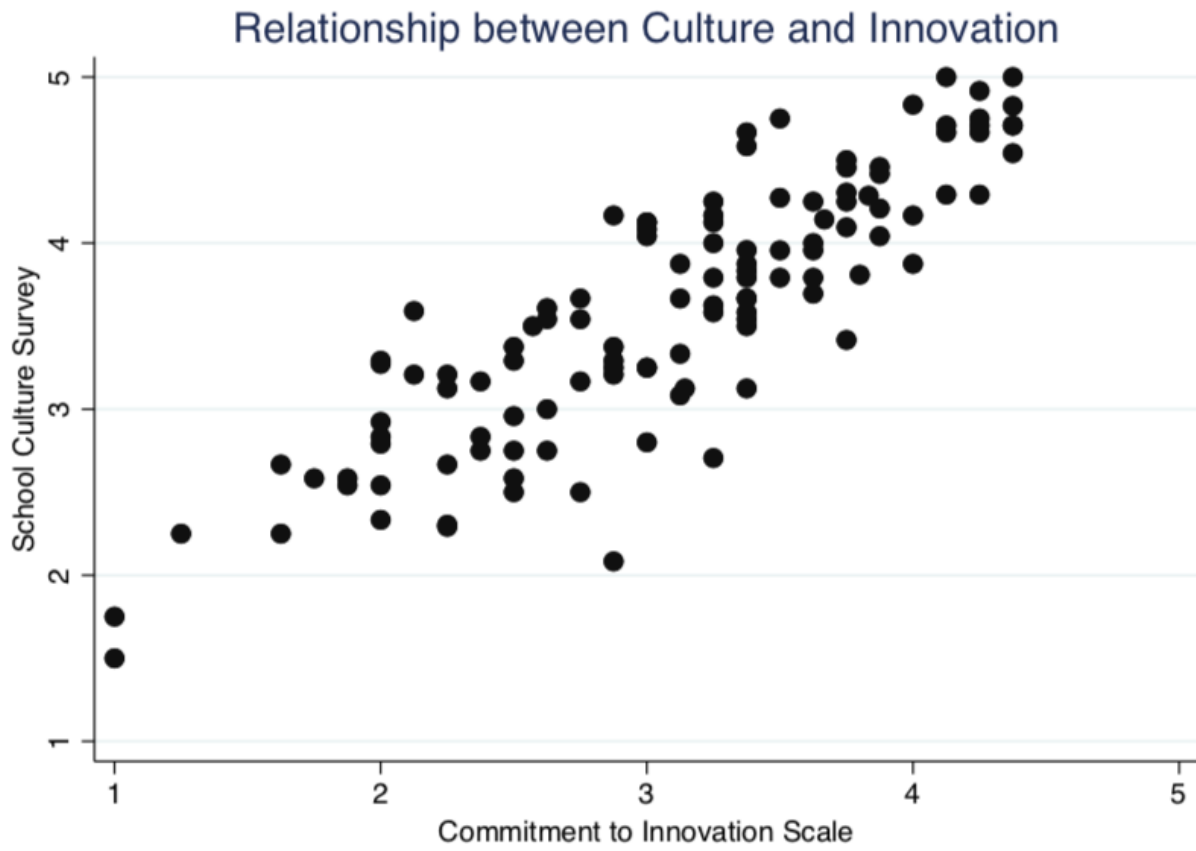


Figure 3: Relationship Between School Culture and Innovation



Appendix H: Effects of Strategy Lab Participation

Table 1

Commitment to Innovation Ratings by Strategy Lab Participation Status

Strategy Lab Participation Status	Commitment to Innovation Scale	
	M	SD
Known Participants	3.24	.84
Known Non-Participants	2.97	.72
School Unknown	3.10	.68

Table 2

School Culture Survey Ratings by Strategy Lab Participation Status

Strategy Lab Participation Status	School Culture Survey	
	M	SD
Known Participants	3.75	.83
Known Non-Participants	3.59	.70
School Unknown	3.29	.74

Table 3*Regression Analysis*

Predictor	β	t	p	F	df	p	R^2
School Culture Survey	.89	16.09	.00				
Strategy Lab Participation	-.05	-.80	.43				
Professional Role	-.03	-.41	.68				
Years of Experience	.03	.34	.73				
Time at Current School	.06	1.21	.23				
Level of Education	-.02	-.28	.78				
School Location	-.02	-.72	.48				
School Enrollment	-.01	-.31	.76				
Grades Served	-.07	-.99	.32				
Residential/Day	.04	.43	.67				
Coed/Single-Sex	.04	.19	.85				
Presence of Director of Innovation	-.02	-.30	.76				
				24.31	12, 89	.00	.77

Appendix I: School-Level Demographic Differences in Commitment to Innovation and School Culture

Table 1

Geographic Location

Region	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
New England	3.19	.34	3.80	.48
East/Mid-Atlantic	2.98	.71	3.57	.58
Southeast	3.34	.70	3.72	.79
Southwest	2.88	.90	3.07	.73
Midwest	2.83	.74	3.37	.72
West	3.06	.92	3.67	.87

Table 2

Enrollment

Enrollment	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
0 - 100	2.77	.98	3.42	.80
101 - 300	3.10	.79	3.63	.81
301 - 500	3.34	.76	3.74	.79
501 - 700	2.84	.76	3.59	.73
701 or more	3.03	.65	3.58	.68

Table 3*Grade Levels Served*

Grade Levels	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
Elementary only (up to grade 8)	3.40	.93	3.84	.99
Secondary only (grades 9 and above)	2.71	.65	3.28	.54
Elementary and secondary	3.11	.76	3.66	.74

Table 4*Residential/Day Student Population*

Student Population	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
All residential students	2.98	.79	3.63	.69
All day students	3.16	.83	3.66	.83
Some residential and some day students	2.84	.54	3.46	.56

Table 5*Coeducational/Single-Sex Student Population*

School Population	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
Coeducational	3.10	.80	3.64	.78
Single-sex (all girls)	2.97	.82	3.35	.58

Table 6*Presence of a Director of Innovation*

Does school have a director of innovation?	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
Yes	3.21	.75	3.70	.71
No	3.01	.84	3.59	.82
I don't know	3.33	.55	3.71	.64

Appendix J: Individual-Level Demographic Differences in Commitment to Innovation and School Culture

Table 1

Professional Role

Primary Role at Current School	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
Teacher	3.10	.86	3.59	.85
Administrator	3.17	.67	3.75	.59
Other	3.00	.80	3.57	.73

Table 2

Years of Experience

Years of Teaching Experience	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
1 year	2.50	.00	2.75	.00
2 - 4 years	2.56	1.36	3.61	1.35
5 - 15 years	3.07	.69	3.52	.61
16 or more years	3.11	.81	3.65	.80

Table 3*Time at Current School*

Years at Current School	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
1 year	3.29	.79	3.80	.79
2 - 4 years	2.97	.78	3.58	.79
5 - 9 years	3.02	.82	3.58	.76
10 or more years	3.22	.81	3.68	.81

Table 4*Level of Education*

Highest Level of Education Completed	Commitment to Innovation		School Culture Survey	
	M	SD	M	SD
High School	2.25	.00	3.13	.00
Associate's degree	3.88	.00	4.21	.00
Bachelor's degree	3.17	.84	3.71	.79
Master's or professional degree	3.15	.78	3.67	.78
Doctoral degree	2.76	.81	3.36	.79