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Institutional Factors in iPad Rollout, Adoption, and Implementation: Isomorphism and the Case of the Los Angeles Unified School District's iPad Initiative

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Abstract

School districts are increasingly turning to iPads as a mechanism to increase student engagement and achievement and innovate teaching and learning. Research shows this is a feasible, albeit challenging goal. In this article, we examine the case of a large-scale iPad rollout in the Los Angeles Unified School District in 2013. Using institutional isomorphism (DiMaggio & Powell, 1983) as our conceptual framework, we find institutional features, like policy, the individuals and groups who make decisions, and how those decisions are communicated and supported impact the success of major change initiatives, like 1:1 iPad programs. We argue including institutional lenses in the research on rollout, adoption, and implementation of iPad and technology programs will help schools and districts to make better decisions about how to build large-scale change initiatives.

Introduction

Scholars and practitioners agree that initiatives introducing iPads into schools create great possibility for learning (Chou, Block, & Jesness, 2012). These include, but are not limited to, individualized instruction, improved equity and access to quality information for students, and increased student voice and choice in their learning (McKnight et al., 2016; Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010; Smith & Santori, 2015). And yet, despite this potential, the goal of full implementation of such initiatives remains somewhat elusive with many failing to take hold. This failure often lies in difficulties in rollout (e.g., policy development and communication), adoption, and implementation. Devices such as iPads, and their accompanying software often require pedagogical change that districts, schools, and teachers have difficulty implementing (Collins & Halverson, 2010; Hutchison, Beschorner, & Schmidt-Crawford, 2012) or may be resistant to making (Ponticell, 2003; Russell, Bebell, O'Dwyer, & O'Connor, 2003).

In this way, we might understand iPads, like any technology, as a tool organizations introduce (i.e., rollout) and individuals either pick up or not (i.e., adoption) and then either use effectively or not (i.e., implementation). In the context of schools therefore, we can then see that, as true for other curricular or evaluative tools introduced to improve teaching and learning, iPads are also likely to require supportive infrastructure to ensure effective implementation (Hopkins & Woulfin, 2015). For example, such infrastructure may include expert coaching to support teachers to first pick up, and then, integrate iPads in meaningful and productive ways to make real change (Harris & Hofer, 2009). However, technology integration, preparation, and dissemination is frequently initiated and designed by national, state, and local governments in a top-down manner (Lawless & Pellegrino, 2007) and lacks structural supports to encourage deep pedagogical change. When these initiatives then fail to revolutionize education in these contexts, they are often discarded as failed interventions.

Shifting now to consider the research regarding implementation of 1:1 iPad programs, it is worth noting that this is an emergent area of research with calls from the community for greater focus and work in this area (Harper & Milman, 2016, Hutchison et al., 2012; McClanahan, Williams, Kennedy, & Tate, 2012; Smith & Santori, 2015). Programs with one device per student are considered 1:1 programs. Of the research on iPad programs, and technology 1:1 programs more generally, much focuses on implementation and adoption rather than rollout. Additionally, the focus tends to be on individual actors and their choices and behaviors with regards to instructional practices when using these tools (e.g., Carr, 2012; Chou et al., 2012; Dunleavy, Dexter, & Heinecke, 2007; Ditzler, Hong, & Strudler, 2016; McClanahan et al., 2012).

Frequently, this same research is also relatively narrow in scope, reporting on idiosyncratic interventions within idiosyncratic curricula. While the results of many of these studies show that the interventions produce positive results for student achievement and engagement, they also demonstrate a need for a complex approach to bringing iPads into the classroom. Ertmer and Ottenbreit-Leftwich (2010), for example, argue that teachers effective use of technology requires shifts not only to their knowledge and skills but also to harder to change belief systems, self-efficacy, and the larger school culture in which they are situated. Similarly, research regarding teachers' adoption of policies more broadly suggests a need to support teachers through a process of collective sensemaking in which they challenge existing assumptions and beliefs regarding current practice as a necessary first step towards meaningful change (e.g., Coburn, 2001; Spillane, Reiser, & Reimer, 2002). Together, and given prior work highlighting the difficulty in substantially reforming schools (e.g., Hemelt, 2011; Preston et al., 2012; Weiner, 2014) and their cultures (Datnow, Park, & Kennedy-Lewis., 2013; Imants, Wubbels, & Vermunt, 2013), current research on technology integration makes clear that simply using technology is not enough to create successful learning outcomes (Mishra & Koehler, 2006). Rather, much of the success of such interventions sits at the intersection of individual implementers and the support they receive to engage with these interventions (Chou et al., 2012; Ertmer & Ottenbreit-Leftwich, 2010).

However, while current research has helped to identify specific organizational and individual level factors impacting successful technology integration in the classroom, less has been offered to understand how schools' institutional context (e.g., federal and state policies, district structures, professional culture, etc.) are organized in ways to facilitate the successful adoption and implementation of iPad initiatives. Using the framework of institutional isomorphism (DiMaggio & Powell, 1983), this paper examines how institutional features including local and national policies, organizational decision-making, communication, and support mechanisms can serve as major determinants in how iPad initiatives can take hold and fulfill their promise to create large-scale improvement.

Specifically, in this paper we examine the iPad rollout and adoption in the Los Angeles Unified School District (LAUSD) in 2013, the second largest school district in the United States, to investigate how innovations, even those as promising as iPads, may not translate into school and instructional change and may even push them to stay the same. To do so, we first provide some context of the literature on iPads, 1:1 technology programs, and technology in schools more generally as well as some of what we know about why effective integration is difficult. We then explain DiMaggio and Powell's (1983) theory of institutional isomorphism and present the case of LAUSD and its iPad rollout. Next, we apply the theory to the case demonstrating how each mechanism of isomorphism applies and discuss the gaps institutional isomorphism reveals in the conception and implementation of the iPad rollout. We conclude by offering implications that may help others avoid the failures of LAUSD and allow iPads to make meaningful change in schools. Together, our findings provide insights into the usefulness of an institutional perspective in considering how iPads might better meet their promise today and tomorrow.

Literature Review

In this section, we use the literature to help contextualize the case of the iPad program in LAUSD in the larger trends of both research and practice. First, we examine why technology, specifically iPads, can be beneficial in schools. Next, we look at the elements that can potentially make these programs successful. And last, we briefly consider literature on educational change to make the case that it is useful to apply institutional lenses to technology integration in schools. As we argue, doing so will offer another tool with which to understand the contexts, barriers, and gateways to successful technology programs including iPads in schools.

Why introduce iPads into schools?

iPads offer a variety of positive contributions to schools, teachers and students. First, due to their comparative cost, size, and capabilities, iPads are increasingly being used in 1:1 technology programs for students instead of laptops (Ditzler et al. 2016; Murray & Olcese, 2011; Powell, 2014). Additionally, iPads are often preferred because of their ability to provide "unique capabilities that were unparalleled prior to its introduction" (Hutchison et al., 2012, p. 15). The research supports this position as though 1:1 programs can be a costly endeavor for schools and districts, they have great potential in fostering better learning, better assessment, and higher student achievement (Dunleavy et al., 2007; Harper & Milman, 2016). Specifically, 1:1 programs are shown to enhance student achievement in writing and problem solving (e.g., Lowther, Ross, & Morrison, 2003),

reading (e.g., McClanahan et al., 2012; Shapley et al., 2010), and math (e.g., Rosen & Manny-Ikan, 2011). 1:1 programs can also decrease achievement gaps between socio-economic groups and learning abilities (Harper & Milman, 2016:, McClanahan et al., 2012).

Perhaps one reason for these promising outcomes is the power of iPads and other devices to positively impact student learning. For example, multiple studies remark on the possibility for iPads and other devices to increase students' engagement with the content and demonstrations of their learning (Chou et al., 2012; Ditzler et al., 2016; Harper & Milman, 2016; McClanahan et al., 2012). Chou, Block, and Jesness (2012) found that 1:1 iPad programs lead to improved information literacy and student centered learning. Similarly, technology presents opportunities for students to develop new literacies of communication and understanding in a global world (Leu, Kinzer, Coiro, & Cammack, 2004).

Beyond enhancing students' relationship with and orientation towards their learning, integrating iPads can also change how teachers and students engage in learning together. Research makes it clear that the structures and culture of the classroom are affected by integrating iPads into teaching and learning (Liu et al., 2014). For example, in their exploration of the ways teachers use technology to shift student learning, McKnight et al. (2016) find that technology changed the way teachers spend their time, from more logistical work and whole class teaching to more individualized instruction. They describe that, "teachers observed that technology enabled them to spend more time engaged in side-by-side coaching, one-on-one support, and providing immediate feedback to the students in the classroom, all of which are correlated with positive learning outcomes" (p. 204).

However, it is also important to mention that not all results from such studies are solely positive. For example, some studies question the effectiveness of iPad programs, showing no impact of technology on student achievement (Carr, 2012; Hur & Oh, 2012), and others highlight positive gains in science, but no gains in math (Dunleavy & Heinecke, 2007). Liu et al. (2014) found that there is a significant skew of the research on learning with tablets towards the natural sciences, demonstrating a need for more information on the impact of iPads on different disciplines. Additionally, research shows that while student engagement spikes during the initial implementation of a 1:1 program, engagement can be hard to sustain (Harper & Milman, 2016) and can result in distractions (Ditzler et al., 2016), further implying the importance of meaningful sustained curricular integration. Clearly, iPad integration appears to be a promising practice that requires further examination and study regarding both implementation and impact.

What makes iPad and technology programs successful?

Building on the points above, and recognizing further research is needed before claiming unequivocally that iPads support enhanced teaching and learning, it seems worthwhile to consider whether there may be factors outside of the technology itself that can enhance the effectiveness of iPad programs. First, the research points to the importance of understanding the relationship between curriculum, pedagogy and technology in understanding the success of technology programs. In their seminal work, Mishra and Koehler (2006) offer the technological, pedagogical, and content knowledge (TPACK) framework for understanding the relationships between content, pedagogy, and technology. Mishra and Koehler build on Shulman's (1986) framework of pedagogical content knowledge (PCK) adding the element of technology as an integral part of the modern classroom. They explain "quality teaching requires developing a nuanced understanding of the complex relationships between technology, content, and pedagogy, and using this understanding to develop appropriate, context-specific strategies and representations" (Mishra & Koehler, 2006, p. 1029). Teaching and learning lie at the intersection of technology, pedagogy, and content and are impacted by the ways teachers understand and interrogate these spaces.

Hutchison and Reinking (2011) expand on the TPACK framework and describe the difference between technological integration and curricular integration. Technological integration frames the skills needed to use iPads and other technology as separate from the curriculum, requiring they be added on top of existing teaching and learning structures and behaviors in the classroom. Curricular integration frames technological skill as "integral to the curriculum" and allows for teachers and leaders to reexamine pedagogy (p. 314). Thus, it is possible that a school's lackluster rollout of an iPad initiative may be at least partially due to a narrow focus on technological integration at the cost of curricular integration or the professional development and curricular standards necessary to support this integration (Harris & Hofer, 2009). In contrast, studies highlighting successful implementation of such initiatives and resultant increased student achievement, link this success to changes in teachers' pedagogical approach and student-teacher relationships (Harper & Milman, 2016). In this

way, curriculum itself can be a boundary or a gateway to tech integration (Corlu, Capraro & Capraro, 2014; Ertmer & Ottenbreit-Leftwich, 2010).

Research also shows that creating curriculum that leverages the iPad fully and selecting applications (apps) appropriately are key elements to successfully using it for teaching and learning (Castek & Beach, 2013; Ditzler et al., 2016; Powell, 2014). And still, as Murray and Olcese (2011) concluded in examining the iPad app market, while the hardware of the iPad offers revolutionary potential, the apps and the ways schools use them do not. This suggests that there may be factors related to the larger edtech marketplace impacting rollout, adoption, and implementation of iPad initiatives.

Individual teachers' understanding and comfort with the tool matters as well. Harper and Milman (2016) explain that using technology that is "appropriate for the content" and fully reconsidering pedagogy in response to the ways "technology alters students' learning experiences" are important features to successful technology implementation (p. 140). However, Ditzler et al. (2016) found that the ways iPads were used in schools were highly dependent on the individual teacher's comfort level with the device and the extent to which the teacher used the device in their classroom. Learning with digital tools requires different sets of skills and techniques that teachers must be aware of and adjust their curriculum accordingly (Hutchison et al., 2012).

Finally, as discussed earlier, iPads change the spaces and the mechanisms students use to learn and therefore, their success may also be dependent on the degree these spaces and mechanisms are flexible. Collins and Halverson (2010) explain these needs in this way, "We need our school leaders and teachers to understand how learning technologies work and how they change the basic interactions of teachers and learners" (p. 26). This assertion, that the introduction of technology requires fundamental shifts in how learning and teaching are constructed, is an important foundation to changing curriculum, pedagogy, and professional development. Moreover, for our purposes here, it again brings into question whether and to what degree organizational and institutional structures are being addressed and shifted as these introductions take place.

What other factors may impact technology integration?

Looking across the current literature, it is clear that using technology in schools is complex, multifaceted, and offers mixed results. It is also clear that full integration of technology, and in this case iPads, into teachers' and students' daily practice requires far more than simply introducing the tool. Rather, as Ertmer and Ottenbreit-Leftwich (2010) point out, such integration calls for major shifts in beliefs and behaviors at the individual and organizational level. And yet, for teachers with similar backgrounds (e.g., traditionally white, middle-class and female) (Feistritzer, Griffin, & Linnajarvi, 2011; Grissom, Loeb, & Master, 2013) who are educated and socialized in particular ways that tend towards conservatism (Hargreaves, 2010) and often lack deep exposure to how to integrate technology in instruction (Russell et al., 2003), such shifts may be difficult. Indeed, research suggests that real pedagogical change is hard (Weiner & Higgins, 2017) and requires leaders creating conditions for such work to take place (Jacobson, Johnson, Ylimaki, & Giles, 2005; Leithwood, Harris, & Hopkins, 2008). This includes creating meaningful opportunities for teachers to meet together and collectively make sense of new initiatives and how to implement them (Coburn, 2001; Spillane, Reiser, & Reimer, 2002). It also requires cultivating a positive school culture in which teachers collaborate with one another, and feel supported and respected in these efforts (see Harris et al., 2015 for review). Positive change in schools, including implementation of new tools, is also dependent on teachers trusting their colleagues and the administration (Bryk et al., 2010; Ronfeldt et al., 2013) and believing their school is a safe space to speak up, take risks and learn (Edmondson et al., 2016; Le Fevre, 2014).

Complicating efforts to build such a culture and corresponding educational infrastructure for continuous improvement (Peurach & Neumerski, 2015) is that they occur within a larger institutional environment filled with uncertainty (Higgins, Weiner & Young, 2012). For example, Elmore (2005) and others (Datnow et al. 2013; Knapp & Feldman, 2012) have argued that external accountability pressures can directly and negatively impact change efforts and school culture. At the same time, institutional features such as traditional professional norms valuing egalitarianism, autonomy and seniority (Donaldson et al., 2008; Imants, et al., 2013) and bureaucratic structures frequently pushing new and sometimes conflicting policies onto schools (Buchanan, 2015; Day, Elliot, & Kington, 2005) can permeate school culture and practices making change even more difficult. Given the power of institutional realities to shape organizational and individual receptivity to change, and the need for such change to support technology integration, it seems important to consider how institutional conditions may impact efforts focused on iPad integration as a step towards ensuring their success (see Puttick,

Drayton & Karp, 2015 for some recent work on this topic). This research takes up this issue directly and utilizing the lens of institutional isomorphism explores a large-scale iPad rollout in LAUSD.

Theoretical Framework

To better understand the institutional context in which iPad rollout, adoption, and implementation succeeds or fails and specifically why this type of innovation may be particularly difficult in the context of schools and school systems, we used DiMaggio and Powell's (1983) work on institutional isomorphism. DiMaggio and Powell (1983) posit that over time, institutional forces move organizations to behave similarly, making true innovation and change less possible. As they explain, "individual efforts to deal rationally with uncertainty and constraint often lead, in the aggregate, to homogeneity in structure, culture, and output" (p.147). They go on to describe three mechanisms that facilitate this process: coercive, mimetic, and normative isomorphism. These mechanisms all describe how institutions interact with their environment in ways that result in homogeneous responses. We define each in turn below. Coercive isomorphism describes the relationship between an organization and the expectations and resources it receives. DiMaggio and Powell (1983) explain,

> Coercive isomorphism results from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations within which organizations function. Such pressures may be felt as force, as persuasion, or as invitations to join in collusion (p.150).

This top-down pressure can result in similar results across institutions. Ashworth, Boyne, and Delbridge (2007) further this description by explaining the differences between convergence and compliance within this form of isomorphic behavior. They explain,

> The term compliance suggests that, over time, organizations are moving in the direction that is consistent with isomorphic pressures, for example toward a new model of public service management that is 'required' by prevailing institutional norms and the 'target' organizational characteristic that are expected to change. The term convergence refers to the extent to which all organizations in a field resemble each other more closely over time. This can happen without compliance (Ashworth at el., 2007, p. 169).

This important distinction helps us understand the different ways public organizations may respond to coercive pressures. In contrast, mimetic isomorphism describes the relationship between an organization and its peer organizations in uncertain institutional environments. Rather than searching for efficiency, DiMaggio and Powell (1983) argue organizations search for other organizations' successful solutions, whether those solutions improve the adopting organization's work or not. This is described in the following way, "Uncertainty is also a powerful force that encourages imitation. When organizational technologies are poorly understood, when goals are ambiguous, or when the environment creates symbolic uncertainty, organizations may model themselves on other organizations" (p. 151). In a resource-thin environment including a lack of exemplars or research on best practice, for example as currently true with iPads, looking to others' solutions of how to do this work can be attractive even when these solutions do not respond directly to the problems of the organization adopting these practices.

Finally, normative isomorphism stems from professionalization. DiMaggio and Powell (1983) explain that professions create norms communicated through professional organizations and events, training, and pre-service programs. Professionals then bring those norms to different organizations which subsequently look increasingly similar. Professionals can inspire institutions to adopt structures that are familiar and allow for smooth transfer between institutions. When individuals enter a field for which they have not participated in the normalizing processes, socialization occurs to recreate those normalizing processes (DiMaggio & Powell, 1983). Taken together, these three processes, coercive, mimetic, and normative, suggest that, while individuals may not be intentionally creating similar organizations, the limitation of choices pushes institutions towards homogeneity (DiMaggio & Powell, 1983).

Since this early work on institutional isomorphism, a number of researchers have applied the framework to public organizations and their tendency to look similar rather than embrace innovation. For example, Frumkin and Galaskiewicz (2004) explored whether institutional isomorphism, initially conceptualized in the private sector, would apply to public organizations as they have unique features such as more challenging measurable outputs, complicated input mechanisms, and lack owners with profit incentives (p. 289). They found that public

organizations are more susceptible to isomorphic pressures than for-profit organizations. Similarly, Ashworth et al. (2007) applied the framework of institutional isomorphism to the public sector and found that "public managers seek formal legitimacy as well as substantive results" (p. 184). In this way, LAUSD, the site of this case study, can be seen as a public organization ripe for exploration through an isomorphism lens. Therefore, in considering the LAUSD 2013 iPad rollout, institutional isomorphism offers a perspective to understand why innovative learning tools were hindered by institutional structures, pressures, and decisions, and ultimately led LAUSD to abandon these efforts.

Methods

We used a case study research strategy (Yin, 1981; Yin, 2013) to tell the story of the Common Core Technology Project (CCTP) which focused on the introduction of iPads in the Los Angeles Unified School District. Yin (1981) explains that "the distinguishing characteristic of the case study is that it attempts to examine: (a) a contemporary phenomenon in its real-life context, especially when (b) the boundaries between phenomenon and context are not clearly evident" (p. 59). The case of LAUSD clearly fits this definition as we explore the relationship between the institutional context and the phenomenon of the failure of the iPad initiative, the CCTP.

Data for this study came from both national and local perspectives found in widely distributed news media sources such as *The New York Times*, *The Wall Street Journal*, *Los Angeles Times*, *The Washington Post*, and *USA Today*. Many of these newspapers have substantial daily or weekly education sections that allowed for continued coverage of the CCTP and LAUSD more generally. We also used the widely-circulated *Wired* magazine as a source for understanding the technology community's sensemaking of what occurred in LAUSD relative to the district's technology initiative. These sources allowed us a broad institutional perspective of a historical event. In particular, we used the database LexisNexis and search terms including "Los Angeles Unified School District", "John Deasy", superintendent of LAUSD at the time, and "iPads" for the years 2010 to 2016. In addition to the over 100 articles this search yielded, a library search on background information of what occurred in LAUSD led us to two comprehensive research-based reports of the unfolding situation from the American Institute for Research (AIR) (2014, 2015). These reports then served as guides to create a timeline of events. Together, these resources allowed us to create a case study that illuminated important institutional features and actions.

It is important to note here that our use of secondary sources also creates limitations regarding the scope, depth, and potential objectivity of the data. We acknowledge these limitations and the benefit interviews and other data stemming from direct interactions with participants in these events would provide to our collective understanding and analysis of what transpired. That said, as we were interested in an institutional perspective, we saw the current data sources as useful and appropriate to get a view of the larger institutional environment in which the rollout of iPads in LAUSD took place. Additionally, we believe the novelty of this perspective is worthwhile and useful despite some gaps in the data. Future research that builds upon and expands on the present work by including direct first-hand accounts would undoubtedly be beneficial.

Once the case study was written, we took a thematic, deductive approach (Boyatzis, 1998) to coding our resources using coercive, mimetic, and normative isomorphism to create a comprehensive codebook. For example, when reading about the introduction of the Common Core as an impetus for making change in the district, we coded it as coercive isomorphism because it was evidence of a top-down pressure that dictated the choices of the district. This method allowed us to both create a narrative and analyze it using the theory of institutional isomorphism. This was an iterative process, as suggested by Boyatzis (1998) which included regular discussion between team members and revisions when needed.

Case Study

In 2011, the Los Angeles Unified School District (LAUSD) hired John Deasy as their superintendent. He faced a district in which less than half of students were reading at grade level, dropout rates were soaring, and thousands of educators had lost their jobs due to budget cuts (Gilbertson, 2014). The LAUSD school board hired Deasy as a changemaker, hoping he would set ambitious goals and take decisive steps to meet them (Iasevoli, 2014: Torres & Blume, 2015; Strauss, 2014). Deasy arrived having previously led school districts in Maryland, California, and Rhode Island, and most recently worked for the Gates Foundation (Blume, 2011; Iasevoli, 2014, Torres & Blume, 2015). Within three and a half years of arriving in LA, he resigned amid controversy surrounding a number of his initiatives, including a legal battle with the teacher's union over teacher tenure and

what many considered a failed $1.3 billion technology program (Rich, 2014; Strauss, 2013b; The Times Editorial Board, 2014). Despite successes in improving test scores and graduation and suspension rates, these controversies became the centerpieces of his legacy (Iasevoli, 2014; Strauss, 2014) and the latter, the technology program, our focus here.

Crafting the iPad Program

Decisions about rollout, adoption, and implementation of the large-scale iPad program in LAUSD, titled the Common Core Technology Project (CCTP), began with Deasy, his assessment of LAUSD, and his efforts to make monumental change in a district in need of support (Blume, 2011). When Deasy arrived at LAUSD in 2011, he began working on a project to introduce technology to every student. He started conversations with Apple Inc. (Apple) and Pearson PLC (Pearson) to deliver iPads and software aligned with the Common Core curriculum in a complete package to every classroom (American Institute for Research, 2014; Blume, 2013). In June 2013, the Board of Education approved the vendors and budget for Phase 1 of the program, deploying iPads to 21 schools. The events described here and below are listed as a timeline in Figure 1.

According to a 2014 report, Deasy advocated for the CCTP, and ultimately the choice of iPads, as mechanisms to address three interrelated concerns in the district (American Institute for Research, 2014). First, stakeholders were concerned about equity and issues of differential access and achievement for poor and minority students in particular. In 2013, over 75% of students in the district were eligible for free and reduced lunch (Educational Data Partnership, 2016). The U.S. Census Bureau also reported that in 2013, over 260,000 households in LAUSD did not have a computer, and over 150,000 households had a computer without access high speed internet (U.S. Census Bureau, 2013). At the same time, recent work by Gonzales (2016) points out that even when those in poverty have access to computers and high speed internet, they are often faced with a kind of 'dependable instability' in which their access is frequently disrupted and generally unstable. Therefore, we might imagine that a number of the district's neediest students were among those lacking dependable access to technology and potentially furthering the academic impact of the "digital divide". Indeed, a goal of the CCTP was to "close the 'digital divide' by ensuring that all students have access to 21st century technology" (American Institute for Research, 2015, p. 1). Perceptions were that providing technology to all students would prepare them with the skills necessary for a digital world, regardless of background.

The second concern was the introduction of the Common Core State Standards. In 2013, schools across the country began transitioning to a national set of curriculum standards to improve school performance and receive additional funding. LAUSD was no different, and Deasy looked for an innovative way to roll out new curriculum and curricular material at scale (Blume, 2013). The introduction of iPads was promoted as a mechanism to implement new curriculum in an adaptive and interactive way, allowing teachers to individualize curriculum based on the built-in standards-aligned formative feedback (American Institute for Research, 2014, p.1). It also allowed schools to implement new English and Math curriculum alongside the new standards for Digital Literacy addressed in the Common Core Curriculum (Gilbertson, 2014). LAUSD was also transitioning to the digitally administered Smarter Balanced testing program. Providing iPads was presented as a way to prepare and practice for these assessments. Deasy represented the CCTP as an efficient and prudent means to allow teachers to implement multiple elements of the new curriculum at once (American Institute for Research, 2014).

The third concern pushing CCTP was a perceived dearth of instructional innovation and student engagement. In 2013, LAUSD had a 70% graduation rate which was approximately 10 percentage points lower than the state average (Educational Data Partnership, 2016). By introducing this new digital tool, LAUSD hoped to infuse classrooms with "curriculum content and digital activities that are interactive and engaging" (American Institute for Research, 2014, p.1). Deasy also hoped that orchestrating a program to accomplish the goals of increasing equity, changing curriculum, and increasing engagement, LAUSD would improve educational opportunity for all students and "change the landscape of education" ("iBook 2", 2012).

Rollout and Implementation of the CCTP

In preparation for the launch of the program in the fall of 2013, LAUSD installed and upgraded wireless networks in participating schools. For some schools, wireless internet was completely new, and this change was a significant improvement and step towards equity via access (Blume, 2013). In August and September of 2013, LAUSD began CCTP professional development for teachers and staff in Phase 1 schools. Pearson and Apple

representatives ran sessions, and new district-level technology staff were hired to support the program and run additional trainings (American Institute for Research, 2014). Throughout the year, additional professional development opportunities were offered to faculty and staff. However, these opportunities were focused on topics like how to use an iPad or specific software. They were not in coordination with the curriculum arm of the district. The office responsible for the transition to Common Core "had not been involved with or coordinated professional development with CCTP" (American Institute for Research, 2014, p. 49).

Problems with rollout began quickly and centered on students' use of the devices. Though the district had taken steps to control student's access to non-curricular content on the iPads via AirWatch, a mobile device management software program to install and manage the profiles and the permissions for the devices, within a few weeks of launch, over 300 students at three high schools had deleted the profiles installed on the devices (Associated Press, 2013; Kaneshige, 2013). Deleting these Airwatch profiles made it impossible for the school to track and control the device. Students now had the ability to visit websites and download apps previously limited by the profile. Reported in news sources as students "hacking" the devices, concerns came pouring in from all interested parties (Blume, 2013; Strauss, 2013a). Though the matter was dealt with by restricting the iPads to the school campus, these events resulted in stakeholder pushback on the pace and structure of the rollout (Kaneshige, 2013). It also prompted an outpouring of national and local concern from teachers and parents about technology use in schools (Associated Press, 2013; Kaneshige, 2013), to which district officials had to respond.

In October of 2013, Deasy proposed adjusting the timeline of the rollout and pushing back the launch for Phase 2 schools to learn from the challenges in Phase 1 (American Institute for Research, 2014). The Board passed the resolution a month later, adding extra elements including the purchase of a keyboard for every student in third through twelfth grade and the requirement that, prior to the Phase 2 launch, all associated protocols and practices were to be approved by the Board (American Institute for Research, 2014). The Board also established a pilot program, Phase 1L, for nineteen schools providing laptops (instead of iPads) and accompanying curricular materials. This allowed schools to consider other devices besides iPads and choose one most closely aligned with their needs (American Institute for Research, 2015).

As these modifications were occurring, teachers voiced concern about the inconsistency of the devices and the Pearson curricular materials. Some of the products Pearson demonstrated during the trainings in August were not on the iPads given to students. In addition, there were many curricular pieces unexpectedly missing (American Institute for Research, 2014; Associated Press, 2013; Lapowsky, 2015). For example, all of the high school math curriculum and parts of the English Language Arts (ELA) curriculum across divisions were missing. According to teachers, some of the Common Core standards were interpreted incorrectly leading to materials and assessments misaligned to curricular goals (American Institute for Research, 2014, p. 36-37; Gilbertson, 2014). They also described excessively long download times for content files, an inability to login to the Pearson app, spotty WiFi connectivity, and a lack of immediate assistance when the technology was not working (American Institute for Research, 2014).

Unraveling of the CCTP

Over the next few months, iPads were purchased for sixteen of the 38 Phase 2 schools, and the Phase 1L schools chose and purchased laptops and accompanying curricular material to be launched in Fall 2014 (American Institute for Research, 2015). By then, however, the landscape of the CCTP had changed. Over the summer, information was revealed about the selection process for the devices and software suggesting Deasy manipulated the bidding process (Blume, Kim & Rainey, 2014; Gilbertson, 2014; Iasevoli, 2014; Strauss, 2014). In March 2013, LAUSD used a bidding process to bring technology and content companies to the table including Google LLC, IBM, Apple, and Pearson. However, emails, lunches, phone conversations, and meetings showed Deasy had extensive communications with Apple and Pearson dating back to May 2012 (Gilbertson, 2014). The request for bids ultimately included specific pricing, package, and device specifications giving these companies an edge over competitors (Gilbertson, 2014).

On August 25, 2014, Deasy issued a memo to the Board of Education explaining LAUSD would suspend its contract with Apple to "take advantage of an ever-changing marketplace and technology advances [and]... take into account concerns raised surrounding the CCTP" (Deasy, 2014). The bidding process was re-opened for the remaining Phase 2 schools and any future schools to be included in the CCTP.

In October 2014, John Deasy resigned as superintendent of LAUSD. This news was covered in national media outlets, alluding to varying meanings for the future of educational change. *The Los Angeles Times* editorial board (2014) wrote:

> Although many people are undoubtedly happy to hear that Deasy has resigned, in truth there is no cause for celebration. More than anything else, Deasy's departure is a dispiriting sign of a district that is in grave danger of losing its way. A recent series of bad mistakes on Deasy's part - the ill-thought-out plan to purchase iPads for every student, the error-riddled student scheduling system, the failure to fix the situation at several high schools where students could not gain access to needed courses - gave his enemies ammunition for a full-on attack...Deasy has his faults, but the bigger problems, which confronted his predecessors as well, have been the district's tendency to settle into paralyzing gridlock, and the school board's inability even to understand its role as elected overseers.

The Times was highly skeptical of Deasy's initiatives thus far, yet during his resignation they chose to acknowledge the serious challenges the district faced, with or without Deasy. In conversations with Joel Klein, former chancellor of New York City schools, and David Menefee-Libey, politics professors at Pomona College, Brenda Iasevoli of the *The Atlantic* wrote about the same moment:

> Despite [Deasy's] background and the support he initially won, he ultimately ran into the same obstacles that face other leaders of large urban districts who want to create major change...Deasy's style was typical of so-called reformers who sound alarm bells over the state of public education and claim the emergency demands radical change (Iasevoli, 2014).

Again, Iasevoli identifies Deasy as a changemaker in a challenging situation. The article also goes on to discuss the controversies and successes during Deasy's tenure. Last, *The New York Times* also connected Deasy's resignation to the tide of superintendents brought in to make significant change.

> In a sign of the powerful resistance that big-city school chiefs face in trying to make sweeping changes, John E. Deasy, superintendent of the Los Angeles Unified School District, resigned on Thursday after reaching an agreement with the city's school board that ended his tumultuous three-and-a-half-year tenure. (Rich, 2014).

All three news outlets, serving local and national readers, align Deasy with the movement to make significant change in struggling urban districts and the resistance accompanying them. Simultaneously, they all highlight the significant perceived missteps of Deasy's tenure. In December 2014, the FBI announced an investigation into the bidding process for the CCTP and the possible collaboration between Deasy and the eventual choices for device and content providers. The FBI collected boxes of documents from the central office of LAUSD to assist in their criminal investigation, but did not provide any more information about the scope or outcome of the investigation (Blume, Kim & Rainey, 2014).

Post-Deasy CCTP

After Deasy's departure in October, Ramon Cortines, a former superintendent of LAUSD became the interim superintendent. In February 2015, Cortines announced there were not enough funds to support the growing technology project, and halted further purchasing. He changed the name of the program to the Instructional Technology Initiative (ITI), broadening its scope to include more kinds of technology in the classroom and disconnecting it from the Common Core curriculum. In March, LAUSD issued a memo to Pearson documenting the struggles of using the curricular products in classrooms. The memo outlined the issues initially voiced by teachers in 2013, and documented the attempts LAUSD made to contact Pearson for help. The memo described the state of the program as follows: "These problems have left only two schools that continue to use the Pearson application regularly… [and] have resulted in less than five percent of the students within Instructional Technology Initiative schools having consistent access to content" (Lucas, 2015). These claims demonstrate that while the CCTP was ambitious and innovative in scale, it ultimately failed to embed itself into the daily teaching and learning in LAUSD. In April 2015, LAUSD asked for a refund for the Pearson products.

As part of the rebranding of the CCTP to the ITI, Cortines formed a taskforce comprised of teachers and other stakeholders to examine technology use in LAUSD and to form a plan for using technology effectively and thoughtfully in the classroom (Gilstrap, 2016; Lapowsky, 2015). In spring 2015, the group delivered recommendations to the Board, and according to the ITI website, in the 2016-2017 school year they were

"developing implementation strategies founded on the recommendations" ("Instructional Technology Initiative", 2016). While the story is ongoing and lives in work of the ITI, the legacy of Deasy and the CCTP remain, offering us an opportunity to explore the institutional factors influencing rollout, adoption, and implementation of iPad initiatives in education.

January 2011	LAUSD promotes John Deasy to Superintendent.
May 2012	Deasy meets with Pearson PLC CEO and sales representative to discuss tablet software.
July 2012	Deasy contacts Apple Inc. to use iPads as the tablet for the district.
March 2013	LAUSD conducts bidding process for technology and content.
June 2013	LAUSD Board of Education approves Apple and Pearson as vendors of devices and curriculum for Phase 1.
August 2013	First schools receive iPads, LAUSD begins CCTP professional development for teachers/staff in Phase 1 schools.
Sep 2013	Over 300 students at multiple high schools delete security profiles on devices. Schools restrict iPad use to campus.
Oct 2013	Deasy proposes pushing back Phase 2 rollout.
Oct 2013	Teachers voice concerns about missing curriculum, app usability, and spotty WiFi connectivity.
Spring 2014	iPads purchased for some Phase 2 schools; laptops purchased for Phase 1L schools.
Summer 2014	Emails uncovered linking Deasy to Pearson and Apple prior to bidding process.
August 2014	LAUSD suspends contract with Apple, bidding process reopens for remaining Phase 2 schools.
October 2014	Deasy resigns superintendency, former superintendent Ramon Cortines named interim superintendent.
December 2014	FBI initiates investigation of CCTP bidding process.
February 2015	Cortines halts further purchasing due to lack of funds; forms task force to examine technology use.
February 2015	Cortines changes CCTP to Instructional Technology Initiative (ITI).
March 2015	LAUSD issues memo to Pearson documenting multiple attempts to contact Pearson for help.
April 2015	LAUSD requests refund from Pearson.
Spring 2015	Cortines' task force makes recommendations to the LAUSD board.

Figure 1. Timeline of major milestones in the CCTP

Case Analysis

Using institutional isomorphism (DiMaggio & Powell, 1983) as an analytical frame, we now focus on the power of institutional factors and their influence on iPad rollout, adoption, and implementation in LAUSD. We do so to better understand the reasons for the less than positive results of LAUSD's effort to innovate and implement an iPad program of unparalleled scale.

To begin, it is again important to note that institutional isomorphism tends to occur most powerfully when the institutional environment is highly uncertain. In such an environment, in place of evaluating problems and looking for solutions to directly address them, institutions often look for familiar solutions thereby creating homogeneity (DiMaggio & Powell, 1983). This appeared to be the case in LAUSD. For example, as per the board's own stated hiring goals, Deasy's arrival in LAUSD signaled a desire to create change (Blume, 2011; The Times Editorial Board; Torres & Blume, 2015). The idea change was coming but in unknown ways, likely set up an environment in which actors were anticipating challenges to their work. Second, the iPad initiative was

approved late in the school year, leaving teachers with limited time to plan for the seemingly major shift in curriculum and pedagogy. Finally, training from Apple and Pearson were not provided until a few weeks before the iPad rollout.

Adding to this uncertainty were questions regarding whether resources existed to fully support the initiative. While the devices were acquired at a high cost, there was a lack of physical infrastructure and human capital to address issues regarding rollout, adoption, and implementation as they arose. During the time of the rollout, LAUSD was confronting budget pressures, poor student performance, and high teacher turnover (Blume, 2011; Gilbertson, 2014). This context of high environmental uncertainty is important to understand how mechanisms of institutional isomorphism (i.e., coercive, mimetic, and normative) appear to have impacted the decisions Deasy, the Board of Education, and the teachers made regarding CCTP.

First, coercive isomorphism explains that institutions become increasingly homogenized with continued external pressure from organizations on which they are dependent (DiMaggio & Powell, 1983). As the case illustrates, when iPads were rolled out to teachers in LAUSD, a number of coercive pressures from the federal and state government were simultaneously introduced and seemed to impact this initiative. For example, the introduction of the Common Core curriculum was a major policy change driving this technology initiative and consequently had implications for the content and use of the iPads. As California adopted Common Core, districts across the state shifted their curriculum and instructional strategies to align to the new standards (McLaughlin, Glaab, and Hilliger, 2014). This decision meant the material covered in schools, the formative and summative assessments tied to the material, and perhaps even teachers' understanding of those changes, would likely look similar across schools. This approach is in contrast to one in which local adopters could generate curricular responses to the new standards. Doing so might have created a more open marketplace of ideas and subsequent curricular and assessment materials. In the Milpitas Unified School District, further north near San Jose, teachers and administrators were given the opportunity to design a "school of the future" and chose devices and software that best fit their vision. This program is often lauded as a successful technology integration program (Lapowsky, 2015).

Therefore, we might understand that when LAUSD decided, vis-à-vis the CCTP, to work with the technology vendors it did and purchase particular and uniform curricular products for the iPads, it was directly responding to both compliance and convergence-oriented coercive pressures as described by Ashworth et al. (2007). Taking these points together then, in the case of LAUSD, it seems that though the iPads hypothetically allowed for more interactive practices with the new content and standards, it did not produce them. Instead, district policies regarding the implementation of Common Core may have simultaneously constrained the ways this technology was applied by limiting the time and resources teachers were given to spend on content development and differentiation when needed.

Alongside these coercive pressures, the uncertain environment of LAUSD in 2013 appears to also have inspired district leaders to respond to mimetic pressures. DiMaggio and Powell (1983) explain that "modeling...is a response to uncertainty" (p. 151). Both the appointment of Deasy as superintendent and the use of technology to create change may be understood as mimicked responses to other districts engaging in large scale reform. For example, at the time of Deasy's resignation, news outlets compared his appointment and departure to the larger trend in urban school districts of appointing superintendents poised to make major change (Iasevoli, 2014; Rich, 2014).

Prior to Deasy's arrival, those working in LAUSD reported being disappointed in the former superintendent's pace and traditional vision for improvement, and the mayor was looking to make major changes to the system (Torres & Blume, 2015). However, with the hiring of Deasy and subsequent iPad efforts the mayor and Board were mimicking what might be identified as a neoliberal approach (i.e., one that promotes free market solutions to improve school performance) (Apple, 2006; Lakes and Carter, 2011) growing in popularity since the federal No Child Left Behind Act of 2001 (Hursh, 2007) and often including activities such as confronting teachers' unions, supporting charter schools, and introducing new curriculum and technologies. Additionally, argued to embrace a similar approach to change (Kovacs & Christie, 2008), the Gates Foundation was also a major force in reform and the shift to Common Core and technology as a mechanism to support it (Layton, 2014). Deasy, who left his job at the Gates Foundation to work for LAUSD, may have been seen as a "safe" choice relative to his willingness to embrace such an approach as a superintendent, and his selection suggests mimetic forces were indeed at play (Strauss, 2014).

Another mimetic pressure present in this case could be considered the choice of iPads themselves. Technology is often interpreted as innovative change by educational and non-educational institutions (Ditzler et al., 2016;

Russell et al., 2003). This view is apparent in the overwhelming presence of technology in innovation-based initiatives, like the iZone in New York City that centers technology in their efforts to create innovative schools (Quillen, 2011) or the "Education Innovation Clusters" in Pittsburgh introducing technology into schools as a mechanism to stay relevant and competitive (Molnar, 2015). An article on educational innovation in *Education Week* explained, "education experts agree that there are some similarities across innovative districts that could shed light on how to establish such an education ecosystem. Those factors include...an infusion of technology districtwide" (Ash, 2013, p.58).

The relationship between innovation and technology is rooted in its constant evolution and signaling that it provides access to something new and different (Lapowsky, 2015). After decades of introducing computers to students, handheld devices like iPads frequently act as signals to decision makers that "innovation" is occurring (Blume, 2013; Gilbertson, 2014, McClanahan et al., 2012, Mcknight et al., 2016) As previously discussed, Deasy was charged with bringing new ideas and substantial shifts to LAUSD to solve the complex problems facing the district. Similar to the behavior of the mayor and the School Board, Deasy responded with a solution used in other institutions and organizations and nationally defined as innovative to solve the problems at hand. This is not to say iPads were an inappropriate solution; as already mentioned, research shows iPads have the potential to change teaching and learning in ways Deasy and the School Board hoped they would (Chou et al., 2012; Ditzler et al., 2016; Harper & Milman, 2016:, McClanahan et al., 2012; Rosen & Manny-Ikan, 2011). However, what was unclear in the case, and perhaps to the actors themselves, was whether iPads were the best possible solution for the problems and needs facing the district given the many institutional pressures they faced.

It is also useful to remember mimetic pressures may not be experienced as such. It may feel natural for individuals to most trust views and opinions of those most like them (e.g., Lubell, 2007). Rather, the issue is how, at the institutional level, these similarities among organizational workers' experiences, beliefs, and tools create an isomorphic force moving individuals and organizations to become more alike over time. As DiMaggio and Powell (1983) explain, "the theory of isomorphism addresses not the psychological states of the actors but the structural determinants of the range of choices that actors perceive as rational or prudent" (p. 149).

Normative isomorphic pressures (i.e., pressures from norms stemming from professionalization) were also present in the iPad program in LAUSD. The provision of technology in schools was generally seen throughout the education industry as a step in the right direction as is evidenced by its inclusion in the Common Core Standards, the increasing number of assessments administered digitally, and the educational divisions of every major technology company. Google has a suite of products for schools, Google Apps for Education, available for free, which has been adopted by schools and universities around the country. Apple has marketed iPads to schools directly, partnering with districts, offering Apple Education events and keynotes, and providing software to manage devices and purchasing. Microsoft purchased Minecraft, an online game focused on building and creating, and is marketing it to schools as a mechanism to develop creative and collaborative thinkers. The Microsoft education website also includes a section titled "Ten Critical Components to School Transformation" and offers their services to help schools make major change using technology ("Ten Critical Components", 2016). Thus, in the world of education, technology is often understood as signifying positive change (Lapowsky, 2015). That technology, and the iPad specifically, is innovative and positive is then often reinforced within the professional networks of teachers (see "EdTechTeacher Summit", 2017 for an example). Technology is central in many of the sessions offered at professional conferences, with iPads featuring prominently. Representatives from the companies above are present at these conferences, leading workshops and selling products. This is all to describe the normalized definition of technology as a positive change agent in schools. When Deasy chose technology to address LAUSD's problems and Apple and Pearson as the providers, he did so in a larger industry that understood such choices as positive and groundbreaking (Lapowsky, 2015; Mcknight et al, 2016). Additionally, these same normative pressures are likely influencing others within education to continue to partner with companies like Apple, understand technology, and solve problems in similar ways.

Finally, shifting to teachers' response to the iPad initiative, the framework of institutional isomorphism can help us to make sense of how implementation was reported to have occurred. First, from the research, we know that when iPad implementation efforts include elements serving to address the ways in which content, pedagogy, and technology can change and better each other, they are more successful and can better impact student learning and achievement (Mishra & Koehler, 2006). We also know from the case, that LAUSD had real difficulty providing these elements. What this analysis and the framework of institutional isomorphism adds to the conversation are some key insights into potentially why this occurred. As the case study demonstrated, the curricular content did not seem to work and was not ultimately adopted by the teachers and students of LAUSD.

Additionally, the trainings and professional development prior to and during the launch did not partner with academic curriculum teams (American Institute for Research, 2014, p. 49), effectively leaving pedagogy out of the implementation conversation. Furthermore, the district did not provide professional development to address teaching with technology directly for each unique school, grade, or disciplinary context. Instead, LAUSD appeared to mimic reforms focused on tools alone, rather than practice or content, seemingly leaving curriculum and pedagogy unaddressed. In this way, our findings signal LAUSD, existing within an uncertain environment and succumbing to coercive forces of national curriculum, mimetic pressures to enact change, and normative forces to demonstrate legitimacy, ultimately paid a price in the rollout, adoption, and implementation of iPad integration.

Discussion and Implications

This study utilizes institutional isomorphism (Dimaggio & Powell, 1983) to build on existing research regarding the ways individual schools, teachers, and students experience and engage with technology and iPads specifically to consider how institutional features may also impact such efforts. We find, perhaps somewhat unsurprisingly, institutional features and forces appear to matter in a variety of ways. Of these, we view three as potentially most salient. First, the case of an iPad program in LAUSD shows us federal, state, and local policies matter in how districts craft and rollout such efforts, even when these policies are not about technology directly (e.g., accountability measures). Second, the case and subsequent analysis reinforces research on the potentially negative impact homogeneity in the experiences, beliefs and values of those within a given industry may have on performance (see Jackson, Joshi & Erhardt, 2003 for a review). Finally, using an institutional lens provides opportunities to again consider whether and to what degree districts have the capacity to adequately support teachers and schools in the very difficult task of shifting their work to meet the demands of true technological integration in the classroom. We discuss each of these below.

In terms of the first issue regarding existing educational policies and technology initiatives like the introduction of a 1:1 iPad program, the case highlights how important it is for those interested in implementing such programs to have a strong and comprehensive understanding of current policies and how they may influence such initiatives from rollout to implementation. In the case of LAUSD, this may have meant, for example, that beyond using technology as a mechanism to promote Common Core standards, district officials may have also considered if and how such efforts intersected with their goals of using the iPads innovatively and nimbly. Armed with this information, officials could then make adjustments to the initiative's goals or the tools used and enhance potential performance. Such efforts would also help to build what Elmore et al. (2014) and others (Fullan & Quinn, 2015; Hopkins, Stringfield, Harris, Stoll, & Mackay, 2014) have labeled internal or institutional coherence - an attribute shown to enhance improvement and change, including, one might predict, the likelihood of a successful implementation of iPads.

Alongside such efforts, it may also be incumbent on district leaders or others interested in iPad initiatives to "manage up" (Gross, Jochim, Hill, & Murphy, 2013) and work with other officials across the system to create spaces within or across policies for these initiatives to succeed. This might include negotiating waivers for either part of the entirety of a policy or working with districts to negotiate "innovation" spaces where more lax policy implementation occurs. As Mishra and Koehler (2006) tell us, "merely introducing technology to the educational process is not enough" (p. 1018), and the case of LAUSD demonstrates this and illuminates the institutional features standing in the way of translating iPads into meaningful change.

Second, the case reinforces a long history of work showing the diversity of those making decisions in an organization can impact performance (e.g., Van Knippenberg, De Dreu & Homan, 2004). In this case, for example, the fact that Deasy had come from the Gates Foundation and cut his teeth with others embracing similar ways of thinking about schools and school improvement appeared to have real and what ultimately seemed to be negative implications for what the iPad rollout would look like and achieve. Such findings suggest it may be useful for those within educational organizations to purposely seek out diverse perspectives and even dissent when planning and implementing new technology initiatives as doing so can have real benefits for the quality of the plan and its impact (see Nemeth, Connell, Rogers, & Brown, 2001 for a review).

Third, the case study also gives some insights into the many institutional factors that may play a role in schools' ability to shift and change in response to new technologies. Included among these are a given district's ability to provide adequate resources and support for technology integration. In the case of LAUSD, while professional development as well as technological and infrastructure support existed, they were not provided in ways that, according to the research, would have allowed for schools to shift teaching and learning. The TPACK

framework teaches us addressing and understanding the overlaps in technology, pedagogy, and content knowledge and the ways they impact each other is imperative in allowing technology to facilitate shifts in teaching and learning (Mishra & Koehler, 2006). Successful professional development means developing an understanding of the technological tools, how those tools impact student learning, and the intersections with specific content and classrooms (Ertmer & Ottenbreit-Leftwich, 2010). At the same time, we know resources are significant barriers to technology integration (Hew & Brush, 2006), further emphasizing the impact these features (e.g., time, human capital, etc.) have on a successful technology initiatives. As the case study demonstrated, the district and school level professional development surrounding the iPad initiative did not accomplish these goals, focusing on the iPad and not the way it interacted with pedagogy and content, leading us to question the institutional level supports planned and executed in LAUSD.

Looking forward, additional institutional supports of time, professional development and flexibility, identified as critical for other initiatives aimed at changing teachers' practice (Hopkins & Woulfin, 2015; Peurach & Neumerski, 2015), would be also helpful when implementing a large-scale iPad program (Ertmer & Ottenbreit-Leftwich, 2010). Providing more time for preparation and training would allow teachers to address their instructional goals directly and redesign curriculum in a manner leveraging iPads to support and enhance student learning and outcomes (Harris & Hofer, 2009; Hutchison et al., 2012).

Additionally, allowing for curricular flexibility and experimentation would help to create what organizational scholars call a "psychologically safe" learning environment where individuals cans speak up and make mistakes without fear of retribution (Edmondson et al., 2016). As Ertmer and Ottenbreit-Leftwich (2010) and others (e.g., McKnight et al., 2016; Mishra & Koehler, 2006; Russell et al., 2003) have argued such spaces are important to encourage teachers to shift their mindsets and their behaviors around technology use in their classrooms. Given that, as Collins and Halverson (2010) explain, "at the K-12 level, technology will continue to change what is important to learn in a variety of ways" (p. 26), these types of flexible and supportive institutional environments will be necessary to help schools adjust and teachers and students to thrive during these ongoing shifts.

This case study also has implications for future research. First, it is clear that more work is needed to fully understand the scope and depth of the various institutional factors impacting both successful and less successful iPad initiatives. Such work may include the incorporation of additional data sources including interviews of key players, observations of rollout and implementation, as well as document analysis of policy tools used to communicate such initiatives. Second, as more work using institutional theory to explore iPad initiatives would be useful, so too would work bridging between such research and existing work on localized implementation. For example, it would be useful to consider how the TPACK framework (Mishra & Koehler, 2006), the curricular integration framework (Hutchison & Reinking, 2011), and institutional theory together can help us understand how the elements of an iPad rollout can work in concert to create meaningful change in schools.

Finally, considering this analysis, it is also important to note that while illuminating in terms of the institutional factors at play in this iPad initiative, the framework did not allow us to see every element of a complex system. Specifically, using the lens of institutional isomorphism leaves out an understanding and contextualization of the political climate in which these events happened. The political networking involved in Deasy's conversations with Apple and Pearson and the political power of groups like the Gates Foundation are not fully explained by institutional isomorphism. In particular, while the framework gives insights into the coercive power of the Gates Foundation, Apple, Pearson, and other groups over schools and districts, the way these groups make decisions, build power, and use the political sphere to assert their power, was left untouched. Given the influence such groups have had and currently have in influencing the larger educational reform agenda, additional research exploring this influence seems critical.

Conclusion

In this research, we examined a large-scale iPad rollout in the Los Angeles Unified School District using the institutional theory of institutional isomorphism as explained by DiMaggio and Powell (1983). This allowed us a new perspective on how institutional pressures and features impact change initiatives, specifically 1:1 iPad programs. We learned that national and district policy, the individuals and teams that make large scale decisions, and the support provided for the implementation of those decisions matter for successful rollout, adoption, and implementation of iPad initiatives. Hopefully, this work will help schools and districts to create iPad initiatives that fulfill their promise, facilitating innovative teaching and learning for all students.

References

American Institute for Research. (2014). *Evaluation of the Common Core Technology Project: Interim report.* Washington, DC: Margolin, J., Haynes, E., Heppen, J., Ruedel, K., Meakin, J., Hauser, A., … Hubbard, A..

American Institute for Research. (2015). *Evaluation of LAUSD's Instructional Technology Initiative.* Washington, DC: Margolin, J., Heppen, J., Haynes, E., Ruedel, K., Meakin, J., Rickles, J., … Fellers, L..

Apple, M. W. (2006). Understanding and interrupting neoliberalism and neoconservatism in education. *Pedagogies*, *1*(1), 21-26.

Ash, K. (2013). Building a district culture to foster innovation. *Education Week*, *33*(6), 8-10.

Ashworth, R., Boyne, G., & Delbridge, R. (2007). Escape from the iron cage? Organizational change and isomorphic pressures in the public sector. *Journal of Public Administration Research and Theory*, *19*(1), 165-187.

Associated Press. (2013). LA students get iPads, crack firewall, play games. *USA Today*. Retrieved from: https://www.usatoday.com/story/news/nation/2013/10/05/la-students-get-ipads-crack-firewall-play-games/2928351/

Blume, H. (2011, January 12). New L.A. schools supt. John Deasy is seemingly a man of contradictions. *The Los Angeles Times*. Retrieved from http://articles.latimes.com/2011/jan/12/local/la-me-deasy-20110112

Blume, H. (2013, August 27). LAUSD launches its drive to equip every student with iPads. *The Los Angeles Times.* Retrieved from http://www.latimes.com/local/la-me-lausd-ipads-20130828-story.html

Blume, H., Kim, V., and Rainey, J. (2014, December 2). FBI seizes LAUSD records related to troubled iPad program. *The Los Angeles Times*. Retrieved from http://www.latimes.com/local/education/la-me-lausd-ipads-20141203-story.html

Boyatzis, R. E. (1998). *Translating Qualitative Information.* Thousand Oaks, CA: Sage Publications.

Buchanan, R. (2015). Teacher identity and agency in an era of accountability. *Teachers and Teaching*, *21*(6), 700-719.

Bryk, A. S., Sebring, P. B., Allensworth, E., Easton, J. Q., & Luppescu, S. (2010). *Organizing schools for improvement: Lessons from Chicago*. Chicago: University of Chicago Press.

Carr, J. (2012). Does math achievement h'APP'en when iPads and game-based learning are incorporated into fifth-grade mathematics instruction?. *Journal of Information Technology Education: Research*, *11*(1), 269-286.

Castek, J., & Beach, R. (2013). Using apps to support disciplinary literacy and science learning. *Journal of Adolescent & Adult Literacy*, *56*(7), 554-564.

Chou, C.C., Block, L., & Jesness, R. (2012). A case study of mobile learning pilot project in K-12 schools. *Journal of Educational Technology Development and Exchange*, *5*(2), 11-26.

Coburn, C. E. (2001). Collective sensemaking about reading: How teachers mediate reading policy in their professional communities. *Educational Evaluation and Policy Analysis*, *23*(2), 145-170.

Collins, A., & Halverson, R. (2010). The second educational revolution: Rethinking education in the age of technology. *Journal of Computer Assisted Learning*, *26*(1), 18-27.

Corlu, M. S., Capraro, R. M., & Capraro, M. M. (2014). Introducing STEM education: implications for educating our teachers for the age of innovation. *Egitim ve Bilim*, *39*(171).

Datnow, A., Park, V., & Kennedy-Lewis, B. (2013). Affordances and constraints in the context of teacher collaboration for the purpose of data use. *Journal of Educational Administration*, *51*(3), 341–362.

Day, C., Elliot, B., & Kington, A. (2005). Reform, standards and teacher identity: Challenges of sustaining commitment. *Teaching and Teacher Education*, *21*(5), 563-577.

Deasy, J.E. (2014, August 25). New RFP for the CCTP. (Interoffice Correspondence, Los Angeles Unified School District, Office of the Superintendent). Retrieved from: http://documents.latimes.com/lausd-memo-apple-contract-suspended/

DiMaggio, P. J., and Powell, W.W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, *48* (2), 147-160. http://www.jstor.org/stable/2095101

Ditzler, C., Hong, E., & Strudler, N. (2016). How tablets are utilized in the classroom. *Journal of Research on Technology in Education*, *48*(3), 181-193.

Donaldson, M., Johnson, S.M., Kirkpatrick, C.L., Marinell, W.H., Steele, J.L., & Szczesiul, S.A. (2008). Angling for access, bartering for change: How second stage teachers experience differentiated roles in schools. *Teachers College Record*, *110*(5), 1088–1114.

Dunleavy, M., Dexter, S., & Heinecke, W. F. (2007). What added value does a 1: 1 student to laptop ratio bring to technology-supported teaching and learning?. *Journal of Computer Assisted Learning*, *23*(5), 440-452.

Dunleavy, M., & Heinecke, W. F. (2007). The impact of 1: 1 laptop use on middle school math and science standardized test scores. *Computers in the Schools*, *24*(3-4), 7-22.

Edmondson, A. C., Higgins, M., Singer, S., & Weiner, J. (2016). Understanding psychological safety in health care and education organizations: A comparative perspective. *Research in Human Development*, 13(1), 65–83.

Educational Data Partnership. (2016). Los Angeles Unified district summary. Retrieved November 18, 2016, from http://www.ed-data.org/district/Los-Angeles/Los-Angeles-Unified

Elmore, R. F. (2005). Accountable leadership. *The Educational Forum, 69*(2), 134–142.

Elmore, R. F., Forman, M. L., Stosich, E. L., & Bocala, C. (2014). The Internal Coherence Assessment Protocol & Developmental Framework: Building the Organizational Capacity for Instructional Improvement in Schools. Research Paper. Strategic Education Research Partnership.

Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education*, *42*(3), 255-284.

[EventsAtApple's channel]. (2012, January 21). *iBooks 2 - Apple education event, January 2012 (full keynote) *hq**. [Video File]. Retrieved from https://youtu.be/YG1vVisV-0w

Feistritzer, C. E., Griffin, S., & Linnajarvi, A. (2011). Profile of teachers in the US, 2011. Washington, DC: National Center for Education Information.

Frumkin, P., & Galaskiewicz, J. (2004). Institutional isomorphism and public sector organizations. *Journal of Public Administration Research and Theory*, *14*(3), 283-307.

Fullan, M., & Quinn, J. (2015). *Coherence: The right drivers in action for schools, districts, and systems.* Corwin Press.

Gilbertson, A. (2014, August 25). LA schools iPad project: how is started…before the bidding began. *Southern California Public Radio*. Retrieved from http://www.scpr.org/blogs/education/2014/08/25/17192/how-did-la-schools-decide-on-ipad-software-it-star/

Gilstrap, S. (2016, Oct 12). Technology task force reconvenes focusing on education technology, cyber safety, and the future of teaching and learning. *LAUSD Daily.* Retrieved from http://lausddaily.net/2016/10/technology-task-force-reconvenes-focusing-on-education-technology-cyber-safety-and-the-future-of-teaching-and-learning/

Gonzales, A. (2016). The contemporary US digital divide: from initial access to technology maintenance. Information, *Communication & Society*, *19*(2), 234-248.

Grissom, J. A., Loeb, S., & Master, B. (2013). Effective instructional time use for school leaders: Longitudinal evidence from observations of principals. *Educational Researcher*, *42*(8), 433–444.

Gross, B., Jochim, A., Hill, P., & Murphy, P. (2013). Leveraging performance management to support school improvement. *The SEA of the Future*, *1*(1).

Hargreaves, A. (2010). Presentism, individualism, and conservatism: The legacy of Dan Lortie's Schoolteacher: A sociological study. *Curriculum Inquiry*, *40*(1), 143-154.

Harper, B., & Milman, N. B. (2016). One-to-one technology in K–12 classrooms: A review of the literature from 2004 through 2014. *Journal of Research on Technology in Education*, *48*(2), 129-142.

Harris, A., Adams, D., Jones, M. S., & Muniandy, V. (2015). System effectiveness and improvement: The importance of theory and context. *School Effectiveness and School Improvement*, *26*(1), 1–3.

Harris, J., & Hofer, M. J. (2009). Grounded tech integration: An effective approach based on content, pedagogy, and teacher planning. *Learning & Leading with Technology*, *37*(2), 22.

Hemelt, S. W. (2011). Performance effects of failure to make adequate yearly progress (AYP): Evidence from a regression discontinuity framework. *Economics of Education Review*, *30*(4), 702–723.

Hew, K. F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning: Current knowledge gaps and recommendations for future research. *Educational Technology Research and Development*, *55*(3), 223-252.

Higgins, M. C., Weiner, J., & Young, L. (2012). Implementation teams: A new lever for organizational change. *Journal of Organizational Behavior*, *33*(3), 366-388.

Hopkins, D., Stringfield, S., Harris, A., Stoll, L., & Mackay, T. (2014). School and system improvement: A narrative state-of-the-art review. *School Effectiveness and School Improvement*, *25*(2), 257-281.

Hopkins, M., & Woulfin, S. L. (2015). School system (re) design: Developing educational infrastructures to support school leadership and teaching practice. *Journal of Educational Change*, *16*(4), 371-377.

Hur, J. W., & Oh, J. (2012). Learning, engagement, and technology: Middle school students' three-year experience in pervasive technology environments in South Korea. *Journal of Educational Computing Research*, *46*(3), 295-312.

Hursh, D. (2007). Assessing No Child Left Behind and the rise of neoliberal education policies. *American Educational Research Journal*, *44*(3), 493-518.

Hutchison, A., Beschorner, B., & Schmidt-Crawford, D. (2012). Exploring the use of the iPad for literacy learning. *The Reading Teacher*, *66*(1), 15-23.

Hutchison, A., & Reinking, D. (2011). Teachers' perceptions of integrating information and communication technologies into literacy instruction: A national survey in the United States. *Reading Research Quarterly, 46*(4), 312-333.

Iasevoli, B. (2014, Oct 17). Why did the Los Angeles superintendent resign?. *The Atlantic*. Retrieved from https://www.theatlantic.com/education/archive/2014/10/why-did-the-los-angeles-superintendent-resign/381588/

Imants, J., Wubbels, T., & Vermunt, J. D. (2013). Teachers' enactments of workplace conditions and their beliefs and attitudes toward reform. *Vocations and Learning*, *6*(3), 323–346.

Instructional Technology Initiative. (n.d.) Retrieved December 13, 2016 from http://achieve.lausd.net/iti#spn-content

Jackson, S. E., Joshi, A., & Erhardt, N. L. (2003). Recent research on team and organizational diversity: SWOT analysis and implications. *Journal of Management, 29*(6), 801-830.

Jacobson, S. L., Johnson, L., Ylimaki, R., & Giles, C. (2005). Successful leadership in challenging US schools: enabling principles, enabling schools. *Journal of Educational Administration*, *43*(6), 607-618.

Kaneshige, T. (2013, October, 1). What's behind the iPad hack at Los Angeles high schools?. *CIO*. Retrieved from http://www.cio.com/article/2382090/consumerization-of-it/what-s-behind-the-ipad-hack-at-los-angeles-high-schools-.html

Knapp, M. S., & Feldman, S. B. (2012). Managing the intersection of internal and external accountability: Challenge for urban school leadership in the United States. *Journal of Educational Administration*, *50*(5), 666–694.

Kovacs, P. E., & Christie, H. K. (2008). The Gates' foundation and the future of US public education: A call for scholars to counter misinformation campaigns. *Journal for Critical Education Policy Studies*, *6*(2), 1-20.

Lakes, R. D., & Carter, P. A. (2011). Neoliberalism and education: An introduction. *Educational Studies*, *47*(2), 107-110.

Lapowsky, I. (2015, May 8). What schools must learn from LA's iPad debacle. *Wired*. Retrieved from https://www.wired.com/2015/05/los-angeles-edtech/

Lawless, K. A. & Pellegrino, J. W. (2007). Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers. *Review of Educational Research*, *77*(4), 575-614.

Layton, L. (2014, June 7). How Bill Gates pulled off the swift Common Core revolution. *The Washington Post.* Retrieved from https://www.washingtonpost.com/politics/how-bill-gates-pulled-off-the-swift-common-core-revolution/2014/06/07/a830e32e-ec34-11e3-9f5c-9075d5508f0a_story.html?utm_term=.528699ba6c63

Le Fevre, D. M. (2014). Barriers to implementing pedagogical change: The role of teachers' perceptions of risk. *Teaching and Teacher Education, 38,* 56–64.

Leithwood, K., Harris, A., & Hopkins, D. (2008). Seven strong claims about successful school leadership. *School leadership and management*, *28*(1), 27-42.

Leu, D. J., Kinzer, C. K., Coiro, J. L., & Cammack, D. W. (2004). Toward a theory of new literacies emerging from the Internet and other information and communication technologies. *Theoretical models and processes of reading*, *5*(1), 1570-1613.

Liu, M, Scordino, R., Geurtz, R., Nevarrete, C., Ko, Y, and Lim, M. (2014). A look at research on mobile learning in K-12 education from 2007 to the present. *Journal of Research on Technology in Education, 46*(4), 325-372.

Lowther, D. L., Ross, S. M., & Morrison, G. M. (2003). When each one has one: The influences on teaching strategies and student achievement of using laptops in the classroom. *Educational Technology Research and Development*, *51*(3), 23-44.

Lubell, M. (2007). Familiarity breeds trust: Collective action in a policy domain. *The Journal of Politics, 69*(1), 237-250.

Lucas, B. (2015, March 15). Pearson Status Update. (Inter-office Correspondence, Los Angeles Unified School District, Instructional Technology Initiative) Retrieved from: http://laschoolreport.com/wp-content/uploads/2015/04/Instructional-Technology-Initative-Pearson-Update.pdf

McClanahan, B., Williams, K., Kennedy, E., & Tate, S. (2012). A breakthrough for Josh: How use of an iPad facilitated reading improvement. *TechTrends*, *56*(3), 20.

McKnight, K., O'Malley, K., Ruzic, R., Horsley, M.K., Franey, J.J., & Bassett, K. (2016) Teaching in a digital age: How educators use technology to improve students learning. *Journal of Research on Technology in Education, 48*(3), 194-211.

McLaughlin, M., Glaab, L., & Carrasco, I. H. (2014). Implementing Common Core State Standards in California: A Report from the Field. *Policy Analysis for California Education*, *PACE*.

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, *108*(6), 1017.

Molnar, M. (2015). Education Innovation Clusters' Aim to Improve Schools. *Education Week*, *34*(24), 12.

Murray, O. T., & Olcese, N. R. (2011). Teaching and learning with iPads, ready or not?. *TechTrends*, *55*(6), 42-48.

Nemeth, C. J., Connell, J. B., Rogers, J. D., & Brown, K. S. (2001). Improving decision making by means of dissent. *Journal of Applied Social Psychology*, *31*(1), 48-58.

Peurach, D. J., & Neumerski, C. M. (2015). Mixing metaphors: Building infrastructure for large scale school turnaround. *Journal of Educational Change*, *16*(4), 379-420.

Ponticell, J. A. (2003). Enhancers and inhibitors of teacher risk taking: A case study. *Peabody Journal of Education*, *78*(3), 5–24.

Powell, S. (2014). Choosing iPad apps with a purpose: Aligning skills and standards. *Teaching Exceptional Children*, *47*(1), 20-26.

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.

Puttick, G., Drayton, B., & Karp, J. (2015). Digital Curriculum in the Classroom: Authority, Control, and Teacher Role. *International Journal of Emerging Technologies in Learning*, *10*(6).

Quillen, I. (2011). Educators evaluate learning benefits of iPad. *Education week*, *4*(3), 38-40.

Rich, M. (2014, October 16). Deasy resigned as Los Angeles schools chief after mounting criticism. *The New York Times.* Retrieved from https://www.nytimes.com/2014/10/17/us/lausd-john-deasy-resigns-superintendent-los-angeles.html?_r=0

Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, *50*(1), 4–36.

Rosen, Y., & Manny-Ikan, E. (2011). The Social Promise of the Time To Know Program. *Journal of Interactive Online Learning*, *10*(3).

Russell, M., Bebell, D., O'Dwyer, L., and O'Connor, K. (2003). Examining teacher technology use: Implications for preservice and inservice teacher preparation. *Journal of Teacher Education, 54*(4), 297-310.

Shapley, K. S., Sheehan, D., Maloney, C., & Caranikas-Walker, F. (2010). Evaluating the implementation fidelity of technology immersion and its relationship with student achievement. *The Journal of Technology, Learning and Assessment*, *9*(4).

Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher 15*(2). 4-14.

Smith, C. A., & Santori, D. (2015). An exploration of iPad-based teaching and learning: How middle-grades teachers and students are realizing the potential. *Journal of Research on Technology in Education*, *47*(3), 173-185.

Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research, 72*(3), 387-431.

Strauss, V. (2013a, September 27). Student hackers lead L.A. schools to halt major iPad initiative. *The Washington Post*. Retreived from: https://www.washingtonpost.com/news/answer-sheet/wp/2013/09/27/student-hackers-lead-l-a-schools-to-halt-major-ipad-initiative/?utm_term=.683ec86d72f0

Strauss, V. (2013b, December 8). Education innovation: A case study in what not to do. *The Washington Post.* Retrieved from: https://www.washingtonpost.com/news/answer-sheet/wp/2013/12/08/education-innovation-a-case-study-in-what-not-to-do/?utm_term=.3061a254cb5f

Strauss, V. (2014, October 18). Leadership mess in L.A. schools could be a movie - but you wouldn't believe the plot. *The Washington Post*. Retreived from: https://www.washingtonpost.com/news/answer-sheet/wp/2014/10/18/leadership-mess-in-l-a-schools-could-be-a-movie-but-you-wouldnt-believe-the-plot/?utm_term=.1bb8dfe1a834

Ten critical components of school transformation. (n.d.). Retrieved December 13, 2016 from https://www.microsoft.com/en-us/education/school-leaders/school-systems-planning/components.aspx

EdTechTeacher Summit. (n.d). Retrieved November 10, 2017 from http://ettsummit.org/

The Times Editorial Board. (2014, October 16). LAUSD Supt. John Deasy's resignation is no cause for celebration. *The Los Angeles Times.* Retrieved from http://www.latimes.com/opinion/editorials/la-ed-deasy-resigns-as-lausd-superintendent-20141017-story.html

Torres, Z. & Blume, H. (2015, September 5). After John Deasy, LAUSD faces a tough choice: Play it safe or take another risk?. *The Los Angeles Times.* Retrieved from: http://www.latimes.com/local/education/la-me-lausd-superintendent-20150906-story.html

U.S. Census Bureau (2013). *B28008: Presence of a computer and type of internet subscription in household, 2013 American Community Survey 1-Year Estimates*. Retrieved from https://factfinder.census.gov

Van Knippenberg, D., De Dreu, C. K., & Homan, A. C. (2004). Work group diversity and group performance: an integrative model and research agenda. *Journal of Applied Psychology, 89(6),* 1008.

Weiner, J. M. (2014). Disabling conditions: Investigating instructional leadership teams in action. *Journal of Educational Change*, 15(3), 253-280.

Weiner, J. M., & Higgins, M. C. (2017). Where the two shall meet: Exploring the relationship between teacher professional culture and student learning culture. *Journal of Educational Change*, *18*(1), 21-48.

Yin, R. K. (2013). *Case study research: Design and methods*. Sage publications.

Yin, R. K. (1981). The case study crisis: Some answers. *Administrative science quarterly*, *26*(1), 58-65.

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