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Innovation to What End? Exploring the Dynamic Landscape of Texas Teacher Preparation Pathways

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Abstract: The teacher education and preparation marketplace is a complex mix of traditional and alternative programs. Though prior studies have identified a great deal of variation across these programs, an analysis of innovation has been limited. Drawing on theories of organizational innovation, and specifically, dimensions of innovation related to organizational structure, processes, and outcomes, we conduct an exploratory study of innovation in Texas' teacher preparation marketplace. This descriptive study of teacher preparation programs includes an analysis of state and national data across three years (2014-2017). Data also include results from a content analysis of 30 sample program websites. Although most programs met accountability requirements, we found few programs signaled innovation related to program, teacher, and workforce characteristics. Rather, we identified organizational assimilation as programs adopted similar features to remain competitive. Our analysis suggests programs should critically unpack what it means to be innovative in a dynamic and competitive teacher preparation marketplace.

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¿Innovación con qué fin? Explorando el panorama dinámico de las vías de preparación de maestros de Texas

Resumen: El mercado de la formación y preparación docente es una combinación compleja de programas tradicionales y alternativos. Aunque estudios anteriores han identificado una gran variación entre estos programas, el análisis de la innovación ha sido limitado. Basándonos en las teorías de la innovación organizacional, y específicamente, las dimensiones de la innovación relacionadas con la estructura organizacional, los procesos y los resultados, llevamos a cabo un estudio exploratorio de la innovación en el mercado de preparación docente de Texas. Este estudio descriptivo de los programas de preparación de maestros incluye un análisis de datos estatales y nacionales a lo largo de tres años (2014-2017). Los datos también incluyen resultados de un análisis de contenido de 30 sitios web de programas de muestra. Aunque la mayoría de los programas cumplieron con los requisitos de responsabilidad, encontramos que pocos programas señalaron innovación relacionada con las características del programa, los maestros y la fuerza laboral. Más bien, identificamos la asimilación organizacional como programas que adoptaron características similares para seguir siendo competitivos. Nuestro análisis sugiere que los programas deberían desglosar críticamente lo que significa ser innovador en un mercado dinámico y competitivo de preparación docente.

Palabras-clave: Formación y preparación docente; innovación de programas; política de formación de docentes

Inovação para quê? Explorando a paisagem dinâmica de caminhos para a preparação de professores no Texas

Resumo: O mercado de formação e preparação de professores é uma mistura complexa de programas tradicionais e alternativos. Embora estudos anteriores tenham identificado uma grande variação entre esses programas, uma análise da inovação foi limitada. Com base nas teorias da inovação organizacional e, especificamente, nas dimensões da inovação relacionadas à estrutura, processos e resultados organizacionais, conduzimos um estudo exploratório da inovação no mercado de preparação de professores no Texas. Este estudo descriptivo de programas de preparação de professores inclui uma análise de dados estaduais e nacionais ao longo de três anos (2014-2017). Os dados também incluem resultados de uma análise de conteúdo de 30 exemplos de sites de programas. Embora a maioria dos programas atendesse aos requisitos de responsabilidade, descobrimos que poucos programas sinalizavam inovação relacionada ao programa, professores e características da força de trabalho. Em vez disso, identificamos a assimilação organizacional à medida que os programas adotaram características semelhantes para se manterem competitivos. Nossa análise sugere que os programas devem desvendar criticamente o que significa ser inovador em um mercado de preparação de professores dinâmico e competitivo.

Palavras-chave: Formação e preparação de professores; inovação do programa; política de formação de professores

Innovation to What End? Exploring the Dynamic Landscape of Texas Teacher Preparation Pathways

Over the past three decades, teacher education and preparation¹ has changed dramatically. Though institutions of higher education (IHE) still prepare a majority of teachers in the United States, the rapid expansion of new marketplace options presents a “changing ecology” (Kirst et al., 2015) of teacher education across various platforms, programs, and pathways. Today’s complex preparation marketplace renders previous debates about “traditional” and “alternative” teacher preparation programs (TPPs) unproductive as the nature and scale of variation and competition broadens (Cochran-Smith & Villegas, 2015; Friedrich, 2014; Gatlin, 2009; Grossman & Loeb, 2008). Still, there are some distinguishing features of each pathway important to note. Traditional TPPs typically combine theoretical, pedagogical, and clinical coursework to prepare elementary or secondary educators at IHE. In 2018, 77% of teachers in the US were prepared at traditional TPPs (Partelow, 2019). Conversely, alternative pathways often eliminate or shorten course plans or other components of traditional routes. Whereas traditional programs might rely on institutional policies that dictate when a student might declare a major in teacher education, alternative TPPs may use work experience, academic record, and/or entrance tests to screen candidates for entry (Wilson, 2014). Although traditional TPPs make up a larger share of all programs in the national marketplace, alternative TPPs have grown substantially within the past two decades comprising approximately 31% of the market. Nearly one in five teachers are alternatively certified (United States Department of Education [USDOE], 2016), but these rates vary widely by state.

Introduced in the 1980s by early reformers seeking to deregulate traditional pathways, alternative TPPs promised to improve teacher quality and productivity by efficiently blending coursework with clinical training and fewer licensing and certification barriers (Humphrey & Wechsler, 2007; Kretchmar & Zeichner, 2016). Indeed, reformers adopted market-based discourses to situate alternative TPPs as “disruptive innovations” (Christensen, 2006) to redefine and transform the preparation marketplace. The emergence of new graduate schools of education (nGSEs) characterized as “controversial innovations” (Cochran-Smith et al., 2020, p. 9) illustrate one of these new developments. Cochran-Smith et al. (2020) define nGSEs as TPPs authorized and approved as IHEs that can prepare and endorse teachers and grant master’s degrees, although they are not university-based institutions. These and other boundary-spanning TPPs encourage an investigation of innovation, particularly as the marketplace becomes more diverse. However, what constitutes innovation in TPPs remains ambiguous and contested.

Innovation in Teacher Education

Innovation embraces theories of entrepreneurship and organizational dynamism from business, organizational and management studies, and economics (Burch, 2007; Christensen, 2006). Across these fields, innovation is an elusive concept, but generally understood as “new and creative ideas that challenge conventional wisdom and disrupt the established practices within a specific context” (Torfing, 2016, p. 30). Innovation is often linked to the private sector (Christensen, 2006); thus, reserachers question calls for greater innovation in education and other public-sector fields since principles of innovation emphasize production, processes, and products—market-based factors more readily transferable to the private sector (Sørensen & Torfing 2011; Torfing, 2016). By contrast, education and some public institutions emphasize aspects of human relations and adhere to

¹ Teacher education and preparation is used interchangeably.

bureaucratic systems governed by elected officials and public managers (Burch, 2007), making public institutions more prone to incremental innovation rather than disruptive or radical innovation (Torfing, 2016).

Although teacher education has seen both incremental and radical innovations (e.g., Kretchmar & Zeichner, 2016; Malian & Nevin, 2005), this study builds on recent calls for more expansive and critical examinations of innovation in teacher education (Domínguez, 2019; Ellis et al., 2019; Serdyukov, 2017). We regard innovation as a vehicle to bolster social justice and equity in teacher education, particularly as teacher education policies and practices emphasize accountability and standardization (Sawchuk, 2013; Tatto et al., 2016; Wilson, 2014). From this stance, innovation in teacher education moves “towards a more socially responsible and sustainable meaning for innovation that acknowledges the teacher education debt in reproducing inequities and the humanization of learning” (Ellis et al., 2019, p. 12). We also draw on Sørensen and Torfing’s (2011) definition of innovation because of its insistence that innovation is context-specific. Sørensen and Torfing (2011) define innovation “as an intentional and proactive process that involves the generation and practical adoption and spread of new and creative ideas, which aim to produce a qualitative change in a specific context” (p. 849). Together, these views of innovation are particularly relevant given the need for greater coherence between teachers’ preparation and the increasingly diverse, multi-layered contexts and environments in which teachers teach (Agarwal, 2010; Canrinus et al., 2019; Kretchmar & Zeichner, 2016).

When teachers are not adequately prepared to serve, the disconnect between teacher education and practice is linked to long-term academic, relational, and workforce outcomes such as lower expectations for students of color, limited or static understanding of students’ cultures and identities, reduced motivation or job satisfaction, and increased turnover and attrition (Domínguez, 2019; Ingersoll et al., 2014; Redding & Smith, 2016). A humanistic frame of innovation centering equity, coupled with the tangible and intangible aspects of innovation (i.e., technological tools, improved strategies, or culturally-relevant and justice-oriented approaches) can lead to greater system-wide changes (Serdyukov, 2017). Indeed, some teacher residencies (Guha et al., 2016), grow-your-own programs (Gist et al., 2018), and community-based oriented pathways (Kretchmar & Zeichner, 2016) highlight new developments for recruiting, placing, and retaining teachers with promising results, especially for teachers of color. These programs also feature unique curricula and develop models of ongoing new teacher support to ensure retention (Cochran-Smith & Villegas 2015), but these features are rarely viewed as innovative.

Researchers and policymakers instead associate innovation with reform, change, or variation (Fiske & Ladd, 2001; Koedel et al., 2015; Lubienski, 2003; Sørensen & Torfing 2011). Though innovation and variation maintain some conceptual similarity, variation is a poor proxy for innovation because it emphasizes diffusion, or a program’s “absorptive capacity” to recognize an innovation and then assimilate by applying the innovation internally (Berry, 2002; Peeters et al., 2014; Rogers, 1983). This logic may explain why researchers have largely studied program variation by examining program characteristics and structures across traditional and alternative pathways (Boyd et al., 2008; Gatlin, 2009; Humphrey et al., 2008; Wilson, 2014), rather than how they innovate. For example, studies investigating pathway effectiveness as an indicator of program variation show minimal differences in teacher effectiveness in relation to student achievement or teacher performance outcomes (Floden, 2012; Goldhaber et al., 2013; Koedel et al., 2015). Findings also point to greater variation within preparation pathways than between them (Boyd et al., 2008; Mungal, 2016).

As marketplace options expand, teacher candidates have a range of TPPs to choose from—each promising innovative features. As such, this study offers conceptual and policy implications

for rethinking innovation. Specifically, we outline a conceptualization of innovation in teacher education along three organizational dimensions—organizational structure, organizational processes, and organizational outcomes (Crossan & Apaydin, 2010). The particular focus on innovation through a social justice and context-specific lens allows us to explore organizational dimensions of innovation (structure, processes, and outcomes) in Texas—a context that is arguably the US’s most varied teacher preparation market (e.g., Lincove et al., 2015; von Hippel, 2016). Using three years (2014–2017) of teacher preparation data from state and national databases as well as a content analysis of 30 sample program websites, this exploratory study of innovation in teacher preparation asks: What signals of innovation are represented in Texas’ teacher preparation marketplace indicated by programs’ organizational structure, processes, and outcomes?

Findings show programs demonstrated few indicators of innovation, even though most programs met state accountability and credentialing requirements. Few programs outlined an innovative mission for recruiting and preparing a diverse teaching force or an approach to innovation oriented towards the schooling contexts of culturally diverse students. We attribute the absence of innovation to market saturation and program homogenization whereby programs assimilated by adopting similar features (DiMaggio & Powell, 1983). Our findings inform teacher preparation policies by highlighting the benefits and drawbacks of scaling up program options offering more of the same. In the next section, we draw on institutional theories to discuss forces enabling or constraining innovation.

Theoretical Framework: Institutional Pressures of Innovation

Institutional theory outlines a broad framework for understanding rules and structures, cultural norms, and decision-making authority influencing organizations (North, 1993; Slappendel, 1996). Burch (2007) argued institutional theory provides a useful lens to explore educational innovations and the process for how innovations gain legitimacy and diffuse outward. A key assumption of institutional theory posits external and internal pressures can spur or stymie innovation. Pressures might also force organizations to change established rules and norms or perhaps, influence organizations to adapt to an innovation through diffusion (Rogers, 1983). We briefly discuss these processes in the preparation marketplace by highlighting the role of policies and markets on innovation.

The Role of Policies on Teacher Preparation Innovation

A key source of institutional pressure is state and federal level policies related to accountability in teacher education (Wilson, 2014). For example, the passage of *No Child Left Behind* (NCLB)—a national-level policy that encouraged “new innovative actions” required state and local education agencies to outline innovative strategies for preparing highly qualified teachers (Tatto et al., 2016; USDOE, 2006). However, the extent to which NCLB actually spurred innovation in teacher preparation is debated. Under NCLB, some argue the policy fostered uniformed standards and evaluation mechanisms whereby directives encouraged more homogenization across TPPs as programs adopted similar structures and practices (Kolbe & Rice, 2009; Scribner & Heinien, 2007). Others suggest policies like NCLB, with its emphasis on innovation, can serve to usher in different institutional actors focused on reform (Burch, 2007).

Indeed, non-governmental and private organizations were key actors in developing alternative TPPs outside of IHEs. Although NCLB has since been replaced, alternative TPPs like High Tech High, Relay Graduate School of Education, or Teach for America (TFA) are frequently seen as innovative and critical to the teacher preparation marketplace (Cochran-Smith & Villegas, 2015; Cochran Smith et al., 2020, Kretchmar et al., 2018; Mungal, 2016). When compared to

traditional programs, these programs typically prepare a smaller number of teachers but their ability to innovate is largely shaped by their organizational identity and economic capacity. From an institutional lens, studies show these programs hold greater political leverage and are supported by foundation grants and large corporations able to directly invest in new approaches or support their ability to take risks—opportunities not typically afforded to programs in IHEs or programs perceived with less legitimacy (Kretchmar et al., 2018; Zeichner & Peña-Sandoval, 2015). To be sure, some IHEs also benefited from these public-private partnerships to innovate. For example, the UTeach program at the University of Texas at Austin was initially developed in 1997 as an innovative pathway for mathematics and science majors to enter teaching and was supported by ExxonMobil to spread the model nationwide (Rogers, 1995). Power differentials between TPPs within the marketplace allowed more selective TPPs to market themselves as innovative because they promised to attract highly skilled graduates from selective universities to work in mostly urban schools (Kretchmar et al., 2018; Mungal, 2016). However, simply supplying teachers to work in urban schools with more students of color and low-income students is an insufficient aim for innovation grounded in social justice.

The ability to innovate is also shaped by institutional accreditation bodies such as the Council for the Accreditation of Educator Preparation (CAEP), the American Association of Colleges of Teacher Education (AACTE), or even intermediary organizations like National Council for Teacher Quality (NCTQ). It is argued that increased accountability pressures from such organizations as well as educative assessments of teachers' learning and preparation programs through the Educator Teacher Performance Assessment (edTPA) can lead to new innovative changes in TPPs that predict teachers' classroom performance (Amrein-Beardsley et al., 2013). However, despite the adoption of value-added measures for TPP accountability, there is mixed evidence on whether edTPA actually drives innovation and the mechanisms through which the assessment serves to “support candidate learning and preparation program renewal” (edTPA, 2015). As a tangible innovation (i.e., technological tool) (Serdyukov, 2017), edTPA is only marginally predictive of teacher value-add (Goldhaber et al. 2013), though recent studies identify greater measurement error than previously indicated (Gitmoer et al., 2019). Scholars also raise methodological, technical, and value-based concerns regarding edTPA's scoring design, its reliability, and pinpoint limitations in rubric scores among different groups of teachers by questioning whether the assessment supports broader measures of teacher performance (Amrein-Beardsley et al., 2013; Goldhaber & Hansen, 2010; Tuck & Gorlewski, 2016).

Studies also show negative labor market impacts that “screen-out” teachers of color, ultimately undermining innovative programmatic efforts designed to increase the racial and ethnic diversity of the teacher workforce (Carter-Andrews et al., 2019). Grow-your-own programs and teacher residencies are examples of such efforts (Gist et al., 2019). With teacher residencies being embraced as “innovation at the margins” having “injected a degree of vitality into a stagnating system” (Gaitlin, 2009, p. 473), national and state-level support has followed as programs promise to offer innovative preservice training (Gaitlin, 2009; Texas Education Agency, 2016). By funding these programs, governing bodies signal to other programs that their investment rewards innovation. However, earlier theorizing on organizational change and adoption of new strategies and structures suggests that as organizations attempt to adapt to the institutional environment, inertia will take effect bringing less innovation (Hannan & Freeman, 1984).

The Role of Markets on Teacher Preparation Innovation

Market-based principles of competition and deregulation play a strong role in driving innovation (Beckert, 2010; Hannan & Freeman, 1984). Markets are predicted to weaken formal

structures, reverse tendencies toward isomorphism or homogenization, and improve efficiency and effectiveness, but studies indicate these effects vary by organization and sector (Davies & Quirke, 2007; DiMaggio & Powell, 1983; Lubienski, 2003; Rezuilli et al., 2015). In their study of school choice, Fiske and Ladd (2001) suggest that, while market competition can potentially reduce inefficiency, its impacts on other outcomes may be hard to distinguish since reforms are usually entangled with changes in organizational structures, governance, or enrollment policy. Market effects may also be mitigated by local institutional conditions and the local workforce (Lubienski, 2003). In New York City, another context with many marketplace options for teacher preparation, Boyd et al. (2008) found that increased competition among providers led to institutional isomorphism as programs adopted practices and structures of more successful TPPs, ultimately resulting in less variation and innovation. These findings support Malian and Nevin's (2005) point about innovation: "when half of the industries in a specific area have adopted an innovation, it stops being an innovation and enters a new phase" (p. 10). Whether this phase leads to organizational decline or, perhaps, produces another innovation altogether remains unknown in teacher education.

But, at a time when many local labor markets are experiencing teacher shortages (Castro, 2020; Sutcher et al., 2019), local conditions could potentially spark innovation to solve workforce problems and needs. Lewfis and colleagues (2008) note the shortage of male teachers and male teachers of color spurred partnerships between university-based TPPs and athletic departments to grow the pool of male teachers. Programs like grow-your-own pathways and community-based programs draw on critical orientations of community cultural wealth to offer localized, grassroots teacher preparation and professional development support responsive to context (Gist et al., 2019). In addition to being viable pathways for addressing teacher shortages, innovative programs responding to local needs might adopt curricular themes emphasizing identity-based learning approaches using social justice and anti-racist pedagogies to develop preservice teachers' critical socio-cultural knowledge (Brown, 2013; Kohli, 2019; Matias & Mackey, 2016). When contrasted with the growing market of for-profit TPPs and universities where students are commonly referred to as "customers" (Deterding & Pedulla, 2016), these mission-driven TPPs could be perceived as "niche" programs that signal innovation by addressing socio-cultural, humanistic approaches to teaching and learning.

As new marketplace options promise to offer innovative practices and approaches, some scholars remain cautious. Wilson (2014) states: "it is not clear that contemporary version of these reforms is going to be any more successful than previous ones" (p. 191). In prior work, Gatlin (2009) similarly stated that, despite the "considerable amount of experimentation" (p. 470) in teacher education, the field has "largely remained the same amounting to little more than variations on the traditional route" (p. 471). Domínguez (2019) and Ellis et al. (2019) also articulate similar critiques of TPPs, but make clear that TPPs reproduce inequalities and harm when innovation in teacher education falls short of "troubling what counts as knowledge, as success, as valued culture" (Domínguez, 2019, p. 51). If, as these scholars insist, that much of teacher education is characterized by the absence of innovation, then, in Texas' saturated market of TPPs, what remains unclear is whether market principles of competition and deregulation still hold.

As such, we explore how TPPs display signals of innovation through programs' organizational structure, organizational processes, and organizational outcomes. We define these dimensions as follow: 1) *Organizational Structure*- innovation that promotes diversity and minimizes stagnation; 2) *Organizational Processes*- competitive environments catalyze innovative processes and practices; and 3) *Organizational Outcomes*- innovation that is responsive to new demands with outcomes shaped by technology, changing marketplaces, and broader environmental structures and dynamics (Crossan & Apaydin, 2010). Table 1 provides a detailed explanation of each dimension

and the variables of interest used for data analysis. Examining these dimensions of organizational innovation allows us to clarify the influence of institutional policies and market pressures on TPPs' ability to innovate or conform to the marketplace through diffusion and homogenization.

Table 1

Dimensions of Innovation in Teacher Preparation Programs

Dimension of innovation	Definition and characteristics	Teacher preparation data variables
Organizational structure	Relates to the organizational components, leadership, and structure of the program.	<ul style="list-style-type: none"> • Mission and goals • Cost • Selection procedures • Enrollment demographics • Total enrollment • Board demographics or characteristics
Organizational processes	Relates to internal and external organizational processes for teacher preparation, including candidate's experiences and interactions with curriculum; professors and instructors working with the program; cooperating/mentor teacher(s); university supervisor(s); credentialing requirements (i.e., observations of other teachers, visits to other schools, tests, etc.); mentorship upon exit	<ul style="list-style-type: none"> • Service-delivery for teacher preparation • Advertising and marketing • Curriculum • Teacher supervision; Supervisory experience • Tools for assessments or evaluation (e.g., TExES; edTPA) • Mentoring and on-going support
Organizational outcomes	Relates to the formal and informal "products" of knowledge as demonstrated by program and workforce characteristics	<ul style="list-style-type: none"> • Program completers • Prepared to teach SWD • Prepared to teach ELLs • Prepared to integrate tech • Employment rate • Five-year retention rate • Principal appraisal score

Note. See Table A1 (Appendix) for an explanation of the teacher preparation data variables and their source.

Data and Methods

The Teacher Preparation Marketplace in Texas

We frame our analysis of teacher preparation innovation by examining Texas' varied marketplace. Texas offers a unique landscape to study innovation in teacher preparation for several reasons. As one of the first states to implement alternative teacher certification programs, Texas enrolls and produces the greatest number of alternatively certified teachers and maintains the largest market share for alternative programs in the US. In fact, 12,243 of the nation's 19,158 completers in the non-IHE alternative certification sector were from Texas (Partelow, 2019). Prior research

emphasizes the degree of program variation in Texas by presenting a framework of program types using the following indicators: certification pathway, institution type, market type, and organizational form (von Hippel et al., 2016; Lincove et al., 2015). Lincove et al.’s (2015) typology includes eight categories for TPPs (see table 2); however, we extend the typology by adding two new program types (for-profit university and district programs) based on our updated assessment of programs in Texas and the growing share of for-profit universities (e.g., University of Phoenix) across the U.S. (Deterding & Pedulla, 2016). We also included a new category for district programs to capture potential innovation within programs offered by local school districts where, in theory, training can directly respond to context and meet the demands of local schools (e.g., Dallas ISD)².

Table 2

Typology of Teacher Preparation Programs in Texas (2014-2017)

Program Type	Frequency	%	Cum.
Public university undergraduate	113	20.62	20.62
Public university alternative	88	16.06	36.68
Private university undergraduate	100	18.25	54.93
Private university alternative	61	11.13	66.06
Community college	31	5.66	71.72
Government education agency	48	8.76	80.47
Independent for-profit	75	13.69	94.16
Independent non-profit	16	2.92	97.08
For-profit university	7	1.28	98.36
District	9	1.64	100
Total	548	100	

Note. Adapted from Lincove et al., 2015

Data

We draw on three years of administrative data (2014-2015 through 2016-2017) to provide a descriptive analysis of Texas’ teacher preparation marketplace. We used program-level files from the Texas State Board of Educator Certification (a department within the Texas Education Agency [TEA]) and the U.S. Department of Education’s Title II Reports. The timeline for this data reflected a state statute mandating TPPs to collect comprehensive data at the program level beginning in

² In specific cases, we encountered a lack of clarity as to the appropriate program-type label based on available program data and exhaustive program website searches. This was especially true in situations where it was unclear whether a program should be classified as a for-profit versus a non-profit organization. In these instances, we contacted programs directly to elicit further information.

2014. At the time of our analysis, the most recent year available was for the 2016-2017 academic year, providing us with three total years of data (TEA, 2017). Each source provides aggregate characteristics of teacher preparation at the program level across multiple years. We used both data sources to triangulate state and national-level program reporting requirements by merging programs according to a unique program code identifier. The final dataset included multiple variables for each program-year observation such as: enrollment size and demographics, reported indicators of program selectivity, quality, and some measures representing student outcomes. Table A1 in the appendix includes a detailed list of each variable and whether the information was collected and reported from TEA or the Department of Education's Title II office. Table 2 displays the distribution of preparation programs by typology.

Using these data sources, we describe elements of innovation based on program, teacher, and workforce characteristics. To extend our findings, we also included data from a qualitative analysis of sample programs because innovation involves both qualitative and quantitative components (Slappendel, 1996). Specifically, we conducted a website content analysis of programs by examining key areas where programs might signal innovation: mission statements, course listing, cost and fees, target audience, clinical training/student internship experience, etc. Website analysis is especially useful when access to the inner workings of an organization is limited, but affords researchers the opportunity to capture shifts in programmatic structure (Cochran-Smith et al., 2020). Websites also provide important informational elements that show how programs differentiate through recruitment and marketing strategies or techniques. For example, Lubienski and Lee (2016) used website analysis to examine school mission statements as a formal marketing tool by assessing how organizations differentiate and respond to innovation. Given the large number of TPPs in Texas, we selected a small sample of programs for the website analysis by identifying five of the highest enrolling programs from each type (Table A2, Appendix). Our sampling method resulted in 30 distinct programs across the three years. Although some programs repeatedly enrolled the highest number of students, this approach allowed us to understand signals of innovation and program features across our typology.

Data Analysis

We drew from innovation literature (Malian & Nevin, 2005; Sørensen & Torfing 2011) and a recent review of teacher preparation research (Cochran-Smith & Villegas, 2015) to focus on three dimensions of innovation in TPPs: organizational structure, organizational processes, and organizational outcomes (Crossan & Apaydin, 2010). We employed descriptive analyses to observe the distribution of program-type across all three years and to explore signals of innovation in program characteristics. Descriptive analysis relies on low-inference, low-assumption methods useful for identifying and describing trends and variation in exploratory research (Loeb et al., 2017). Accordingly, findings do not provide causal explanations for the source of TPP variation and the effect such variation has on teacher and student outcomes. Rather, our findings may generate future hypotheses and investigations of these causal mechanisms.

The website analysis was narrowly focused on how programs pursued a strategy for innovation by signaling differentiation to prospective teachers (Lubienski & Lee, 2016). We used a directed approach to website content analysis (Hickey & Kipping, 1996), which allowed us to analyze each program's website according to variables within the dimensions of innovation framework. To do this, each researcher scanned half of the sample websites ($n=30$) paying close attention to mission statements, screening procedures, course listing, cost and fees, target audience, and clinical training/student internship experience and recorded findings in a qualitative coding matrix (Table A3, Appendix). Given the inductive and exploratory nature of our research, we

engaged in ongoing and intensive discussion to reach consensus about program elements to promote reliability. To resolve unclear or ambiguous information, we sent emails to the program's contact person to ensure validity. By integrating the descriptive data with the content analysis, our findings allowed us to identify observable patterns across programs' structures, processes, and outcomes across all programs, while also showing how programs qualitatively signaled innovation to prospective teachers on their websites—a primary marketing tool.

Limitations

The findings presented in this study are limited in the following ways. First, our data collection efforts were exploratory, with an eye towards understanding innovation in teacher preparation. The qualitative website analysis does not offer a full picture of innovation across the sample programs. Since websites are primarily used for marketing, we recognize websites are limited data sources, and may not shed light on unique innovations occurring in practice. Secondly, our findings also do not offer causal links between TPP characteristics and programmatic innovations or causal associations between specific program types and outcomes. Rather, we sought to better understand the landscape of market providers by attending to dimensions of innovation, or lack thereof. Finally, the final analytic file was limited to three years of program level information beginning in 2014. Programs are constantly changing, updating their websites, and addressing new external or internal demands.

Therefore, our study of innovation is, by definition, a limitation since what qualifies as innovation is largely unpredictable and may reflect particular market needs (Torfing, 2016). As such, although Texas represents a large and dynamic market, findings from this study are not necessarily representative of markets in other states. Indeed, Preston et al. (2012) noted that “educational practices cannot be deemed innovative in an absolute sense” rather, “innovations must be considered in terms of their relative prevalence in a local and state context” (p. 1). In other words, what is considered an innovation in one market might not translate to other contexts.

Findings

In this section, we elaborate our findings by focusing on the dimensions of innovation (organizational structure, organizational processes, and organizational outcomes) as they relate to key measures of our analysis, which include program, teacher, and workforce characteristics. Despite the competition in the market, independent for-profit programs dominate the Texas TPP market in terms of teachers trained and certified. Among each program type, half produced at least 100 certified teachers annually with independent for-profit programs, along with a handful of other non-university-based models, enrolling more prospective teachers of color representative of the state's K-12 student population. Overall, our findings suggest an increasingly heterogeneous and complex marketplace of TPPs by program type and characteristics.

Program Characteristics

To examine aspects of organizational innovation, we focused on three program characteristics: 1) enrollment trends and demographics, with special attention on the enrollment of teachers of color, 2) program completers; and 3) supervision.

Enrollment Trends

Enrollment trends reflect important features about a program's identity and structure. We display these trends in Table 3. On average, programs enrolled approximately 224 students, however there is substantial variation between program types. The independent for-profit sector enrolled

more students than any other program-type (630 students), but a select group of for-profit programs skews average enrollment. Online programs such as Texas Teachers of Tomorrow (A+ Texas Teachers), iteach Texas, and Web-Centric Alternative Certification Program collectively enrolled approximately 39,772 students in 2017. The for-profit program Texas Teachers' of Tomorrow used enrollment numbers as a key marketing strategy. The website boldly stated: "approximately 55,000 teachers have been hired from the program since 2005," which is more than most programs combined. For many online programs, however, student enrollment may include out-of-state candidates seeking preparation for their local context and not necessarily for entry into Texas' workforce. Information on iteach Texas' website notifies prospective teachers that the program is based in Arizona and out-of-state candidates must first obtain Arizona certification prior to gaining licensure in the candidate's home state. Within the past few years, there has been an increase in the number of out-of-state candidates. In 2012, data indicated 2,015 teachers were awarded teaching certificates through out-of-state programs, whereas in 2016, approximately 14% (3,515 teachers) were certified through an out-of-state program. Of these 3,515 teachers, nearly 75% found employment during the 2017 school year (Ramsay, 2018). Teacher shortages remain a pressing concern across the state (Partelow, 2019), thus, providing a remote option for out-of-state candidates to acquire teacher training could be perceived as a signal for innovation in response to workforce needs.

Public university undergraduate programs have the second highest average student enrollment (321 students) with private university alternative programs (41 students) and for-profit universities (16 students) enrolling the lowest average number of students. Independent nonprofit and governmental education agencies both enrolled an average of 140 students across the three years. Such a wide range in enrollment totals by program type suggests program leaders likely deploy different marketing, recruitment, and program replication strategies to differentiate in the marketplace. An example of this differentiation was noted on Dallas ISD's website showcasing its localized approach to innovation in teacher education and certification:

In partnership with Dallas ISD Professional and Digital Learning Department, the Dallas ISD Alternative Certification Program enhances the alternative teaching route by providing a standards-driven training program where future educators can engage with others, explore and practice the newest and innovative approaches to teaching, and develop a deeper understanding of their impact on student achievement in the Dallas Independent School District.

Surprisingly, no other program used similar language about innovation or innovative methods to describe their approach to educator preparation. Programs instead provided an overview of its structure and overall course plan, without signaling any unique or innovative features.

As previously noted, another signal of organizational innovation is a program's ability to respond to workforce needs within the external environment. McLennan Community College offered such cues in its mission statement: "The mission of the Alternative Teacher Certification Program is to provide the development of quality teachers through an excellent alternative certification program in a community of learners that meets the needs of local school districts." With broader workforce challenges recruiting and retaining teachers of color, we focused on demographic enrollment trends relating to candidates of color in TPPs. Descriptive results of enrollment demographics demonstrate that students of color represent approximately 51% of total enrollment across all programs, which varies significantly across program typology (see Table 3). Students of color in public and private university programs (both traditional undergraduate and alternative models) represent between 43-49% of total enrollments. A larger share of students of

color enrolled in non-traditional, four-year university programs with around two-thirds of enrollment at each of the following program types: community college, independent for-profit, independent non-profit, and district. In fact, racial and ethnic enrollment in these programs is more representative of the K-12 student population in Texas, compared to public or private university programs. However, with the exception of independent for-profit programs, these program types typically prepared fewer students compared to traditional public university programs.

Racial and ethnic differences in enrollment could be attributed to a program's stated mission, which offers information on how programs intend to differentiate in the market (Lubienski & Lee, 2016). However, our analysis revealed few programs included a program mission or vision statement on their website. We identified nine programs with a demonstrated commitment to teacher education for social justice or equity in the mission or vision statement, but these programs were private or public university programs embedded within a School or College of Education and associated with a broader institutional mission (see Table A3, Appendix). Another program signaling teacher education for social justice or equity in its mission statement was iteach Texas: "iteachU.S. is committed to preparing an educator preparation workforce that reflects the diversity of students in classrooms across the nation, and to drawing talent from all communities in order to provide the best and brightest educators to America's children." Similarly, YES Prep included a commitment to "Eliminate Educational Inequity to Advance Social Justice" as a core value for its program.

The absence of a mission or vision statement in other programs indicates a missed opportunity for programs to communicate or distinguish its values, orientations, and goals towards innovation for equity and justice. Programs instead enhanced their market positions by highlighting features such as cost and fees, areas of certification offered in the program, and, in some cases, systems for supporting teachers. For example, some programs offered a wide range of elementary and secondary certification areas, while others, like North American College, only offered certifications in secondary areas (i.e., Mathematics Teaching 7-12; English ELAR 7-12; Social Studies 7-12). We elaborate on these program features in our qualitative analysis in the following sections.

Program Completion

Program completion is a key organizational outcome useful for predicting the supply of new teachers by program type. It can also indicate the reserve pool of potential teachers who complete a program, but do not enter the Texas teacher workforce. Compared to enrollment trends, results show less variation regarding the average total number of annual program completers.

For example, the independent for-profit and public university undergraduate programs complete the highest average number of students annually (293 and 169 students), while district programs complete an average of 158 students (see Table 4). Public university alternative and government education agency programs completed an average of 101 and 103 students per year respectively. Within the government education agency type, Region 04 Education Service Center completed the largest average share of students (557) annually. The program's high enrollment rate corresponds with its online brochure, which marketed its program as one that "stands out as one of the only certification programs statewide that supports every stage of your career in education—teacher, counselor, principal, and superintendent." Although the for-profit sector produced a high annual rate of new Texas teachers (completers), most came from Texas Teachers of Tomorrow (A+

Texas Teachers), which reported 4,129 completers in 2017. Alongside enrollment trends, the for-profit sector has substantially outpaced all other program types for market supply. In fact, across the three years observed, A+ Texas Teachers produced nearly six times the total number of completers as Texas State University, the largest public, undergraduate university program by teachers produced. Personal quotes and student testimonials were posted on eight program websites to showcase students’ overall experience, some of which included quotes about educational engagement, quality of instruction, course content, and academic advising, but specific data on annual enrollment versus completion were absent.

Table 3

	Public univ UG	Public univ Alt	Private univ UG	Private univ Alt	Community college	Gov ed agency	Ind for-profit	Ind non-profit	For-profit univ	District	All
Female	0.78	0.75	0.77	0.74	0.71	0.71	0.67	0.70	0.85	0.66	0.74
Students of color	0.49	0.49	0.46	0.43	0.63	0.46	0.66	0.65	0.39	0.67	0.51
Latinx	0.33	0.30	0.25	0.24	0.47	0.30	0.49	0.36	0.20	0.31	0.33
Asian	0.03	0.02	0.02	0.01	0.03	0.02	0.03	0.04	0.01	0.05	0.03
Black	0.11	0.13	0.17	0.15	0.10	0.12	0.13	0.23	0.15	0.29	0.14
White	0.51	0.51	0.54	0.57	0.37	0.54	0.34	0.35	0.61	0.33	0.49
Two or more races	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.03	0.02	0.02
Total enrollment	320.75	182.99	65.95	41.41	134.55	140.94	630.35	137.31	16.14	98.44	224.23
N	113	88	100	61	31	48	75	16	7	9	548

Note. Demographic information for enrollment of Native American and Pacific Islander students is omitted here because average enrollment for these two groups represented less <1% across all program types.
Student Enrollment Demographics by Program Typology (2014-2017)

Supervision

The rate at which candidates complete programs may depend on supervision support and training systems. Average program characteristics related to teacher candidate field experiences and supervision indicate some differences that may signal program design innovation. For example, Table 5 shows that all programs provide about 627 hours of supervision per student-teacher and 56 hours of mentoring and induction support per student program completer. Whereas supervision hours represent the total hours student teachers are required to be in the field honing their skills, mentoring and induction support occurs upon employment and after successfully completing a program. Supervision and mentoring supports vary by program. Programs with a “niche” status—such as government education agency, district, and independent non-profits reported more average hours for student teaching (866 and 1053 respectively). Meanwhile, independent for-profit programs required an average of 496 hours of supervision for student teachers. As previously noted, most independent for-profit programs appear to highlight quick preparation and certification as a marketing tool. These differences suggest that across some programs teachers may receive days or weeks of additional field-based training, while teachers in other programs do not. Of course, we do not suggest more supervision hours is an indication for innovation, rather, we highlight this program characteristic because evidence suggests compressed, accelerated programs that fail to offer immersive, carefully designed preparation experiences undermines program coherence, reduces teacher learning, and, in some cases, upholds inequities in schools by ill-preparing teachers for diverse contexts (Agarwal et al., 2010; Ellis et al., 2019; Guha et al., 2016; Redding & Smith, 2016). Indeed, striking this balance is a key aspect of educational innovation. Offering rich, deeply-immersive approaches to teacher education necessitates innovative methods and technologies “for effective presentation, processing, skill development, and real-life applications” to ensure course delivery that is both efficient and effective (Serdyukov, 2017).

Website descriptions of how student teaching experiences were assessed by supervisors generally lacked sufficient details. On Sul Ross State University’s website, a community college program, for example, information indicated teacher candidates were assessed by “cooperating teacher and a university supervisor...for close monitoring, supervision, and support throughout the student teaching experience.” Offering prospective candidates additional information about frequency of contact, methods for supervision, and who supervises teacher candidates is critical to moving toward clinically rich preparation experiences (Burns & Badiali, 2015). By contrast, McLennan Community College offered one exception, providing additional information about the scope of supervision:

The Field Supervisor will observe the Clinical Teacher for a minimum of 45 minutes at least 3 times during the 14 weeks – once in the first third, once in the middle third, and once in the final third of the assignment. Before and after each of these 3 formal observations, the Field Supervisor will conference with the Clinical Teacher and the Cooperating School Mentor. At the time of the 3rd observation, the Field Supervisor will complete the Recommendation for Standard Certification Report along with the campus principal and Cooperating School Mentor.

While there is no prescribed model for supervision, Burns and Badiali (2015) encourage programs to outline policies for supervision in terms of amount, duration, and frequency to further signal differentiation.

Overall, sample programs offered two options for student teaching: (1) an internship pathway that allowed candidates to teach full time in a school or (2) a 12 to 15-week clinical experience, for which candidates were not paid but worked directly with a cooperating teacher. Each option requires different levels of support, but most websites stated only the minimum requirements, which suggests a lack of innovation and a move towards isomorphism. Thirteen of the 30 programs offered no information on how students were assessed or how field supervisors or cooperating teachers were selected and matched with candidates; therefore, students may have less information to make informed decisions about program innovation related to teacher supervision.

Teacher Characteristics

To examine innovation in teacher characteristics, we focused on three measures related to organizational outcomes: 1) prepared to teach students with disabilities; 2) prepared to teach English language learners (ELLs); and 3) prepared to integrate technology. In addition to the descriptive data, we examined websites for coursework or syllabi relating to each outcome.

Prepared to Teach Students with Disabilities and English Language Learners

Most TPPs in Texas provided teacher training focused on working with particular groups of students, including students with disabilities and ELLs. Across all program types and years, programs reported approximately 80% of student completers were prepared to teach students with disabilities and 85% of completers were prepared to teach ELLs. Preparedness to teach students identified as ELLs and students with disabilities did not vary significantly between program types, but there is one exception. Among students prepared in a for-profit university program, only 68% received instructional training related to supporting ELLs. Given the limitations in our data and the small sample of TPPs in for-profit universities or colleges, we cannot determine if this is a systematic difference in program design or inadequate training. A fine-grained analysis of how for-profit programs prepare teacher candidates to work with ELLs and the curriculum used is an area for future work.

However, website analysis of course listings show high-enrolling programs typically offer one general course related to teaching diverse students such as: *Schools, Parents, and Communities; Diverse Populations; English Language Learners and Bilingual Students; Issues in Diversity; Public Education in a Multicultural Society; or Diverse Learners*. To be sure, our study did not include a detailed syllabi analysis, but scholars have critiqued TPPs offering generic courses in diversity or multicultural education, with little insight on culturally-relevant pedagogies focused on equity, social justice, or anti-racism (Milner & Howard, 2013; Tuck & Gorlewski, 2016).

Prepared to Integrate Technology

Preparedness to integrate technology is another teacher characteristic uniquely positioned to signal innovation in TPPs. Similar to preparedness to teach students with disabilities, this program offering is relatively consistent across the typology, with most programs reporting 85-90% of their student completers are prepared to integrate technology into their instructional practice. However, the extent to which programs defined or outlined how technology was integrated within coursework on program websites was ambiguous, as most course names reflected the use of technology in instructional design. For example, one governmental education agency (Region 13 Education Service Center) only stated participants will receive training on “understanding student diversity and instructional differentiation.” Supporting teachers to effectively use technology to improve instructional practices and student success also implies that teacher educators have sufficient knowledge and use of instructional technology, a measure not captured or reflected in our analysis.

Table 4

Student Enrollment and Completion Outcomes by Program Typology (2014-2017)

Measure	Public univ UG	Public univ Alt	Private univ UG	Private univ Alt	Community college	Gov ed agency	Ind for-profit	Ind non-profit	For-profit univ	District	All
Program completers	168.68	101.14	30.78	21.26	32.65	103.50	292.75	91.44	6.14	158.11	115.33
Program acceptance	0.88	0.87	0.80	0.81	0.74	0.78	0.72	0.74	0.75	0.29	0.80
Total applications	553.66	565.63	124.60	141.92	103.82	265.64	1577.5	241.7	31.50	844.33	511.51
Total admitted	447.63	445.25	79.52	82.05	61.32	181.19	709.78	132.1	16.33	180.33	313.49
Students retained in program	534.44	530.30	98.62	107.59	172.36	226.70	1840.4	217.4	10.50	138.56	512.91
One-year employment total	198.72	196.01	30.68	28.25	22.66	89.88	229.49	81.75	4.17	149.78	127.69
Employment	0.75	0.74	0.66	0.62	0.84	0.86	0.87	0.80	0.71	0.88	0.75
Five-year retention total	136.98	132.15	17.95	16.47	19.55	71.44	147.72	34.11	*	78.56	84.55
Five-year retention	0.80	0.79	0.75	0.72	0.75	0.70	0.73	0.53	*	0.51	0.75
Pass test and complete program	0.95	0.96	0.93	0.95	0.96	0.97	0.99	0.98	1.00	0.99	0.96
Passed all certification tests	0.79	0.76	0.80	0.79	0.78	0.82	0.73	0.79	0.78	0.85	0.78
N	113	88	100	61	31	48	75	16	7	9	548

Note. For-profit University data for the five-year retention measures were missing from the years of data accessed.

Table 5*Student Supervision and Instructional Outcomes by Program Typology (2014-2017)*

Measure	Public univ UG	Public univ Alt	Private univ UG	Private univ Alt	Comm unity college	Gov ed agency	Ind for- profit	Ind non- profit	For- profit univ	District	All
Supervision hours prior to student teaching	152.63	134.74	129.50	134.61	132.29	160.00	130.25	323.69	60.00	82.00	142.61
Supervision hours during student teaching	610.49	625.90	561.39	626.49	635.03	866.21	496.40	1053.38	518.57	679.56	626.85
Supervision hours during mentoring	66.79	85.75	39.88	44.44	81.74	37.38	37.89	98.19	5.71	45.94	56.54
Faculty as field supervisors	6.03	3.62	3.27	2.36	0.84	7.67	7.77	7.25	1.43	6.56	4.80
Adjunct faculty as field supervisors	62.79	56.86	11.79	8.20	5.16	7.85	8.52	15.94	7.43	1.67	27.87
Total students in field experiences	233.57	133.89	40.92	27.63	17.68	96.33	68.36	106.88	8.14	119.56	104.33
Prepared to teach SWD	0.81	0.81	0.82	0.84	0.75	0.75	0.77	0.81	0.76	0.76	0.80
Prepared to teach ELLs	0.87	0.87	0.83	0.89	0.82	0.82	0.83	0.84	0.68	0.83	0.85
Prepared to integrate technology	0.91	0.91	0.91	0.93	0.85	0.89	0.89	0.88	0.87	0.86	0.90
Principal appraisal score	0.76	0.76	0.76	0.77	0.66	0.70	0.71	0.76	0.63	0.71	0.74
Percent receiving quality supervision	0.96	0.96	0.96	0.96	0.92	0.95	0.95	0.91	0.97	0.90	0.95
Average GPA	3.29	3.29	3.34	3.32	3.11	3.26	3.03	3.16	3.34	3.23	3.25
<i>N</i>	113	88	100	61	31	48	75	16	7	9	548

Note. See Table A1 in the appendix for a detailed explanation of how each variable was calculated as well as the source of each variable.

Workforce Characteristics

Lastly, we examined three areas of workforce characteristics to assess program innovation: (1) employment rate; (2) five-year retention rate; and (3) principal appraisal score. Each characteristic relates to innovation as indicators of organizational outcomes.

Employment Rate

Most of the high-enrolling sample programs provided no descriptive information on their websites reflecting workforce entry. Of the programs that offer insight on workforce outcomes, the data reflect general information such as, “On average 95% – 99% of our program participants are hired by local school districts” (Region 13 Education Service Center) or “75% Employed Within One Year of Completion (The Texas Institute for Teacher Education). Other websites provided information about job fairs, employment assistance, workforce demand in Texas, identified projected teacher employment based on U.S. Department of Labor statistics, or highlighted links to the state’s accreditation site. Yes Prep, an independent non-profit associated with charter networks, relayed information that over 350 teacher candidates serve in local charter schools and traditional public schools across the area. Some programs described options for student teaching experiences (i.e., internship or clinical), but there was no information linking employment outcomes to these options. To some extent, prospective teachers may not have full information about gainful employment upon completion.

Our descriptive results do suggest variation in one-year employment rates between program types. The one-year employment rate is defined as the percentage of program completers fully employed in the state of Texas in the year immediately following completion of their preparation requirements. Across all program types, three-fourths of all teachers prepared in the state found employment; however, this measure ranges from 62% employment for completers from private university alternative programs to 88% with district programs. The high rate of employment within district programs is intuitive. Teachers trained by a specific district are likely to grow their network and relationships within various district schools and thus more likely to become familiar with open positions.

Similarly, our results indicated a high rate of employment at 86% for teachers trained by government education agencies, which represent Texas’ regional education service centers. Teachers might perceive government agencies with greater legitimacy as these programs tend to be affiliated with specific districts and campuses, offering direct access to hiring managers. At least one of these programs (Region 13) offered ongoing support for students upon completion, which may explain higher rates of employment and retention.

Independent for-profit preparation programs also reported a high rate of employment for teachers one year after program completion (87%). Specific strategies within this sector could explain this finding, however it is difficult to extrapolate what these strategies might be given the complex nature of online programs. Nonetheless, based on the average student enrollment in this sector, such a high employment rate contributes to the overall supply of newly trained teachers in the state.

Five-year Retention Rate

The five-year retention rate by program type reveals different results compared to the one-year employment rate trends discussed above. For example, the public university undergraduate (80%) and public university alternative (79%) programs prepare students with the highest overall five-year retention rates compared to all other program types. The five-year retention rate for the independent for-profit sector is 73%, while teachers from government education agency programs

demonstrate 70% five-year retention. Results for this measure also indicate retention rates for community college preparation programs at 75% on average, which is the average five-year retention rate for all programs.

Principal Appraisal Scores

Finally, when analyzing the descriptive results for average principal appraisal scores by program type several patterns are worth noting. This measure represents the proportion of teachers within each program annually who were rated as “well prepared” or “sufficiently prepared” for their first year of teaching. Scores are derived from a survey administered to principals who oversee first-year teachers at the end of each school year. Principals rate teachers on approximately 30 survey items with responses including: 0 (*not at all prepared*), 1 (*not sufficiently prepared*), 2 (*sufficiently prepared*), and 3 (*well prepared*). To be designated as sufficiently prepared or well prepared, a teacher must receive at least 67% of all possible points included in the survey (TEA, 2017). Although our data reflect average appraisal scores, research suggests teachers from certain programs are likely to sort into particular schools (Jabbar et al., 2019), which may influence a teacher’s score. Nonetheless, the overall average across programs and years indicates 74% of teachers were rated as “well prepared” or “sufficiently prepared” by their principal in teachers’ first year of employment.

Teachers prepared in public and private university programs (traditional undergraduate and alternative) have above average principal appraisal scores (76% -77%) across all programs and years, which is also true for teachers from independent non-profit programs (76%). On the other hand, a number of program-types prepared teachers who were rated with lower than average principal appraisal scores. The community college and for-profit university program types, in particular, prepared teachers who received an average appraisal score of 66% and 63% respectively, which is well below the average for all programs. Independent for-profit and district programs both had an average principal appraisal score of 71%.

Overall, these differences in average scores might be evidence of higher quality preparation resulting in principals’ assessment of successful teaching practices. This is important considering that principals are key human capital managers across districts, often making hiring decisions as well as budgetary decisions around classroom support and training for their staff (Castro, 2020). Furthermore, for policymakers and school leaders concerned about workforce stability and retention, these workforce characteristics illustrate the need to devise clearer organizational processes for teacher preparation curriculum and support, especially for programs demonstrating below average retention or appraisal rates.

Discussion

This descriptive study sought to explore various dimensions of innovation in TPPs related to organizational structure, processes, and outcomes. We defined innovation as intentional actions through which organizations generate new ideas to produce qualitative changes in a specific context (Sørensen & Torfing, 2011). We also highlighted the need for innovation in teacher education to move towards more equitable and justice-oriented aims (Domínguez, 2019; Ellis et al., 2019; Serdyukov, 2017). Our focus on innovation in Texas TPPs has the potential to inform national conversations about how TPPs are meeting the needs of teachers and students. Texas is currently the largest producer of teachers in the nation and prospective teachers in Texas choose from over four thousand accredited TPPs housed within more than 150 approved providers (USDOE, 2016). Yet retention rates, especially for beginning teachers in Texas, are lower than only a few other states, with more than a quarter of all new teachers leaving their initial classroom assignment by their fifth

year (Templeton et al., 2020). Thus, an understanding of how TPPs innovate in Texas has implications for states with expanding market options and similar demographic trends.

Overall, findings from our exploratory study show programs demonstrated few indicators of innovation. Although most programs met accountability and accreditation requirements (with few exceptions of programs that closed or were on probationary status), we did not identify key elements of innovation related to novel program offerings, student supervisor interactions, or unique pathways for supporting teachers upon exiting a program. Rather, most TPPs in Texas exemplified characteristics of isomorphism, in that, the absence of innovation led to overall program similarity across the typologies. By framing this study through a lens of institutionalism (Burch, 2007), one explanation for this lack of innovation is the federal and state policy landscape that sets accreditation norms, licensing requirements, and authorizes policies to regulate teacher education (Boyd et al., 2008; Wilson, 2014). Homogenization may be a natural consequence of accountability pressures related to performance-based, subject-specific assessment administered to teacher candidates during their student teaching assignment (i.e., Texas Examinations of Educator Standards). Some argue large-scale assessments such as edTPA diminish opportunities for innovation, especially among mission-driven TPPs (Amrein-Beardsley et al., 2013; Sawchuk, 2013). In addition to assessments, our findings also indicate isomorphism stemmed from state policies exerting coercive pressures on TPPs resulting in programs adopting similar entry requirements, courses, or field experience models, especially among programs within the same sector.

Despite assumptions about competition in an educational marketplace, our analysis suggests competition had little effect on program innovation. Some organizational outcomes, such as employment and retention rates or principal appraisal scores, might be particularly relevant to innovation since these outcomes may signal differences in candidates' skills, preparation, and longevity in the field. The principal appraisal score, in particular, can provide useful feedback for TPPs to drive innovation, thus future work could explore how principals' ratings might be used to strengthen the candidate hiring process, support induction and mentoring, and lead to better job performance for early career teachers. Our evidence also suggests program organizational structure plays an important role in shaping some of these outcomes. For example, principals might provide higher ratings for first-year teachers from certain programs (i.e., governmental, district-based) because these programs tend to develop "on-the-ground" relationships with principals by establishing direct recruitment pipelines. Furthermore, due to their smaller organizational capacity, district and smaller non-profit TPPs have more flexibility to build such relationships. Future research using qualitative and survey approaches could explore the relationships between programs and principals' assessments to better understand dynamic opportunities for innovation.

Although programs report that teachers are generally prepared to teach diverse students and learners, researchers continue to attribute retention outcomes to differences between how teachers are prepared and the contexts in which they teach (Brown, 2013; Kohli, 2019; Matias & Mackey, 2016). Canrinus et al., (2019) highlight this tension noting that teacher education is "plagued by fragmentation within program coursework and between theory and practice" (p. 192). This is especially true for teachers working in schools serving more students of color and students with economic need where turnover and attrition rates tend to be higher (Redding & Smith, 2016). We conclude that effective teaching requires not just a general set of practices that meet accountability guidelines, but includes approaches for culturally-relevant and transformative practices specific to the student population and contexts in which teachers are embedded (Gist et al., 2019; Kohli, 2019; Matias & Mackey, 2016). Future research might examine innovative practices that use critical frameworks to engage diverse populations.

Another explanation for the lack of innovation across program types could be attributed to organizational capacity. The lack of human capital (instructional resources and staff) as well as organizational resources to increase marketing could, in part, explain the lower share of overall enrollment in some programs. At the same time, we found some programs (i.e., community college and independent for-profit programs) maintained overall lower enrollment, but enrolled a higher percentage of teachers of color. Programs appearing to address teacher diversity gaps—a gap that traditional programs have historically failed to address (Kohli, 2019; Milner & Howard, 2013)—may be perceived as a signal of innovation.

Relatedly, institutional theory suggests organizational legitimacy will influence notions of innovation. The college/university type might be accorded higher levels of intellectual legitimacy given affiliation with an IHE. At the same time, programs categorized as government education agencies or school-based independent nonprofit programs may have higher levels of professional legitimacy as these programs are associated with or are embedded within a district or school entity. As previously discussed, independent non-profit and district programs demonstrated higher principal appraisal scores, a somewhat unsurprising result considering that administrators directly partner with programs, or perhaps, are key stakeholders shaping preparation for teachers entering partner schools.

In terms of programmatic offerings, qualitative data show great variation between sectors. More flexibility in timing (extensive course offerings at night and on weekends or year-round scheduling) and instructional practice (online, face-to-face, or hybrid) could be perceived as a signal of innovation, offering a type of “product” innovation focused on efficiency in teacher preparation (Deterding & Pedulla, 2016; Kennedy & Archambault, 2012). But research on “fast-track” preparation models raise serious concerns about programs’ ability to produce teachers fully capable of working in diverse school contexts (Cochran-Smith & Villegas, 2015; Sawchuk, 2013; Tatto et al., 2016); therefore, the extent to which these organizational processes lead to positive outcomes needs additional research.

It is important to acknowledge that some communication technologies embedded in online programs can likely facilitate innovative learning experiences by reducing teachers’ isolation in the field, expanding access to supervisors, or providing more opportunities for critical reflection and discussion (Cochran-Smith & Villegas, 2015). These flexible, online support systems might be especially useful for prospective teachers working in rural or geographically remote contexts. However, our qualitative data indicate flexibility, as presented on programs’ websites, was largely used as a marketing tool, rather than an opportunity to cultivate deep, independent learning experiences. Given the changing landscape of online teaching and learning in the aftermath of the COVID-19 pandemic, which may have lasting effects on how teachers are prepared to serve in schools (Kraft et al., 2020), studies might seek to better understand how TPPs can effectively use (a)synchronous learning technologies to improve student teaching experiences.

Despite higher enrollment and flexible options offered by most for-profit TPPs in Texas, higher education scholars have critiqued the exploitative practices and marketing tactics associated with some for-profit universities and its consequences on vulnerable students (Deterding & Pedulla, 2016). Evidence of fraudulent practices and poor student employment and earnings outcomes also raise additional equity concerns (U.S. Government Accountability Office, 2010). Though we did not find evidence of such practices, our study raises important questions about scaling up efforts for some online and for-profit TPPs without carefully examining organizational decline, and specifically, why at least four sample programs closed or received warnings from the state. Stronger oversight and reporting requirements for programs that enroll but do not complete a large percentage of

students could ensure students are more informed about outcomes. Additionally, such oversight can ensure programs provide quality preparation for teacher candidates.

Implications

We conclude our discussion with implications for policy and practice. Our analysis suggests programs should collect and analyze additional data points that could signal innovation (Bastian et al., 2021). These data might include processes that match students to schools, innovative coursework, or how well programs respond to local indicators for teacher supply and demand. Indeed, preparation programs partnering with local school districts in which most of their graduates teach can forge strong connections between teacher preparation, induction, and ongoing professional development (Kretchmar & Zeichner, 2016).

A better understanding of innovation within the preparation marketplace can also help inform state and district level policymaking. Our analysis of enrollment and completion trends indicate that prospective teachers are increasingly likely to choose a for-profit alternative program over the traditional programmatic model. Given this finding—paired with the evidence showing traditional programs produce teachers who remain in the profession longer (Nguyen et al., 2020)—innovation in the areas of recruitment, enrollment, and completion among higher quality programs is imperative to overall teacher workforce stability. Student enrollment and completion rates in TPPs are declining both in Texas and nationally (Sutcher et al., 2019). While such trends can be attributed to poor teacher working conditions and stagnant wages (Partelow, 2019)—our typology of TPPs provides some evidence that select programs are organizing in new ways to offer a more community-responsive and niche preparation experience (e.g., community college and small non-profit programs). While the number of enrollees remains small, a better grasp of program design could inform efforts to scale-up these programs in local contexts and incentivize innovation grounded in equity and justice.

Situating the local context as a space for innovation encourages TPPs to highlight the resources embedded within communities to shape practice. It also prompts TPPs to be increasingly responsive to schools and communities. For example, some have pointed to teacher residency programs as a more intentional method of community-based teacher education and preparation (Guha et al., 2016). Therefore, the field of teacher education might adopt more strategic approaches to innovation and program diffusion by reimagining a systems-level design that provides professional supports to promote long-term retention and sustainability (Richmond & Floden, 2018), particularly because teacher preparation is a key moderating factor for teacher turnover and attrition (Redding & Smith, 2016).

This exploratory study adds to existing literature rethinking how TPPs are not only evaluated but are conceptualized as innovative organizations. Future research can build on our findings to address questions the current study was unable to answer. For example, it would be important to understand how innovative programs are incorporating anti-racist curriculum and pedagogy and training into their coursework and fieldwork, with the end goal of better serving students' communities by acknowledging the assets, values, and ways of knowing embedded with these communities (Domínguez, 2019).

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Appendix

Table A1

Variable descriptions and corresponding data sources

Variable Name	Description	Source
Program completers	Total number of students who completed the program	TEA, SBEC
Program acceptance	Number of applicants accepted divided by the total number of applications	TEA, SBEC
Total applications	Total number of applications	TEA, SBEC
Total admitted	Total number of admitted students	TEA, SBEC
Students retained in program	Total number of students retained in a program	TEA, SBEC
One-year employment total	Number of program completers employed within one year of completion	TEA, SBEC
Employment rate	Rate of employment for completers within one year of completion	TEA, SBEC
Five-year retention total	Completers who were issued initial, standard teacher certificates in the school-year five years prior to data collection and who were employed as regular classroom teachers in the fall of the year data were collected are counted as retained	TEA, SBEC
Five-year retention	Total number of teachers retained in the current year of data collection divided by the total number of program completers who gained employment five years prior	TEA, SBEC
Pass test and complete program	This is the number of teacher completers from the data year who passed certification tests and completed all program requirements	TEA, SBEC

Table A1*Variable descriptions and corresponding data sources*

Passed all certification tests	For all tests that the program approved, the percentage of test attempts that the candidates passed	TEA, SBEC
Supervision hours prior to student teaching	Average number of clock hours required prior to student teaching	US Department of Education, Title II
Supervision hours during student teaching	Average number of clock hours required for student teaching	US Department of Education, Title II
Supervision hours during mentoring	Average number of clock hours required for mentoring/induction support	US Department of Education, Title II
Faculty as field supervisors (fte)	Number of full-time equivalent faculty in supervised clinical experience during this academic year	US Department of Education, Title II
Adjunct faculty as field supervisors (fte)	Number of adjunct faculty in supervised clinical experience during this academic year	US Department of Education, Title II
Total students in field experiences	Number of students in supervised field experiences during this academic year	US Department of Education, Title II
Prepared to teach SWD	Percentage of first year teachers with completed Principal Surveys who were reported on average to be “well prepared” or “sufficiently prepared” in this category	TEA, SBEC
Prepared to teach ELLs	Percentage of first year teachers with completed Principal Surveys who were reported on average to be “well prepared” or “sufficiently prepared” in this category	TEA, SBEC
Prepared to integrate technology	Percentage of first year teachers with completed Principal Surveys who were reported on average to be “well prepared” or “sufficiently prepared” in this category	TEA, SBEC

Table A1

Variable descriptions and corresponding data sources

Principal appraisal score	Percentage of first-year teachers in their first employment experience designated as sufficiently prepared or well-prepared based on survey ratings by their principals	TEA, SBEC
Percent receiving quality supervision	Percentage of candidates who completed an internship or clinical teaching who rated field supervision as "always" or "almost always" providing the components of structural guidance and support	TEA, SBEC
Average GPA	Average GPA on all college or university coursework that candidates took before entering the program as reported by the educator preparation program	TEA, SBEC

Table A2*Sample Programs for Qualitative Analysis*

Typology	Year	Program	Enrollment
Community college	2016	Lonestar College - Kingwood	1014
	2017	Lonestar College - Kingwood	997
	2015	McLennan Community College	203
	2017	Sul Ross State University - Uvalde/Rio Grande	174
	2017	Houston Community College System (ACP)	170
District	2016	Dallas ISD	191
	2017	Dallas ISD	150
	2015	Dallas ISD	117
	2016	Pasadena ISD	92
	2015	Pasadena ISD	85
For-profit university	2015	University of Phoenix (at Dallas)	56
	2016	University of Phoenix (at Dallas)	56
	2017	University of Phoenix (at Dallas)	37
	2016	North American College	14
	2015	North American College	9
Governmental agency	2017	Region 04 Education Service Center	893
	2015	Region 04 Education Service Center	806
	2016	Region 04 Education Service Center	635
	2017	Region 10 Education Service Center	400
	2017	Region 13 Education Service Center	273
Independent for-profit	2017	A+ Texas Teachers	35709
	2015	A+ Texas Teachers	7429
	2016	A+ Texas Teachers	5104
	2016	iteachTEXAS	2606
	2017	iteachTEXAS	2365

Table A2

Sample Programs for Qualitative Analysis

Independent nonprofit	2017	YES Preparatory Public Schools Inc	371
	2016	YES Preparatory Public Schools Inc	350
	2015	YES Preparatory Public Schools Inc	329
	2017	The Texas Institute for Teacher Education	223
	2016	The Texas Institute for Teacher Education	149
Private university alt.	2016	Baylor University	300
	2015	Baylor University	286
	2016	Southern Methodist University	137
	2015	Texas Wesleyan University	127
	2015	Southern Methodist University	119
Private university UG	2017	Baylor University	306
	2017	Southern Methodist University	257
	2015	Texas Christian University	243
	2017	Texas Wesleyan University	231
	2016	Texas Christian University	209
Public university alt	2017	University of Texas - El Paso	1315
	2016	Sam Houston State University	1270
	2015	University of Texas - El Paso	1254
	2017	University of North Texas	885
	2015	Texas State University	647
Public university UG	2015	Texas State University	1538
	2017	Texas A&M University	1512
	2016	Texas A&M University	1481
	2017	Texas State University	1450
	2017	Sam Houston State University	1362

Table A3*Website analysis qualitative coding matrix guidelines*

Typology	Program	Mission or vision statement- demonstrated commitment to teacher education for social justice or equity	Coursework- reflects coursework on teaching diverse student populations; teaching for social justice and equity	Workforce entry- includes information on pass or completion rates & workforce entry	Instructional method- primary delivery for content (i.e., face-to face, blended, online)
Community College	Lonestar College - Kingwood	X	X	X	Blended
	McLennan Community College	X	X	X	Blended
	Sul Ross State University - Uvalde/Rio Grande	X	X	X	Blended
	Houston Community College System (ACP)	X	√	X	Blended
District	Dallas ISD	X	X	X	Blended
For-profit university	University of Phoenix-Dallas	X	√	X	Online
	North American College	X	X	X	Blended
Governmental agency	Region 04 ESC	X	X	X	Blended
	Region 10 ESC	X	X	X	Blended
	Region 13 ESC	X	√	√	Blended
Independent for-profit	A+ Texas Teachers	X	X	X	Online

	iteachTEXAS	√	√	X	Online
Independent nonprofit	YES Preparatory Public Schools Inc	√	X	√	Face-to face
	The Texas Institute for Teacher Education	X	X	√	Online
Private university alt.	Baylor University	√	√	X	Face-to face
	Southern Methodist University	X	√	X	Face-to face
	Texas Wesleyan University	X	√	X	Face-to face
Private university UG	Texas Christian University	√	X	X	Face-to face
Public university alt	University of Texas - El Paso	√	X	X	Face-to face
	Sam Houston State University	√	X	X	Face-to face
	University of North Texas	√	√	X	Blended
Public university UG	Texas State University	√	√	X	Face-to face
	Texas A&M University	√	√	X	Face-to face

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