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Practicing with Theory: Teacher Education at High Tech High/Graduate School of Education

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ABSTRACT

New graduate schools of education (nGSEs) are a small but growing phenomenon of graduate-level teacher preparation programs that are dislocated from college and university settings. This article investigates the oldest nGSE in the United States, which is located within the High Tech High charter school network. Drawing on an institutional logics framework, the analysis showed that the logics of innovation and constructivism foregrounded the work of teacher education faculty and students at High Tech High. Driven by these logics, High Tech High adopted a model of teacher education that centered on “practicing with theory,” which permeated not only instruction but also the school’s design and conceptualization. This case suggests that, in addition to curriculum and instruction, organizational structure can be a key consideration for teacher education programs.

Editor’s Note: This article is part of a special issue of *The New Educator* on the topic of teacher preparation at new graduate schools of education (nGSEs) (Cochran-Smith, Carney, & Miller, 2016). This term refers to the small, but growing phenomenon in the United States of new graduate schools that prepare and endorse teachers for certification and award master’s degrees, but are not university-based or formally affiliated with universities as knowledge brokers or degree-granting bodies. The issue draws on data and analyses from a larger Spencer Foundation-funded study of teacher preparation at nGSEs. The issue’s first article locates nGSEs within the context of larger policy, political, and professional trends and describes the larger study. This is followed by four articles, including this one, each of which offers a theorized profile of teacher preparation at one nGSE. The issue concludes with an article that offers a multiple-case perspective by looking across the four profiles.

As part of the larger study, the four cases were chosen for in-depth analysis not only for their “instrumental” (Stake, 2006) value as instances of the phenomenon of teacher preparation at nGSEs, but also for their “intrinsic” individual interest (Stake, 2006) – that is, their high visibility, media attention, and/or institutional and programmatic innovations. Thus, each case profile in

this issue, which is intended to capture the essence of the individual case, analyzes how teacher preparation is conceptualized and enacted in relation to its institutional environment, including its practices, structures, environmental rules, traditions, and beliefs. Because each case site was selected in part because it was different from the others and was intrinsically interesting, the authors of these four articles use different, situationally-relevant theoretical frameworks, concepts, and analytic tools to construct the profiles in addition to the frameworks of the larger study. The four analyses are not intended to speak with one voice or echo one interpretive line; rather, they vary according to the unique aspects of each case. It is important to note, however, that although each of the four profiles is designed to stand alone, it is also linked to all the articles in the issue. Readers will gain the richest interpretation of what makes teacher preparation at nGSEs make sense to their participants and what the controversies are regarding this new phenomenon by reading across the articles in the issue.

Teacher education faces increasing scrutiny and demand for change, and accountability has become a key approach to reform (Cochran-Smith et al., 2018). In response to the press for educational change, “innovation” has emerged as a buzzword in the discourse of reform (Winslett, 2014). To understand change within an accountability- and innovation-driven context, this article investigates the emergence of a new graduate school of education (nGSE) at High Tech High’s (HTH) charter network. As Cochran-Smith et al. (2020) have described, nGSEs refer to the small but growing phenomenon of teacher preparation at new graduate schools dislocated from college and university settings. Their relatively recent emergence connects to broader education reforms. This case is one of several in a larger study of nGSEs and their small but outsized role within teacher education; this and the larger study provide insights about educational change in the current accountability era.

Drawing on this case study, the purpose of this article is to examine how teacher education was conceptualized and enacted within High Tech High/GSE. Research questions included: How did organizational actors involved in teacher education (students, faculty, administrators) make sense of their practices and beliefs? How did they develop and co-develop categories for their experiences, and how were these processes mediated by formal aspects of the organization (i.e., rules, structures, and explicit norms)? To begin answering these questions, the next section describes the theoretical framework and concepts that guided the case study as well as the research methods that informed the analysis. Discussion of the findings is spread across the subsequent three sections, which build on one another and examine: conceptualization and design of HTH as an organization, conceptualization of teaching and learning at HTH, and enactment of teacher education at HTH. Together, these findings show the importance of organizational structure – in addition to

curriculum & instruction – in shaping teacher education programs, including their approaches to theory and practice. I argue that HTHs approach to teacher education can best be understood through a theory-practice orientation that I termed, *practicing with theory*, which is explained below.

Teacher education at High Tech High/GSE: Background and context

The HTH charter network began preparing novice teachers in 2004 and opened its graduate school of education, High Tech High Graduate School of Education – now a fully accredited, degree and credential granting program – two years later. Embedded within HTH are multiple teacher education programs, three of particular significance: (a) the District Intern program, technically not part of HTHGSE but the HTH’s original program for preparing novice teachers; (b) a master’s program for experienced teachers and education leaders that has become increasingly geared toward leadership since its inception; and, (c) a Teaching Apprenticeship program, similar to the residency model utilized in other programs, which began in 2018. Insiders mark clear distinctions between these programs and their places within the HTH umbrella, but to streamline this text for readers, and because the programs are tightly interwoven with each other, I use the abbreviation, High Tech High/GSE, as shorthand to encompass all three education programs in the remainder of this article. I also use the term “graduate student” to refer to the adult students who participated in High Tech High/GSE programs.

This article focuses particularly on the District Intern program and M.Ed. programs in part because the Teaching Apprenticeship program began operations in 2018, after most of the data for this study had already been collected and analyzed. The District Internship was a credentialing program that included evening classes paired with daytime field experiences for interns. They often worked for pay as either learning coaches or teachers usually at HTH but sometimes at nearby charter schools, and they took classes simultaneously. Their pay, along with the relatively inexpensive classes, meant that this program cost considerably less than traditional university-based teacher preparation programs. At the time of this study, the Master’s program offered one degree, an M.Ed. in Education Leadership. While early iterations of the program included a Teacher Leadership degree, it later was oriented more, but not wholly, toward cultivating administrators. M.Ed. students received stipends full tuition paid by the Walton Foundation.¹ Both programs were small, on the order of about one dozen students each, varying somewhat each year. While both programs prepared teachers and leaders to work at HTH and other organizations, the style of instruction for both had its basis in HTH’s core

¹Costs to students may have changed since data collection.

pedagogies. In fact, High Tech High/GSE faculty primarily included HTH K-12 teachers and administrators, and there was considerable cross-pollination between faculty at the K-12 and graduate levels. Their instructional styles, along with the school's organizational structure wherein a graduate school was physically and conceptually embedded within a set of K-12 schools, are unique in teacher education and raise compelling questions for the field.

Institutional theory and teacher education at High Tech High/GSE

This article presents an institutional analysis of teacher education at High Tech High/GSE, drawing on data from an exploratory, qualitative case study of this organization. As noted above, this case was part of a broader cross-case study of teacher preparation at nGSEs. As a field, institutional theory broadly examines enduring social patterns, with emphasis on elements such as rules, norms, policies, logics, and structures across social groups and organizations (DiMaggio & Powell, 1991; Scott, 2013). Institutional theory is thus well-positioned to inform education studies, including studies of teacher education specifically, as it helps trace relationships between policy and practice, a key issue for teacher educators (Darling-Hammond, 2016). The goal of the case study was to understand teacher education at High Tech High/GSE from the perspective of the people within it (Erickson, 1986), rather than to evaluate it or compare it to university teacher education (Cochran-Smith et al., 2020). My analysis was thus grounded in careful representation of the values, beliefs, and practices of the “others” I was studying at the same time that it was intended to contribute valuable and nuanced new understandings to the larger field about the nature of teaching and teacher learning within new organizations.

Within institutional theory, institutional “logics” are defined as the “socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality” (Thornton & Ocasio, 2008, p. 101). As the first nGSE in the United States, High Tech High/GSE was animated by a unique set of logics that drew from the fields of teacher education, higher education, and K-12 education. Therefore, this concept of institutional logics is particularly appropriate in analyzing what this case means in the context of shifting institutional-level patterns in the field of education (Bridwell-Mitchell, 2013; Thornton, Ocasio, & Lounsbury, 2012) – patterns that might include changes to funding streams or the organizational structure of teacher education programs. Because logics mediate between macro-level institutional structures (policies, large-scale resources) and micro-level decision making, this concept was particularly useful when paired with case analysis.

I drew on standard case study methods (Yin, 2009), using Dedoose qualitative coding software to support my analysis. Specifically, the analysis

followed Erickson's (1986) framework of building sub-propositions and overarching propositions using multiple data sources and triangulation. Data sources included 32 in-depth, semi-structured interviews, 70+ hours of observations of teaching and learning contexts (classes, orientations, informal conversations), and 60+ documents such as syllabi, self-evaluations, and accreditation materials. Lastly, I conducted multiple member checks with leaders and faculty to ensure their accordance with my interpretation of High Tech High/GSE. This approach proved effective in helping to not only explore High Tech High/GSE as a meaningful case of teacher education at an nGSE, but also describe where this school's new organizational form – a graduate school embedded in a charter network – fits within a shifting institutional environment. The first article in this issue of *TNE* provides detail about the research design for the larger study (Cochran-Smith, 2020).

High Tech High/GSE as an organization

This section explores High Tech High/GSE's as an organization, which is the larger context for their conceptualization and enactment of teacher education. The section begins with the logics that informed High Tech High/GSE's founding and ongoing development, then discussing school governance, funding, and mission. While innovation was an important logic in the inception of High Tech High/GSE, a core logic of constructivism foregrounded the school's conceptualization and design, as well as its instructional programs, which are detailed in later sections.

Logics: Constructivism & innovation

There was a very clear connection and a parallel relationship between High Tech High/GSE's embedded organizational structure and its approach to teacher education. Two logics mediated this relationship: *constructivism* and *innovation*. High Tech High/GSE operated according to a core logic of *constructivism* (Sánchez, 2019), defined as learning based on students' experiences, community, and individualized construction of knowledge (Abdal-Haqq, 1998; O'Donnell, 2012). Abdal-Haqq (1998) has suggested that the "overarching challenge constructivism presents to teachers and teacher educators is the formidable task of translating a learning theory into a theory of teaching (MacKinnon & Scarff-Seatter, 1997), which in turn raises questions about what teachers need to know and be able to do" (p. 5). Constructivism was conceptualized and enacted at High Tech High/GSE through organizational structures that in turn supported aligned instructional practices. Three principles of constructivism informed specific structures at High Tech High/GSE: (a) authenticity, meaning authentic experiences and an intimate relationship to practice for graduate students, as exemplified by the embedded

structure of the teacher education program, (b) humanism, meaning a focus on individualized, meaningful work, illustrated by the projects each student created as part of their graduate work, and (c) inquiry, which was reflected in a push to continually improve one's craft, as illustrated by the surveys each teacher – from K-12 to the graduate school – provided their students at the end of each project in order to examine what went well and what could be improved. I further discuss the enactment of these principles in later sections.

As I pointed out above, teacher education at High Tech High/GSE was located within a larger organizational design based on constructivist logics. In addition, High Tech High/GSE leaders framed the school as a space for *innovation* (HTHGSE, n.d.a.), particularly as related to its treatment of practice. School leaders have published papers about High Tech High/GSE drawing from the educational change literature (Caillier, 2008) and from improvement science (MacConnell & Caillier, 2016). Both areas of scholarship fit within the general theme of innovation, a nascent but distinct and growing area of study that considers issues, such as design thinking, presumed creative methods to solve extant problems, and the scaling up of those solutions (Sánchez, 2019). Along related lines, within teacher education, several policy reports position practice-based teacher education as a key innovation with the potential to disrupt or to push teacher education forward (Berry et al., 2008; National Council for Accreditation of Teacher Education [NCATE], 2010). The widespread “practice turn” in teacher education (Zeichner, 2012) encompasses a number of different models of “practice,” but one of the most prominent includes in-depth, clinical models of teacher education, such as teacher residency or professional development school approaches. Informed by this model of practice in teacher education, High Tech High/GSE linked its teacher education programming to clinical practice models of learning to teach, both conceptually and structurally. High Tech High/GSE's practice-based program drew on constructivism as the primary logic informing the substantive parts of the program.

My case study of teacher education at High Tech High/GSE suggests some important insights about nGSEs; it also supports important parts of institutional theory while challenging a key supposition. In institutional theory, the concept of isomorphism indicates that organizations adopt “ceremonial conformity” to well-established institutional models, but with loose coupling between “formal structures and actual work activities” (Meyer & Rowan, 1977, p. 341). This means that organizations adapt nominally rather than substantively to models that are well-established in their fields. High Tech High/GSE's hybrid teacher education/K-12 governance structure, which is guided by formal accrediting bodies and draws from public and private funds, positions itself as innovative, much like other charter networks. However, HTH's embedded GSE structure and its constructivist core logic diverged from many other teacher education program designs. High Tech

High/GSE's mission aligns with the growing but less common “progressive” model of teaching and learning reflected in schools that are project- and inquiry-based, such as those within the Deeper Learning network (Mehta & Fine, 2019). Further, the High Tech High/GSE mission has been institutionalized across the organization in both formal structures and norms as well as micro-level beliefs and practices.

My analysis provides mixed support for the theory of isomorphism in that while High Tech High/GSE structures aligned with institutional models, its structures also strengthened key parts of its mission and contributed to tight coupling across the school. Additionally, the multiple logics evident in discourse from school actors indicates that the school was tightly coupled internally but loosely coupled with its institutional environment that might have pushed it in a purely practice-based direction. These dual discourses suggest that it is possible for schools of education to conform to the pressures they are experiencing while preserving considerable autonomy if they pay careful attention to the design of their programs. Along these lines, the following sections show how High Tech High/GSE followed established norms for charter organizations but departed in fundamental ways from the mainstream while also developing a tightly coupled organization (Weick, 1976). This organizational coherence was not the result of the standards and accountability mechanisms so prevalent in schools today, but rather was the result of tight coherence in the beliefs and values that animated all of the participants involved in the organization.

Governance: Distributed leadership and higher education models

Governance at High Tech High/GSE involved a distributed leadership model that aligned with its core logic of constructivism and informed its humanist approach to teacher education. HTH's central K-12 office shared space with High Tech High/GSE, with a number of faculty working in both parts of the organization, reflecting a focus on people more than roles or hierarchies. People across the organization echoed the following explanation:

My hope would be if you walked into a staff meeting in one of our schools, it wouldn't be immediately obvious who was the school leader. The democratic structure is put in place for staff . . . that everybody has an equally important voice. The students do in that K-12 environment also. (Interview #12, Administrator).

Taylor and Cranton (2013) maintain that humanism shares with constructivism a conception of people as “inherently good” (p. 39), adding that both philosophies can traverse individual and social construction of meaning. The treatment of all individuals as equivalent meaning-makers illustrates the importance of humanist and constructivist principles for High Tech High/GSE leaders.

In addition, institutional pressures informed how High Tech High/GSE's governance model took shape, particularly the pursuit of state and regional accreditation of its teacher education programs, a common topic in interviews. Faculty blamed accreditation requirements for structures that seemed arbitrary, if sometimes helpful. One administrator noted with wry humor how the accreditation process necessitated a change in his title:

When we opened the graduate school in 2007, I became the dean. I had told people ... "please don't make me the dean." And so when the approval came back, there I was, the dean. Because I had a doctorate ... so it made sense. I mean, I was ... qualified. (Interview #29, Administrator)

This administrator went on to state that if not for accreditation requirements, there would be no need for a "dean" position. He suggested that it "made sense" that he should be named dean, but his concern was about a desire to protect his role as a member of the teaching faculty. In this sense, the formal structure of having a deanship meant that High Tech High/GSE experienced isomorphic institutional pressures to conform to a more "typical" higher education model (Heugens & Lander, 2009; Meyer & Rowan, 1977). Hence, there was a tension between formal parts of the school's structure and its leaders' goals.

Funding and innovation

Funding was an important consideration for school leaders. It was directly tied to the programming and benefits that High Tech High/GSE could offer to students in teacher education programs and distinguished these programs from other models. For example, High Tech High/GSE's New School Creation Fellowship, funded by the Walton Foundation (HTHGSE, n.d.b), supported master's students, providing all students with stipends on top of fully paid tuition. Similar to the charter network in which it was embedded, High Tech High/GSE drew from public funds as well as generous private donations, in particular from Gary Jacobs of Qualcomm for whom the first school building was named. The intern program had a similar mix of tuition and private moneys as its revenue stream.

Interestingly, a well-publicized policy report by the New Schools Venture Fund (NSVF) – a group that "invests" in educational entrepreneurs and innovators, including High Tech High/GSE – indicated discrepancies between the logics of innovation and High Tech High/GSE's mission. The piece claimed that "innovative schools" could produce high monetary returns on NSVF investments (Childress & Amroffell, 2016). The report defined innovative schools with the following attributes: broad definitions of student success, student ownership over learning, optimized instructional methods and outside experiences such as project-based learning, deep sustained relationships

between students and teachers, and technology-supported learning (p. 7). All of these are consistent with High Tech High/GSE. However, the report also argued that the success of innovation schools should be determined by an economic logic that fit firmly within a neoliberal paradigm in which market-based accountability rules (Cochran-Smith et al., 2017) and private entities, such as NSVF, take over state functions (Furlong, 2013). In other words, innovation logics suggest that in schools, change occurs at the level of practice, and the notions of market accountability and education as an economic good go unquestioned. However, this was not the case at High Tech High/GSE. In fact, High Tech High/GSE actors emphasized equity when describing the school's mission, and thus my analysis revealed a tension between High Tech High/GSE's *innovation* agenda and its equity mission, discussed below.

Mission: Innovative, constructivist approaches to equity and learning-to-teach

Foremost, High Tech High/GSE faculty and students framed the program's mission around equity, which they described as inextricable from the HTH network. As one administrator explained, "The very first statement in our design principles is, 'High Tech High is an equity project'" (Interview #28, Administrator). He went on to explain the importance of equity from a legal perspective to indicate that educators must use legal structures to promote equity goals. By way of example, he pointed out that, across multiple demographic groups, High Tech High/GSE used a "stratified lottery" with weights based on zip codes to legally produce a student body representative of the San Diego metro area. Aligning this equity mission with an innovation agenda, the High Tech High/GSE website described its mission as, "to develop and support innovative public schools where all students develop the academic, workplace, and citizenship skills for postsecondary success" (HTH, n.d.). The term "all students" connotes High Tech High/GSE's equity goal, which is all the more significant given the school's commitments to a diverse student body, which differs significantly from market-based conceptions of performance in which there must be winners and losers. Furthermore, "academic, workplace, and citizenship skills" suggests logics that encompass but expand beyond the narrow economic model of innovation schools (Childress & Amroffell, 2016). High Tech High/GSE's mission includes humanist and constructivist leadership models as discussed above, as well as a goal of equity for a diverse student body. This might suggest that High Tech High/GSE outwardly used the usual language and symbolic forms of innovation while internally subscribing to a different mission (Meyer & Rowan, 1977). However, my analysis showed that the High Tech High/GSE leaders who were responsible for accreditation, funding, and similar issues highlighted both innovation and constructivist logics, publicly positioning the two as mutually important rather than as mutually exclusive.

Conceptualization of learning to teach

The core work within High Tech High/GSE is teacher education. This section examines High Tech High/GSE founders' and leaders' conceptions of the project of learning-to-teach, and the next section describes its enactment. Again, constructivism was the key logic undergirding faculty and graduate student sensemaking of teacher education pedagogy and instruction at High Tech High/GSE. This meant that organizational structures reinforced its instructional approaches, leading to consistent teaching and learning across the organization. As Grossman, Hammerness, and McDonald (2009) have noted, “[t]he divide between theory and practice in teacher education is best exemplified by the historical separation between university-based course work and fieldwork in local K-12 schools” (p. 275). High Tech High/GSE presents a fundamental challenge to this pattern, mirrored in both its structure and its underlying values. As I have emphasized, High Tech High/GSE conceptualized the project of learning to teach at the intersection of theory and practice, assuming that these two were inherently linked together. This theory-practice orientation was reflected, on the structural side, by the choice to embed a graduate school of education within a set of K-12 schools. On the instructional side, this orientation was reflected in the approach that I have termed *practicing with theory* (Sánchez, 2019).

Practicing with theory

My notion of practicing with theory as a way to characterize High Tech High/GSE's conceptualization of the project of learning to teach combines Jackson & Mazzei's (2012) idea of “thinking with theory,” on one hand, with dialectical conceptions of theory and practice, such as Britzman's (1991) conception of theory as an inherent part of practice in a dialogical frame of learning as well as Cochran-Smith and Lytle (1999, 2009) knowledge-of-practice dialectical conception of the relationship between knowledge and practice, on the other. It is important to note that these conceptions are different from some other approaches to practice-based teacher education that emphasize practice first and foremost, even if they acknowledge the complex relationship between knowledge and practice (e.g., Grossman et al., 2009). To develop the concept of “thinking with theory,” Jackson and Mazzei (2012) drew on assemblage theory, which understands social phenomena as complex and fluid. Thinking with theory involves: “disrupting the theory/practice binary by decentering each and instead showing how they *constitute or make one another* . . . [to] create new knowledge” and meaning (Jackson & Mazzei, 2012, p. 5). Whereas Jackson & Mazzei directed their ideas about thinking with theory primarily toward researchers, Britzman and Cochran-Smith and Lytle were more practitioner oriented. Britzman (1991) argued that practice was “always theoretical” (p.

229) and dispelled conceptions of the teacher as a static holder of knowledge; she instead positioned teaching as a profession of continuous learning through dialogic practices. Cochran-Smith and Lytle (1999, 2009) knowledge-of-practice concept emphasized the dialectical relationship between knowledge and practice, describing knowledge as, “constructed in the context of use, intimately tied to the knower, and ... a process of theorizing” (Cochran-Smith & Lytle, 1999, pp. 272–273). As a way to describe High Tech High/GSE’s way of conceptualizing the project of learning to teach, part of what distinguishes the notion of practicing with theory from previous ideas is that it emerged from observations of teaching and learning at a teacher education program embedded within a network of K-12 schools. While High Tech High/GSE’s teacher education approach focused centrally on practice, it also treated theory as indispensable from, and inherently linked to, that practice. Put plainly, practicing with theory meant that individual teachers continuously needed to understand the (theoretical) principles that informed their practice and also needed continuously to reflect on and hone their craft in dialogue with leaders, peers, and students.

In short, High Tech High/GSE teacher educators conceptualized practice and theory as unique but not separable concepts. The work they asked teacher education students to do involved using theory and practice together to create new knowledge for teaching. As a faculty member indicated: “I do think that it’s important to provide some kind of theoretical foundation to what we’re talking about ... we do try to incorporate readings that tie in to ... Like, ‘Oh this is a practical strategy that you can use in your classroom,’ along with, ‘This is the rationale behind using this strategy’” (Interview #20, Faculty). One way that teacher educators taught graduate students to practice with theory was through cycles of reflection that encouraged pre-reflection, or theorizing about what their graduate students expected over the course of a project. Examples of such instruction drew heavily from dialogic, reflective protocols such as “empathy interviews” that assessed problems from insiders’ perspectives (Field Notes, 8/23), as well as “prototyping” of project designs and data-informed decision-making (Field Notes, 8/24). High Tech High/GSE faculty usually described this approach to instruction as stemming from improvement science, often referencing at least part of the “plan-do-study-act” process of individual and organizational learning (Bryk, Gomez, Grunow, & LeMahieu, 2015). Improvement was certainly important in understanding how High Tech High/GSE actors made sense of practicing with theory, but it is important to note that this approach also followed a well-known pattern of inquiry-based learning (e.g., Cochran-Smith & Lytle, 2009).

Enactment of teacher education at High Tech High/GSE

Building on my analysis above of how faculty at High Tech High/GSE conceptualized teacher education, this section shifts to the enactment of teacher

education. My analysis examines behavior across the organization, particularly instruction and the learning experiences of graduate students. In keeping with a practicing with theory conception of learning to teach, faculty and graduate students' experiences rested on three principles related to the core logic of constructivism within High Tech High/GSE, which I have described above: authenticity, humanism, and inquiry, each of which was supported by formal structures (Sánchez, 2019). For instance, the embedded nature of High Tech High/GSE exemplifies the authenticity principle in action. Below, I explain how the enactment of these principles – in terms of structures and instruction – illustrates a practicing-with-theory approach to teacher education.

High Tech High/GSE's teacher education programs paralleled a number of aspects of university programs. They were organized around a course schedule that lasted one year for interns and two years for master's students. Courses varied, but those highlighted in interviews included methods, education law, and a multi-semester inquiry-based course in which graduate students created their own projects based on practice. No class diverged greatly from the types of coursework widely available at universities, but these courses were generally taught by current K-12 teachers and administrators, in addition to full-time GSE faculty. Again, what made these unique included the embedded structure of the program (i.e., within a system of K-12 schools) and the tight coupling between K-12 work and graduate coursework. Both interns and M.Ed. students had real-world experiences as practitioners, or what universities often call a practicum. For the former, this included paid work in schools as coaches, long-term subs, and sometimes teachers of record; the latter shadowed K-12 administrators and helped with administrative duties in apprentice-like roles. A common narrative among interviewees was that graduate students often took problems of practice from their K-12 work, discussed and problem-solved these in their evening graduate classes, and then implemented their new learning the very next day. That this generally happened in an ecosystem in which the K-12 school and graduate program shared the same mission made these transitions quite natural for graduate students who worked in HTH schools. While all M.Ed. students worked with HTH administrators, a number of interns worked at other K-12 schools; faculty reported that efforts were underway to better serve these interns, as the alignment between graduate courses and K-12 work was less natural for this small group.

The "Odyssey" as a microcosm for teacher learning and socialization processes

To provide a more concrete illustration of the teacher education program at High Tech High/GSE, this section explores the Odyssey, an orientation program for graduate students and other faculty new to the HTH organization. Consisting largely of talks, seminars, and independent group work, the Odyssey lasted just over one week and took place at the end of the summer

shortly before teacher education classes commenced in the fall. It provided a self-contained preview that mirrored the type of work and learning in which teacher education students would engage throughout their time in the program. A senior administrator framed the Odyssey as an “orientation focused on rich project design and teachers getting experiences with projects” (Field Notes, 8/7). The Odyssey included introductory classes on topics such as design thinking or collaboration, communal breakfasts and lunches, crash courses in HTH norms ranging from grading to family engagement, film sessions, an in-depth introduction to project design, and other educational and social experiences. Each day, participants engaged in informal socializing as well as in-depth learning about the pedagogies and practices common at HTH. The Odyssey was not simply instructional; it deliberately socialized new teachers and graduate students into High Tech High/GSE’s teaching and learning norms.

In addition to exemplifying the socialization process, the Odyssey experience demonstrated the enactment of practicing with theory. As part of their work assigned in daily seminars, graduate students engaged in cycles of design thinking that included project-based work, collaborating with others to refine their project designs, reflecting on their social and classroom contexts, and analyzing data such as interviews to begin the design process. For example, the introductory activity for all new teachers during the Odyssey was the “project slice,” an intensive two-day project in which participant groups took on the roles of both students and teachers (Field Notes, 8/7; Field Notes, 8/8). For one group I observed, the process included: (a) introductions and community building, (b) an activity in which participants examined artifacts, such as pictures and charts, related to the project and had to guess the topic as a group, (c) discussion of the actual project – a photographic storytelling about the local community, (d) discussion of the process, (e) data collection, including picture taking and short informal interviews, (f) analysis with the group, (g) creation of a “public exhibition,” and (h) the actual exhibition.

The project slice illustrates the implications of practicing with theory for various approaches to practice-based teacher education. By developing reflective protocols and examining data to inform their design work, High Tech High/GSE students were, in essence, asked to practice with theory (Jackson & Mazzei, 2012). They did so within a dialogical, continuous learning approach (Britzman, 1991). For every project, faculty used surveys for feedback on what went well and what could improve, which when combined with their experiences informed recursive feedback loops designed for continuous learning. This theorizing as part of practice also relates to the area within practice-based teacher education that seeks to cut through theory-practice binaries (Dutro & Cartun, 2016; Grossman et al., 2009; Santagata & Yeh, 2014). Grossman et al. (2009) suggested that in order to move beyond “dichotomous views of theory and practice” teacher educators should understand the “iterative and

interactive relationship between teachers’ development of principles for teaching and practical tools.” (p. 278). Practicing with theory assumes that theory and practice are unique but not dichotomous; they are inextricably linked when developing thoughtful teachers.

Structures and student experiences related to teacher education

In addition to teaching and learning, organizational structure was an important aspect of how High Tech High/GSE’s principles were enacted into concrete elements of the teacher education program. The three constructivist principles informing teacher education at High Tech High/GSE – authenticity, humanism, and inquiry – were remarkably consistent across the organization, even as different groups used different language to describe each. For example, High Tech High/GSE faculty often use language such as personalization and reflection, rather than humanism and inquiry. Teacher education students often pointed to project design as a major element of the instruction they received, though some connected it to a theme of authentic learning. The consistency in how principles were understood and enacted across multiple levels of High Tech High/GSE resembles a fractal, in which similar patterns recur from micro to macro scales, illustrated in [Table 1](#). As the table shows, actors’ experiences often paralleled three key organizing principles.

This table represents the experiences of different levels of organizational actors – as related to teaching and learning in graduate courses and more informal spaces such as work with mentors. The columns reflect principles that guided patterns of experience; the rows show that each type of experience was also nested within multiple levels of the organization. This pattern I observed in teacher education at High Tech High/GSE was more profound than that suggested in previous descriptions of teacher learning at HTH, which described a symmetry between adult and student learning (Mehta & Fine, 2015). I found that senior administrators, teacher education faculty, teacher education students, practicing faculty, and K-12 students all participated in parallel experiences across the organization. [Table 1](#) emphasizes the first three groups, given that these were within the scope of my study. The “authenticity”

Table 1. Fractal pattern of organizational experiences.

| | Authenticity | Humanism | Inquiry |
|---------------------------------------|---|--|---|
| Administrators Experiences | Design of organization | Personalization-as-equity | Improvement Science for organizational learning (CREI, Surveys) |
| Teacher Education Faculty Experiences | Design of Projects (for teacher education students) | Protocols for Collaboration & Dialogue | Protocols for Reflection, Classroom Surveys |
| Teacher Education Student Experiences | Project design & Execution of projects | Collaboration & Dialogue | Reflection and improvement for individuals |

column shows how these groups all engaged in design – essentially, creative and reflective problem-solving – whether as part of a project, project design, or organizational design. The second column indicates that each group also followed a “humanist” emphasis on individual goodness and growth for a greater good (e.g., Taylor & Cranton, 2013). Within an organizational context, this led to a personalization perspective from leaders – meaning personalization as an end in itself but also a means to achieve equity – but also dialogical practices for collective learning and improvement. Lastly, the “inquiry” column shows that all groups engaged in formal, recursive reflection described formally as improvement science. This entailed the continuous creation and dissemination of new knowledge for improvement at the organizational and individual levels. Each piece reinforced the others, even filtered through multiple levels of the organization. Taken together, these various organizing and learning principles provide a novel conception of organizing that affords consistency with a high degree of personalization for individuals.

Further, High Tech High/GSE students explained that their learning experiences moved them closer to a practicing with theory approach. When asked about core practices in the teacher education programs at High Tech High/GSE, a student described what she learned as, “rather than giving people wisdom, I want them to come to that solution or conclusion on their own . . . I kind of steer them or corral them in the right direction, or direction that I thought would be meaningful to draw out wisdom to their own experiences.” (Interview #25, Student). Here, the student argued that knowledge came less from one person delivering information to another and more from teachers encouraging students to take a curious stance and construct their own knowledge. She went on to reject the image of the teacher as a “sage on stage,” suggesting that, based on the High Tech High/GSE model, her perspective was that successful educators must learn to collaborate and to center learners – to engage students in active learning. Another graduate student described her drive to recreate in her classroom the collaborative and reflective approaches she learned alongside her classmates: “We were critical friends for each other . . . which I feel like I could bring that back to my classroom working with my own students. They don’t just need to come to me to find out, are they right or are they wrong . . . they can do that for each other. That’s the sort of learning community that I want to set up next year” (Interview #24, Student). These examples illustrated the parallels across High Tech High/GSE’s three organizing principles: *designing* learning environments, centering *people and collaboration*, and *reflecting* on learning for future implementation. Each principle contributes to the overall idea of practicing with theory. Additionally, the emphasis on principles of practice rather than strict rules or specific techniques emphasized that High Tech High/GSE students learned not only teaching strategies but also a disposition toward teaching, which points to an experiential acculturation aspect of teacher education within this organization. The prime example that illustrates the social and

pedagogical dimensions of graduate students' experiences was an orientation program called the "New Teacher Odyssey."

Implications: Designing for practicing with theory and limitations

The key implication of this article is that organizational structure matters when it comes to teacher education. Schools can design programs in such a way that multiple aspects of a program – such as leadership, teachers, and mission – can parallel the underlying logics and pedagogical approaches. In the case of High Tech High/GSE, such structures reinforced the pedagogical and instructional approaches of leaders and faculty.

While practice was an important construct at High Tech High/GSE, teacher education faculty consistently tied it to theory and to dialogical processes, demonstrating a coherent practicing with theory approach to teacher education. Practicing with theory is important in understanding High Tech High/GSE's connections to discourses of innovation and constructivism. The practice turn in teacher education tends to elevate practice over theory in practice-based teacher education (Zeichner, 2012), and its proponents often align it with an innovation agenda in teacher education (Ball & Forzani, 2009; Berry et al., 2008; NCATE, 2010). However, scholars have long problematized and challenged the theory-practice dichotomy and the decontextualization of practice as a stand-alone approach to learning-to-teach. The experiences of graduate students and faculty at High Tech High/GSE illustrate how theory and practice can come together in novel ways when a school of education is intimately connected to clinical practice. The organizational structure of teacher education programs matters; it is of consequence and should be understood as such in the current reform-minded policy context.

Responses/reactions to teacher education at High Tech High/GSE

The first article of this guest-edited issue of *TNE* details some of the critiques surrounding teacher preparation at nGSEs in general (Cochran-Smith, 2020). Among these issues are: redirection of public and private funding away from university-based programs; focusing on technical aspects of teaching, taken to be neutral practices, but which actually deprofessionalize teachers and narrow students' opportunities; and, deliberate efforts to undermine universities as sites of teacher preparation. Most of these issues also relate to a perceived threat to democratic education.

In somewhat of a contrast to the generally mixed reviews of teacher preparation at nGSEs in general, High Tech High/GSE has been largely praised for its general educational approach, including its approach to teacher education. Plaudits have come from multiples sources, including university-based scholars and teacher educators who have highlighted High Tech High/GSE's

consistent focus on *deeper learning* across its K-12 and teacher education programs (Darling-Hammond et al., 2019; Mehta & Fine, 2019). Deeper learning in this case refers to the cultivation of both individual purpose and community, as part of authentic learning experiences (Mehta & Fine, 2019).

Despite the praise, High Tech High/GSE's design and practices bear some similarities to those that earned criticism for other nGSEs. First, in terms of funding, like most other nGSEs, High Tech High/GSE has drawn considerably from private sources to develop their programs, as elucidated in the section on funding above. Whether this means that High Tech High/GSE is a threat to public education or to universities is less clear. The teacher education programs at High Tech High/GSE are relatively small, and its leaders have resisted calls to grow quickly, unlike other nGSEs such as Relay and TEACH-NOW. Also, while a number of faculty at High Tech High/GSE expressed skepticism about the effectiveness of university teacher preparation, I did not find in my interviews and observations that there was consistent denigration of university-based teacher education programs. There was certainly nothing like Gastic's (2014) framing of university teacher preparation as "incoherent," while describing nGSEs as innovative (p. 91), discussed further in Cochran-Smith's article in this issue (2020). Second, like other nGSEs, it was certainly true that the discourse at High Tech High/GSE emphasized practice over theory. However, as I have shown throughout this article, High Tech High/GSE faculty consistently complicated the theory-practice binary and used theoretical principles to inform and improve upon their work, as evidenced by their practicing with theory approach to teacher education.

While it is readily apparent why High Tech High/GSE evades much of the criticism directed at other nGSEs, my analysis does raise several questions specific to this case. For example, while the school stressed a justice and equity mission, across the whole organization, faculty and administrators rarely discussed citizenship or democracy as part of that mission. Additionally, several faculty members explained that their justice mission was focused on what they could do within the organization and not beyond, although others positioned High Tech High/GSE as a model for positive change and pointed to partnerships with other organizations. Further, I found that there was no consensus about whether the school was inward- or outward-facing, which begs the question: what does it mean if change is limited to a small number of organizations, especially those that are well-funded and accept private money that might otherwise go to more public initiatives? Is this a consequence of privatization and choice under the current accountability-based reform paradigm? Further, in the data I gathered for this study, I found that criticism of either the charter school world or of other nGSEs – including those with opposing views – was virtually nonexistent, even while, as described above, several faculty members expressed doubts about the effectiveness of university-based teacher education programs. What does it mean for the discourse

around teacher education reform when educators critique university-based programs based on their structure but refrain from doing the same to schools whose missions run counter to their own? Further research is needed to delve into these questions and reconcile the remaining tensions from this study.

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