

Preparing Teachers for Deeper Learning at High Tech High

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Abstract

This brief is based on a [case study](#) of the High Tech High Intern program, one of seven cases examined by the Learning Policy Institute (LPI) as part of its study *Preparing Teachers for Deeper Learning*. The study sought to explore how leading programs are creating ways to prepare future teachers for deeper learning and equity and to understand the policies needed to transform teacher education systemwide. LPI research teams collected data in 2015–16 through site visits, interviews, observations of university and school classes, reviews of program documents, and surveys of teacher candidates in each program.

Additional briefs related to this research can be found at <https://learningpolicyinstitute.org/product/preparing-teachers-deeper-learning>.

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It is nearing the end of the spring semester at High Tech High (HTH). An HTH intern teacher, Michael, is preparing his 12th-grade environmental science class for the final presentation of a project. Here's how Michael described the plan for the presentation:

We're going to be in our outdoor garden space.... They're going to be kind of like Top Chef–style, gala, expo thing, serving bites of food to guests that come. These bites of food represent a concept or a theme that we've studied over the course of the semester in environmental science. So, for example, we have some students doing composting and how to actually do that, and that's represented in this bite of food.... And then they have these accompanying infographic posters that are going to go with it and kind of educate the consumer about what they're eating, where it's coming from, and whatever messages they want to convey.

The students—13 boys and seven girls in this classroom, nine of whom are students of color—are divided into groups and seated around a table. Michael is helping the groups to hone their presentations of their bite-size portions, which he calls “tastes,” by sharing his impressions of their work to date. By this time in the project, the students have had two practice cooking rounds with critique and feedback, one with a professional chef and the other with HTH teachers.

Michael projects pictures of the tastes at the front of the room and begins commenting on each. The students listen attentively as he gives this public review of their work. He projects a picture of the first group's taste, shares his thoughts on its quality and composition, then moves on to how it meets the requirements of the assignment and how it conveys the principle that the group was working on:

Everything was used, [you] grew microgreens in the greenhouse, and all of the ingredients you used, you really took the things that were in season, that were from that list, and said, “What can we do with these? And how does it fit our message of water conservation and drought and low water?” So I thought that one had an awesome message and really embodied our challenge really well.

He assesses a second group’s taste based on the same criteria: “It broke down those elements of compost, and again there was a clear story and a clear message, and the education and the science was communicated really well on the plate.”

Michael moves on to a third group, commenting on the process by which their taste had evolved from their initial efforts. Then he wraps up his commentary with praise for the whole class. “What you guys did from the first week to this week ... the transformation from that first go-round to this one was completely mind-blowing.”

Michael then gives instructions for the next activity. “I would like you guys to work in your groups, work on your infographics. I’m going to pop around and check in with people.” The students break into their groups and begin the work of taking their project through its final stages.

Introduction

High Tech High’s (HTH) educator preparation program, established in 2004, follows a clinical model in which participants are teaching full- or half-time in the HTH charter network of 13 elementary, middle, and high schools serving students throughout San Diego County, along with 17 other public schools that are in partnership with the program. HTH network schools use a project-based learning (PBL) system to provide all learners with authentic, challenging activities and performance-based assessments, and the program was designed to prepare teachers for this instructional environment. The program is accredited as a California district intern program, and it leads to a teaching credential.

The project described above, coming as it did at the end of the year, was a culmination of Michael’s own first year in the HTH intern program as much as it was the final stage of his students’ work. The project-based teaching practices and dispositions that HTH seeks to develop, and which Michael employed, are aligned with the educational concept known as deeper learning (see “What Is Deeper Learning?”). High Tech High’s preparation program is closely aligned with deeper learning through its four design principles of equity, personalization, authentic work, and collaborative design. Each of these principles governs the practice of HTH teachers and informs the workings of the HTH intern program, connecting the pedagogy and structures of educator preparation and k–12 schools. The principles create a framework for intern teachers that enables them to establish collaborative classrooms and to develop projects through which all learners can access a rich and engaging curriculum.

What Is Deeper Learning?

Deeper learning is both a new and an old idea, rooted in the findings of research on learning over the past century yet also aligned with the needs of 21st-century students. Deeper learning experiences allow students to apply challenging academic content to real-world problems and contexts that engage them in communication, collaboration, and critical thinking. Such experiences equip students with the skills to find, analyze, and apply knowledge in new contexts and situations, preparing them for college, work, civic participation in a democratic society, and lifelong learning in a fast-changing and information-rich world. We identified five dimensions that define the practices and the vision that enable deeper learning for both students and prospective teachers:

- Learning that is developmentally grounded and personalized
- Learning that is contextualized
- Learning that is applied and transferred
- Learning that occurs in productive communities of practice
- Learning that is equitable and oriented to social justice

HTH's program has produced impressive results. A San Diego principal noted that "High Tech High interns work hands-on with students in a context of deep inquiry," and through their experiences, they learn "to establish progressive methods to support the academic and social-emotional needs of children while being immersed in the language and practice that best support students." HTH intern teachers also rate the program highly. In LPI's 2016 survey of candidates, 94% of respondents reported that they felt that HTH's program had prepared them well or very well for teaching.

HTH interns also responded positively when asked about aspects of teaching that address deeper learning, with 100% of respondents reporting feeling well or very well prepared to use instructional strategies that promote active student learning and to relate classroom learning to the real world. Ninety-five percent felt similarly prepared to use practices such as developing students' questioning skills and setting norms for building a productive classroom community. In connection to HTH's equity emphasis, 96% said the same about being prepared to teach students from diverse ethnic, linguistic, and cultural backgrounds and to teach from a multicultural vantage point.

Key Program Elements Support Teacher Preparation for Deeper Learning

Although HTH's educator preparation program is connected to deeper learning in significant ways through its design principles, key program elements shape the learning of candidates and further cement these connections, starting with the **application process**. This process, which also serves as a hiring process for HTH schools, begins with an online application, leading, for some, to an interview with school directors (the HTH term for principals). Selected applicants are invited to a full-day event called "the Bonanza," during which they engage in a variety of activities designed to assess if they can work within the collaborative, personalized, and authentic HTH framework and support all students in their learning. Bonanza activities include interviews with directors and staff, discussion of teaching dilemmas, collaborative project planning and discussion, teaching of a sample lesson or debriefing of a lesson video, a discussion of an article on equity, and written responses to equity issue cases.

At the end of the application process, successful applicants are hired as full-time teachers or half-time apprentice teachers, depending on their previous teaching experience. In 2016, about 65% of program participants were full-time teachers and 35% were apprentice teachers. The HTH program then provides **preservice preparation** during the summer before participants begin teaching, starting with a state-required online Foundations of English Language Development course that introduces new teachers to working with English learners. The summer session also includes several in-person courses in an intensive, weeklong professional learning experience known as the New Teacher Odyssey or, sometimes, simply as "the Odyssey." The Odyssey covers various topics intended to support intern teachers in developing classroom culture, including PBL, subject-specific methods, equity, working with diverse learners, technology, and reading and writing instruction.

The Odyssey also includes Project Slices, accelerated group projects designed and facilitated by HTH teachers and administrators as introductions to PBL. In Project Slices, interns experience the PBL approach themselves, analyze instructional and learning activities as they occur, and use facilitated group discussions to understand how teaching and learning are experienced from all perspectives. An HTH school director described this introductory experience:

Basically, it's a project done in its entirety, in an accelerated fashion.... So the teachers take off the teacher hats and put on the learner hats. And we'll stop and say, "OK, put on the teacher hat. Why did we do what we did?" And it's focused on being student-centered, using inquiry, using protocols to facilitate group interactions and conversations, starting with the learning experience as the content. All of that is modeled.

During the school year, **coursework** is combined with the job-embedded nature of the program. Interns learn about managing their classrooms and creating a culture that reflects HTH design principles in a teaching methods course. The course is co-taught by five HTH administrators and educators who emphasize scaffolded, collaborative learning along with reflective, flexible practice. Other courses focus on instructional design around reading and literacy; setting up and organizing a standards-based reading

program; and strategies and practices such as groupings, class arrangements, and individualized reading. Another course helps intern teachers learn about teaching reading and writing across the curriculum, with an emphasis on how to teach students of varying age levels and those with disabilities.

The program also includes foundational courses that provide intern teachers with information about child and adolescent development, physical and biological development, social and emotional learning, and identity development. A healthy environments course explores topics ranging from nutrition to the attitudes, biases, and assumptions that teachers bring with them to class, as well as student identities and how they are shaped and influenced. These foundational courses also help intern teachers to understand how the constructs of race and class, and the history of schooling and society, have an impact on students' opportunities and experiences in and out of school.

In becoming teachers at HTH, intern program participants are trained in courses in which **faculty model the practices they expect to see in k–12 classrooms**. As one school director put it, “It’s really from day one that they get exposed to this, but not in any theoretical sense. They experience it.” Small class sizes and frequent contact with advisors and mentors show intern teachers how to personalize learning in ways that help students develop deeper learning skills and competencies. The connection between coursework and practice is further enhanced by a common pedagogical tool known at HTH as “Put it To Practice” (PITP). Faculty introduce and model teaching and strategies, and interns practice them, use them in their own classrooms, and come together again to reflect on and revise their practice. Or, as one HTH program administrator described it, “Go try that out with your students. Reflect on how it went. And then, we’ll connect about it next time.” PITP is highly valued; one alumnus of HTH’s program described it in this way:

Everything that we did in class the night before, I could literally do the next day in my classroom. We had homework that was called Put it To Practice. So, I thought, “This [is] great! I can do this in my classroom.” Then I realized that, oh yeah, they’re purposefully doing this so that we can practice this and reflect on it and then talk about it in the next class.

HTH’s intern program emphasizes the **development of knowledge of students and their communities** as a part of the learning process. The authentic nature of HTH projects requires such knowledge, since intern teachers must assess students’ areas of strength and those in which they may need support. They develop this knowledge in part by serving, like any middle- and secondary-level HTH faculty member, as advisors to students in grades 6–12. HTH interns also conduct home visits and participate in Family Collaborative Nights (FCNs), which are evening events where teachers meet with families to discuss additional supports for students. One first-year intern teacher described FCN as an opportunity to

hear from parents about their concerns [and] educate parents on access to books, how to read at home with your child. I think that extra time for parents to come in and connect definitely helps you understand where they’re coming from, and you can learn about a kid from talking to their parents and hearing about what life is like for them.

Finally, the HTH intern program's focus on deeper learning is supported by **school-embedded instruction, supervision, and mentoring**. The instructors in the HTH intern program are HTH teachers and administrators, and all courses are taught by teams of instructors who are expected to help intern teachers unpack their own instructional moves. At HTH schools, school directors act as formal supervisors for intern teachers, bridging coursework and fieldwork by monitoring classroom practice and providing feedback and support. This support is augmented by assigned mentors, who are chosen by school directors in consultation with program staff. Mentors and intern teachers are required to meet weekly to reflect on practice while mentors provide advice and feedback; they may also spend time co-planning. Mentors are also required to formally observe their mentees at least four times a year, and intern teachers are required to observe their mentors at least twice, creating further opportunities for collaborative development of practice. One intern teacher described how this school-embedded system provided her with support in varied ways:

I believe the main thing that makes us so successful in our first year of teaching was the support for everyone. We have a whole network of support, from your mentor who is there for you, to all your teachers who you have been taking classes with.... [M]y director is always constantly checking in with me to see if I need anything. He is always reaching out and is available.

Program Learning Opportunities Align With Teacher Preparation for Deeper Learning

The previous section described how some of the practices, processes, and structures of the HTH intern program enable teacher preparation for deeper learning. Here, the dimensions of teacher preparation for deeper learning that are present across the program are highlighted.

Learning that can be applied and transferred into different and new contexts starts with HTH's commitment to PBL. Real-world experiences—both an integral aspect of deeper learning and one of HTH's design principles—are instantiated throughout the coursework, which is itself designed to be consistent with PBL and to prepare teachers for the demands of meeting their students' needs. Starting with the intensive summer session, the program builds layers of candidate experience that continually reinforce the PBL approach, with its real-world and community connections, student engagement, and teacher reflection and innovation. These experiences can challenge the conceptions intern teachers bring, but they also open up new ways of applying learning for them and for their students, as one intern articulated:

We make it [the lesson] more meaningful to the students through giving the students explorations, as opposed to notes that just tell the students what they need to know. The explorations are all based on questions that they can answer with their knowledge from past years, and it leads them to what we want them to know that's new. So instead of giving them a formula, we're leading them through the thinking behind the formula, and in the end they've got it.

Another important part of intern teachers' experience in applying their own learning in new contexts comes through the emphasis on PITP in their courses, which not only gives them experience in such application, but also builds mindsets of reflective practice.

Personalized learning, or learning that is developmentally grounded and that builds on prior knowledge, is a critical component of deeper learning, and also one of HTH's design principles. It can be seen throughout the program as instructors and intern teachers design projects based on student interests, with appropriate scaffolding to meet all students where they are, but the intern program exemplifies this aspect of deeper learning through structures such as small class sizes and the community of cohorts, mentors, and advisors. HTH courses provide intern teachers with opportunities to focus on the various types of learners and to create lessons for all of them by emphasizing students' developmental needs. Courses also give intern teachers the opportunity to consider their own previous experiences and biases and challenge them to reflect on their relationships with their students, a process further enabled by meaningful engagement with families and communities.

Social and collaborative learning is yet another critical element of deeper learning and a design principle of HTH. The intentional integration of master educators and school administrators with intern teachers shows a community of practice at work. This community is enhanced by HTH's commitment to collaborative work as it is embodied in HTH network schools, from the open and airy design of classrooms that support planning and discussions to the daily team meetings. This collaboration is itself modeling for HTH students because, as one HTH program administrator described it, "They are working with adults who are collaborating productively among themselves." The administrator added, "It's a huge way that our students learn." Prospective teachers are assessed in their ability to work collaboratively, starting with the Bonanza, and the cohort model reinforces collaborative learning, while the exclusive use of project-based learning puts social and collaborative activity at the center of pedagogy.

HTH intern teachers' **learning is contextualized** by design, as the program embeds intern teachers in classrooms and provides them with strategies and tools that they are then encouraged to carry into their teaching. This type of learning occurs in an environment in which instructors engage in authentic modeling of teaching and learning and provide intern teachers with their own opportunities to experience project-based contexts. Interns also learn about students, families, and communities as they engage in the work of teaching, as described above, enhancing their ability to contextualize learning for their own students.

Some of the same features that contextualize HTH intern teachers' learning and give them opportunities to apply it also prepare them to teach for **equity and social justice**. Equity is the fourth of HTH's design principles and is central to the work of the program, starting with an application process that assesses whether intern teachers are a good fit for the type of inclusive environment that HTH seeks to create. The Director of New Teacher Development articulated the importance of the principle in this way:

What we're striving for is a program where our teacher candidates are prepared to step into diverse classrooms and use equitable practices to meet the needs of all the learners in their classrooms.

HTH also creates a direct link between equity and PBL. As the program's academic dean put it:

We think that constructivist, progressive, project-based learning ... is inherently an equity argument.... That's why we're trying to have high-quality projects that engage all learners. That's why we were doing it, the whole time.

The HTH program's structure also exemplifies the program's belief in equitable learning opportunities through coursework in which intern teachers examine their own attitudes and beliefs about equity, language, socioeconomics, race, and gender and are prepared to design projects that allow all learners to access the curriculum and demonstrate their knowledge.

Conclusion

High Tech High's intern program represents a unique approach to educator preparation. Focused on teaching in relation to HTH's commitment to project-based learning and the core principles that inform this commitment, the program is deliberate in its emphasis on equity and service to the community. It is characterized by intentional modeling of desired practice by faculty, practical application of lessons from coursework, and guided reflection. The job-embedded nature of the program, combined with the holistic selection process and alignment between HTH pedagogy and intern program pedagogy, makes for a powerful model of preparation that brings together teaching and teacher education. This model develops educators who are ready to implement student-centered and equity-focused instruction for deeper learning. HTH shows how preparing educators for student-centered experiences that promote equity requires constant dedication to principles that cross over and bind together the preparation and practice of educators.