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Message from Dr Heather M. Rintoul, Editor-in-Chief:

I am pleased to welcome readers to JALE Special Issue Part II, Volume 4, Issue 3. This Autumn Issue focuses on teacher leadership. Complete bios of all writers can be found in JALE Special Issue Part I, Volume 4, Issue 2. My thanks to Guest Editor Dr. Anthony Normore and his writing team for their contributions to both special issues. Enjoy!

Heather Rintoul, Editor-in-Chief.

The Lab School: A Cutting-Edge Response to the Shortage of Math and Science Teachers-Teacher Leaders in High Needs Schools

Kamal Hamdan, *Annenberg Endowed Professor and Director Center for Innovation in STEM Education-CISE, California State University Dominguez Hills*

James Borden, *STEM Lab School Academic Coordinator, Math Teacher and Department Chair, Los Angeles Unified School District*

Cecilia Duenas*, Teaching & Learning Coordinator, Los Angeles Unified School District*

Los Angeles Unified School District has a well-documented need for Math and Science teachers in high needs schools that enroll large percentages of low-income minority students with low achievement in math and science (California Department of Education, 2015; Hamdan, Aguilar, Yee, Nee, Benitez, Medina & Sapp, 2014). High needs schools are "schools with relatively large concentrations of high need students, as well as a high teacher turnover rate and a shortage of certified, experienced teachers and teacher leaders, especially in difficult to fill disciplines such as math and science" (Yee, Nee, & Hamdan, 2014, p.1). We refer to teacher leaders as teachers who engage in not only the teaching and learning processes in classrooms but also in decision-making processes that affect both their classrooms and the whole school (Brooks, Paredes-Scribner, & Eferajorho, 2004; Hamdan, Duenas & Borden, 2014).

Further, according to the classic text by Haberman and Post (1998), teacher leaders in urban schools must possess many characteristics, including "relationship skills… empathy…" (p. 98), skills for "coping with violence," a capacity for "self-analysis," and the ability to function "in chaos" (p. 99). Other researchers identified similar characteristics (Guarino, Santibañez, & Daley, 2006; Robertson-Kraft, & Duckworth, 2014; Ronfeldt, 2012). As part of the Math and Science Teacher Initiatives (MSTI) at California State University Dominguez Hills (CSUDH), this article focuses on the use of Lab Schools to address the shortage of Math and Science teachers in high needs schools in Los Angeles.

Math and Science Teacher Initiatives (MSTI)

MSTI Initiatives are composed of several programs, including two undergraduate programs for students interested in science, technology, engineering, or math (STEM) teaching careers, multiple alternative teacher certification programs in math and science (Transition to Teaching Lab School), and a fellowship program to develop master science teachers. Two of the programs are funded by the National Science Foundation including Robert Noyce Scholarship (undergraduate) and Master Teaching Fellowship (MTF) while another of the undergraduate programs is funded by the State of California. The alternative teacher certification programs are funded by the U.S. Department of Education, Office of Innovation and Improvement (see Yee, Nee, & Hamdan, 2014).

Within the context of MSTI several new teacher and teacher leader training initiatives have emerged. A collaborative partnership between the CSUDH's MSTI programs (e.g., Transition to Teaching Program-TTTI; Online Transition to Teaching Program-TTTII; Urban Teacher Residency Program-UTR) and school sites, MSTI is intended to: (a) provide academic support and enrichment to students utilizing a hands-on, project-based Math and Science curriculum, and (b) allow new, aspiring teacher candidates the opportunity to gain invaluable teaching experience under the guidance of an expert teacher and fulfill observation hours as part of program requirements.

Lab School Design

Lab Schools are middle schools and high schools where teacher candidates lead math and science classes on weekends throughout the school year and four weeks Monday through Friday in the summer to gain experience teaching. Lab schools are intended to have multiple benefits: providing extensive, supervised field experiences for participants, improve teaching practice of veteran and novice teachers, and increase proficiency for participating students (Yee et al., 2014). The prospective teachers are encouraged to try new approaches to engage students in science, technology, engineering and mathematics (STEM) activities. As a partnership, the CSUDH program staff and school/district administrators and teachers at each site work closely together. The CSUDH program staff include: (a) the director of MSTI, who oversees the lab schools, including budget/finances, recruitment and selection of lead teachers, candidate/teacher pairings, and so forth, (b) the TTTII program coordinator who manages all operational and logistical issues at each site (e.g., tracking data, liaising with academic coordinators to meet needs and share best practices, overseeing technology and supplies distribution); and, (c) program assistants who help to provide resources and assistance to the teachers and candidates at each school site, including but not limited to running off copies, finding supplies for projects, and supporting the videotaping of candidates teaching. For purposes of demonstrating the Lab School dynamics the authors will refer to Urban Middle School (UMS - pseudonym) which is one of the Lab Schools used in the initiative. We will focus on outcomes of the Lab School for 2013-14.

School and District Personnel

At UMS, school personnel include the principal and counselor who are involved in the recruitment of students into the program. Five lead science teachers and five lead math teachers along with the lab school curriculum coordinator are responsible for planning the curriculum with candidates and overseeing student teaching in the classroom. In 2013-14, through the lab school at UMS, candidates from all of the alternative credentialing programs at CSUDH, including TTTI, TTTII, and UTR were able to gain invaluable field experience under the direction of an expert, lead teacher and fulfill their program's observation requirements. There were 50 candidates in total. Over half of candidates were Math (58%) and 42% were Science. All candidates did not participate every day. Their attendance was staggered based on various responsibilities outside of the lab school: interview opportunities and acceptance of teaching positions for the fall, and remaining hours of observation required. Some candidates may not have participated in the lab schools as frequently if they had fewer required hours. Also, TTTI/TTTII/UTR programs had different protocols and expectations that affected the number of hours required.

Students

At UMS, the enrollment percentages targeted for lab school participation 2013-14 was similar to the pilot year of the lab school in 2012: approximately 75% of students scoring Far Below Basic (FBB) and Below Basic (BB) in Math and the other 25% of students scoring Basic/Proficient/Advanced as well as some English Language Learners (ELL) and Special Day Class students

(SDC). There was also open enrollment for any other types of students, in order to give candidates exposure to students with a variety of achievement levels/characteristics and an opportunity to differentiate instruction. According to the academic coordinator at UMS, the idea was to maintain the same demographic of students and transition the same students through the lab school program from year to year- 6th to 7th, 7th to 8th and eventually 8th to 9th. In summer of 2013, a ninth grade class was added to the lab school program to help students with the transition process to high school and allow students an opportunity to earn high school credits in Algebra. At UMS, a total of 291 students were enrolled in the summer program across 5 math classes and 5 science classes.

Lead Teacher Planning Curriculum and Instruction

Besides the selection of lead teachers and recruitment of students prior to the start of the Lab School, there are two other activities that are critical to the implementation of the lab schools. One is the curriculum and instruction planning by the lead teachers and the other is the one-day candidate orientation. At UMS, several days were set aside for planning prior to the start of the summer lab school in 2013. This time allowed teachers, especially lead teachers new to the lab school, the opportunity to become oriented with the goals/purpose of the lab school and the expectations of each participating member, from CSUDH program and school staff to the candidates and students.

In focus groups, teachers specified that during planning time, they were able to develop the layout for both the math and science curriculum around the lab school's instructional theme of health. Math and science teachers worked in grade level teams to develop project-based learning activities (PBLs) for students. The transition to grade level teams with math and science teachers working together to create interdisciplinary lessons was an intentional strategy on the part of the academic coordinator to help students make the connections between math and science with real-world applications and move in the direction of Common Core Standards and the Next Generation Science Standards. Additionally, common practices such as Cornell Style Notes and CUBs (Circle, Underline, Bracket) reading were reviewed to make sure teachers were on the same page with their instruction. Grade level teams also utilized their textbooks to identify areas/standards not covered during the regular school year because of testing to hone in on with the summer curriculum.

Teacher Candidate Orientation

At UMS, there was a lab school orientation for candidates in June, 2013. Candidates from all the alternative credentialing programs at CSUDH participated (TTTI, TTTII and UTR), as well as lead teachers and CSUDH program staff. The purpose of the orientation was to inform candidates of the lab school's expectations, including the paperwork they were required to fill out (e.g., observation, analysis, and reflection forms for classes), as well as their portfolio requirements. Since candidates would begin teaching in the fall, it was emphasized that they would start lesson planning and teaching as soon as Week 2 of the lab school. Through the orientation, program staff wanted to make sure candidates were fully aware of their responsibilities and prepared for what was to come in the summer. Additionally, the day's agenda included review of specific teaching strategies such as Cornell Notes and Socratic Seminars that candidates would be incorporating in their teaching, as well as meeting in their instructional teams with the lead teacher, who had the opportunity to introduce him/herself, and present the curriculum for the summer and begin planning.

Typical Lab School Day

At UMS, a typical day for students included two periods, one in math and the other in science. The first period began at 9:00AM and the second period ended at 12:00PM with a nutrition break in between the two classes. For lead teachers and candidates, the day began at 8:00AM and concluded at 1:30PM. To keep everyone on the same page, the lead teachers, candidates, program director and academic coordinator would meet together for 15 minutes in the library each morning at 8:00AM for a briefing on the daily agenda and operational announcements. Then, the lead teachers and candidates would go to their classes to set up and prepare for the students in the last 45 minutes prior to the start of the class.

At 12:00PM, candidates/lead teachers walked students to the gate for dismissal. Returning to the classroom, the instructional team reflected on the day's lesson, with lead teachers providing feedback on how the candidates performed, also offering suggestions and affirmations. After about 30 minutes of debriefing in the class, classroom teams would meet in the library, usually for a half-hour to one-hour professional development session led by the academic coordinator, counselor, or lead teacher(s) on best teaching practices and instructional strategies to implement. Finally, the day would end with a 30 minute whole-group debrief session on what worked/what didn't, shared among both math and science teachers and candidates. Sometimes, the academic coordinator would share his personal observations made during the day, while making rounds to the different classes. Other times, he selected teachers to share or demonstrate what they did in their classes or allowed candidates to share in a "round robin" fashion their experiences and reflections on the day.

Lead Teacher and Candidate Dynamics

UMS site had student teachers/candidates from the CSUDH alternative teaching credential programs in the classroom, simulating a true lab school experience. Lead teachers thus had a different role than their peers at their sister Lab Schools, who were primarily responsible for planning and teaching. Teachers were asked in focus groups how they worked with their candidates during the summer in the classroom. One teacher commented on her process from planning lessons to debriefing with candidates:

> I would let them develop and send me their lessons. I would guide them along the way, help them with transitions, topics and throw ideas in, but I wanted to get them used to creating their own lessons. I would offer my feedback on what to change, what went well, how I would talk about it/envision it. During the break between the two periods, I would do Cognitive Coaching with the candidates during the 20 minutes, allow them to make modifications, and then engaged in more debriefing at the end of the day.

Another teacher emphasized helping her student teachers think about how to approach a lesson in a real classroom setting without the additional support of six adults in the room, asking of her candidates the following questions: "What would you do if it was just you and you had more students? How would you distribute the supplies? How would you go about classroom organization? So, try and provide them with those techniques." Overall, the majority of teachers allowed candidates the opportunity to design their own lessons, providing feedback, pointers and coaching tips as needed. One science teacher, however, took a different approach, modeling the first couple of lessons, designing her own lessons for candidates to teach and intervening more frequently when candidates were having difficulty:

> I did things a little differently. I started out the 1st couple of lessons. If I observed candidates talking for 45 minutes, I would tell them to wrap it up…Today, I made a lesson and each candidate taught a different part. Then, we discussed what worked/what didn't. But, a lot of them have great ideas on different things, PPTs, activities, etc.

Teachers in focus groups were also asked whether or not they approached candidates from the various programs (TTTI, TTTII, UTR) differently. Overall, teachers described having the same expectations of all candidates. Nonetheless, a few teachers did notice some differences between the TTT and UTR candidates which included TTT candidates being more in control of the classroom and generally having more experience with lesson planning. For example, one teacher commented: "One of my TTTTs would create a lesson plan that was ready to be handed off to a substitute- very specific and detailed. My UTRs would more so create an outline of topics that needed to be covered, and I would have to go back with them and flush things out. It was more of a skeletal frame. I had to do more pulling with them." Another teacher commented: "My 2 TTTs planned their own lessons. I would give them some feedback. For my UTRs, I had to plant the idea and they would build from there. They struggled more, they were still thinking about things. I would have to suggest for them to create something in a certain style."

CSUDH program staff played an instrumental role in guiding candidates into one of the alternative credential programs for which they were best suited based on their needs and readiness levels for teaching. The role played by staff may account for some of the differences observed by teachers, as well as the fact that TTT candidates would have their own classrooms in the fall compared to UTR candidates who had an additional year of residency with a mentor teacher before becoming an official teacher of record in the classroom.

Professional Development

Key to the success of the lab school at UMS has also been their structured professional development time every day after class. According to the academic coordinator at UMS, professional development is an opportunity for teachers and candidates to establish their ideas and make sure they are on the same page with their strategies and pedagogy. The professional development largely concentrated on a number of topics from current events and issues affecting education and the teaching field to Common Core Standards and how teachers can navigate the new transitions. PD time also allowed instructional teams to reflect upon what worked and what didn't work during the day's lessons, serving as a good learning opportunity for candidates especially to improve their practice.

Impact of Lab School on School Students

In surveys administered at the end of the lab school, students were asked how much they enjoyed the program overall. The majority of students at each site indicated liking the program "much" to "very much"- UMS (77%). Regarding satisfaction with teachers, students at each site on average agreed there was a teacher who cared about them, a teacher who told them when they did a good job and a teacher who always wanted them to do their best.

Student Attitudes & Behavior

Students were also asked about their interest level in science and math as a result of participating in the Lab School program and how they thought the summer lab schools might influence their behavior during the regular school year in their science and math classes. On average, students agreed that they liked science and math more as a result of participating in the program. Additionally, students agreed, on average, they would earn a better grade in science and math and do better on their science and math homework during the regular school year.

Student Knowledge

Students were administered pre and post assessments to examine what they learned through the course of the summer program. At UMS, each grade level was administered both a math and science pre and post assessment. Notably at UMS, students on average significantly increased their scores on the science assessment from pre to post for all grade levels: 6th to 9th grade. Students on average also increased their scores on the math assessment from pre to post for all grade levels, with 6th, 7th, and 8th grade students significantly increasing their scores from pre to post.

Most Helpful Aspects of the Program

Students were asked to share what some of the most helpful aspects of the lab school were. Some of the most commonly noted aspects of the program included: *Math Lessons/Activities, Science Lessons/Activities, Learning New Things, Having Fun, Help from Teachers, Review of Information, Preparation for the Upcoming School Year.* A few students shared that it was helpful to learn more about math and science because those were the subjects in which they scored low on tests.

Other students mentioned specific math concepts as being particularly helpful, such as, graphing, ratios and proportions, fractions, percentages, and decimals. For science, a few students indicated that they had not learned too much science or were not good at it, so it was especially helpful to have lessons/activities in science. Many students also really enjoyed learning new things and commented on the fun they experienced with the various lessons and activities. Some students commented they particularly appreciated the way in which they were learning and their interactions with their teachers which made learning fun. One student powerfully shared*:* "It was the way we learned and what we learned. Another student reflected: The most helpful thing about the summer program was that the teachers made everything fun…so I liked coming to school and learning. I always looked forward to it." Lastly, students felt that through the lab school they were able to review key concepts in both subjects and also be more prepared for the upcoming school year. One student commented: "We learn more and when we go to regular school I would know it already, while another stated The most helpful thing was that I get a head start on what I'm going to learn in regular school".

Impact of Lab School on Teacher Candidates

In post-summer surveys, TTTI and UTR candidates were asked what the most beneficial aspects of the lab school were. The majority of candidates across programs indicated that the most instrumental part of the lab school experience was the opportunity to create lessons and gain invaluable teaching experience. Comments ranged from: The most beneficial part of lab school was to actually be able to put a lesson together and teach it to the students (TTTI). "First-hand experience; being thrown into a class and finding oneself…letting that natural element take over" (TTTI) to "Being able to create a lesson plan and actually implement it in the class was very useful" and "The "hands-on" training is invaluable" (UTR)..

Other beneficial aspects of the program included being able to observe others and the opportunity to reflect and receive feedback from lead teachers and peers. A UTR candidate shared that it was particularly helpful to get authentic feedback from a teacher new to the field: "Getting the opportunity to work w/ a teacher who had just completed her first year provided authentic and current feedback. Her authenticity allowed for me to ask more intimate questions and build confidence in the direction I was choosing" (UTR).

Lastly, candidates shared that the opportunity to work with students and see their culminating projects was a valuable experience. One UTR candidate commented: "Working with the children. It allowed me to realize I made the right decision. Their final projects and the health fair AMAZED me!!". Another TTT candidate highlighted: "Nowhere will you live such an exciting summer. From getting to know the staff, the students to creating the culminating project".

At UMS, teachers in focus groups shared that they observed improvements in their student teachers (i.e. candidates), through the course of the lab school, with most being satisfied with their candidates overall. One teacher shared: "I thought they were outstanding. One had experience as a Teaching Assistant. They excelled in all areas- managing/talking to kids; readiness in writing lesson plans". Others expressed candidates taking more initiative as the program progressed, honing their skills on how to provide feedback, recognizing when students were off-task, and developing a greater presence in the classroom. One teacher highlighted: "At the start, students felt the candidates were substitutes, and by the end, they recognized them as teachers."

Areas for Improvement

Areas where teacher candidates needed improvement were focusing on all aspects of the class at once, including being able to teach the content and managing the classroom and classroom procedures/organization, as well as further developing their reflection skills. When asked what has worked particularly well during the summer, one teacher sang high praises of his candidates:

> All the candidates have a genuine interest in education and in the field already. We need more people like them. I have many peers who are not as present. We need more peers with the same work ethic/education as all of the candidates I observed. I was proud to work with all of them. It's been a nice environment, and we're all on the same page.

Impact of Lab School on Lead Teachers

An additional benefit of the lab school has been the ability to allow lead teachers to hone their craft through their work with teacher candidates and the professional development offered by the program. One lead teacher commented: "We all want to learn and better our practice. One thing I've been able to do here is compare data and see what's worked, what didn't and why, and that's been nice". Another lead teacher shared: "Also sitting in on the PDs I learned a lot. Like today, on expert groups, at first I thought: 'I've done expert groups, so I don't need to pay attention as much,' but I've never seen expert groups done that way before, so it was something new for me". The academic coordinator at UMS emphasized the following:

> Lab school is not constructed with all of the district mandates which are too constraining to teachers' creativity. In lab school, teachers can look at their craft in a holistic way. Part of lab school's intention is to have teachers who are excited about their craft… The 21st Century Learning Abilities include extending creativity- not just stretching students but candidates and lead teachers to make sure that they're stretched professionally. Lead teachers want to take the lessons they've produced in lab school and use it during the regular school year.

The lab school curriculum has also allowed both candidates and lead teachers the opportunity to prepare for Common Core Standards and the upcoming Next Generation Science Standards (NGSS) with its focus on interdisciplinary lessons and project-based learning. The academic coordinator further commented: "As leads in the lab school, it is our duty to do something now, be proactive, and make it happen. It would be an injustice to the participants of the lab school if we just adopted an old school way of thinking".

Lead Teachers Involve Family and Community

On August 1, 2013, a Health Fair was held at UMS to showcase students' math/science/health knowledge and finished projects. Students were ready and eager to demonstrate what they had learned to their families, program staff and other visitors. Parents, younger siblings, and other family members attended. Local community organizations were also invited to participate in the fair, setting up tables to disseminate health-related information.

The event was planned by the lead teachers and involved everyone at the lab school, including school administrators, teachers and CSUDH program staff. With great pride, students showed parents what they learned and parents in turn were proud of their children's achievements. This was another instance of family-school connections and relationship-building which the lab school is attempting to strengthen and foster with parents, families, and the surrounding local community.

Final Reflections

In California, teaching credentials are earned after completion of an undergraduate degree. Teacher credential program offers **multiple-subject (K-8)** and **single-subject (middle and high school)** programs (Linn, 2013). CSUDH offers the traditional student-teaching option and the university intern option. Interns are classroom teachers without a preliminary credential but who have fulfilled certain state and CSUDH requirements; they are supervised and supported for fieldwork in their own classrooms. Because the majority of candidates enrolled in the CSUDH credential program (i.e. Teacher Education) are, or will likely be teaching in urban schools with multicultural and multilingual students, coursework and field experiences are designed to address English learners and diverse learning styles (Aguillar et al., 2014). MSTI programs provide extensive opportunities for candidates to learn to teach the content of the California academic standards, to use state-adopted instructional materials to assess student progress, and to apply this knowledge.

As indicated by Yee et al., (2014), the Lab School provided candidates enrolled in an alternative route to certification program relevant and practical clinical experiences aligned with their coursework to help them develop to become effective teachers and leaders at their schools. The Lab School offered teacher candidates opportunities to learn from model teachers who themselves

were considered teacher leaders. The intensive training at the Lab School shifted the focus for teacher education for the TTT program from coursework to the clinical experience which is consistent with current research on teacher preparation programs (Robertson-Kraft, & Duckworth, 2014; Yee et al., 2014). The impact of the Lab School on the students and teacher candidates was evident in the lead teachers' assessment of the students and candidates development. The impact of the Lab School, however, was not limited to the students and candidates only, it extended beyond the classroom walls to affect the parents, other teachers, staff, administrators, the school, and possibly teaching and learning at other schools where candidates are now teaching.

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Preparing and Supporting Special Education Teacher Leaders in Secondary School Settings within the Context of Social Justice

M.C. Kate Esposito, Kamal Hamdan and Xiomara Benitez
California State University Dominguez Hills

National Teacher Shortages in the United States

Students most in need - culturally and linguistically diverse, economically poor, and students with special learning needs - are the most likely to have an underprepared, underqualified teacher (Mason-Williams, 2014; United States Department of Education [USDE], 2012, 2013). The ethical concern and the unjust nature of the lack of qualified teachers in special education is highlighted in the empirical findings which consistently demonstrate that teacher quality matters (California Department of Education [CDE], 2012), especially for students with disabilities in secondary urban settings. National figures demonstrate that "providing each student with a disability a qualified, prepared special education teacher (SET) has been a significant challenge for more than 30 years" (Mason-Williams, 2014, p. 247). For our purposes, we break away from the traditional definition of how a school leader is defined – that of the principal and/or assistant principal. Instead, we borrow from the earlier work of Brooks, Paredes Scribner and Eferajorho (2004) who argue that leaders of schools are not limited to those in administrative roles. These authors argue that teachers are leaders in the context of whole school reform – that principals must "perceive their role as a facilitative one in which they strengthen professional community and create governance structures that engage teachers in meaningful decisions related to teaching and learning" (p. 243). Towards this end, we operationalize the teacher as a leader of students who engages in not only the teaching and learning processes but also in decision-making processes that affect their classrooms and the whole school.

The special education teacher shortages facing our nation (USDE, 2013) have been described as a crisis (Rosenberg, Boyer, Sindelar & Misra, 2007) and unlikely to abate in the near future (USDE, 2013). The reliance upon an unqualified teaching force is significant given the well-documented role teacher quality - as measured by knowledge, expertise, education and experience - plays in student achievement. Within the special education context these teacher shortages deny students with disabilities their right to a free and appropriate education as mandated by federal law (The Individual with Disabilities Education Improvement Act, [IDEIA], 2004). In essence, the success of students with disabilities is hindered because inadequately trained teachers do not have the necessary skills to successfully implement specialized education to meet students' unique needs, as per their Individualized Education Programs (IEP). This unequal distribution of qualified teachers for our nation's most underserved students is a social injustice of paramount concern.

Regional Teacher Shortages: California

Shortages in California's special education teaching force mirrors national shortages (CDE, 2012, 2015; USDE, 2013). Although data suggest that the demand for SETs has been reduced, shortages are still evidenced in urban, low-performing schools (CDE, 2012; 2015). The draconian cuts to California's education budget led to teacher layoffs that resulted in a sharp decline in the state's teaching force (CDE, 2012). For example, between 2007-08 and 2010-11, California schools eliminated about 32,000 teaching positions (Lin, Center for Investigative Reporting, 2013). The number of newly issued credentials (general and special education) decreased by 12% in 2011-2012 (CDE, 2013). This reduction is problematic because the number of P-12 students statewide will increase steadily over the next 10 years (CDE, 2012). For example, the California State University Chancellors Office (2012) found that even though the University system prepares approximately 3,350 new SETs annually, an increase of at least 60% above this level is needed to meet districts' hiring needs. Furthermore, the demand for new SETs in the coming years may "create new teacher shortages unless attrition is also reduced, especially because California is producing far fewer new teachers than it once was (CDE, 2012, p. 8)." Filling special education positions in secondary schools is particularly challenging because mandates stemming from the No Child Left Behind Act ([NCLB] 2001) and IDEIA require secondary SPED teachers to demonstrate subject-matter competence in a core academic area. This trend of inequitably distributed quality teachers is likely to continue unless innovative teacher preparation programs focus on recruitment, quality preparation programs, and retention strategies specific to high-need fields in high-needs areas (CDE, 2012; Esposito Hamdan, & Benitez, 2014; Hamdan, Aguilar, Yee, Nee, Benitez, Medina, & Sapp, 2014).

Innovative University District Partnership to Ensure Quality and Ease Shortages

Researchers and policymakers have implemented a variety of strategies to improve the preparation and distribution of quality teachers in high need schools and high need areas (e.g. math, science, special education). One of the strategies implemented is the creation of alternative certification routes (ACR) which enable teachers to enter the field faster than traditional routes. ACR's have been credited with increasing both the number (Sindelar et al., 2012) and the diversity of the candidates placed in high needs schools in high needs fields (Esposito et al.2014; Hamdan et al., 2014). Another strategy is to offer economic benefits, as is the case with the United States Federal Governments' funding priorities such as the American Recovery and Reinvestment Act (2009) which necessitates that grant recipients ensure an equitable distribution of qualified teachers in high need fields and schools. Although these efforts have yielded positive outcomes; inequities continue to persist (Mason-Williams, 2014). In efforts to add to the extant literature specific to SET shortages and provide others seeking to implement credential programs aimed at providing P-12 students with special needs access to a quality teacher, this paper reports on a federally funded ACR designed to recruit, effectively prepare and retain SETs in a culturally, ethnically, linguistically and economically poor high need school district located within an urban center.

Program Context

California State University Dominguez Hills (CSUDH) is diverse four-year, urban-public institution located in Los Angeles County. The schools within the university's service area are high need, difficult to staff and have long grappled with secondary teacher shortages in the areas of Math, Science, English, History and Special Education. CSUDH applied for and was awarded an Office of Special Education Programs grant (Hamdan & Esposito, 2015) to partner with the Los Angeles Unified School District (LAUSD)—to provide a Special Education Mild/Moderate ACR designed to recruit, effectively train and retain 80 SETs. The program is titled the Secondary Special Education Teacher Interventionist project (SSETI). In short, the SSETI grant seeks to place 80 SETs in high needs schools over a 5 year period.

Program Innovations- Building on Previous Successes

The SSETI program is based upon the many successes and informative lessons learned from a variety of federally funded programs (see Hamdan et al., 2014, for complete review) housed within CSUDH's California STEM Institute for Innovation and Improvement (CSI^3). Integral to the SSETI model are four components evidenced in previous CSUDH CSI^3's ACRs designed to recruit, prepare and retain effective secondary teachers in urban centers: (1) the recruitment and selection of candidates who have strong content knowledge in the cognate areas of English, History, Math, or Science; (2) effective preparation through an accelerated accredited one year (three semester) university credential program with curriculum tailored to meet the unique needs of in-service candidates (Interns who are the teachers of record), (3) multiple layers of support from faculty, staff and peers; and (4) strong formalized district-university partnerships. Although these components serve as the foundation for the SSETI project, new innovations have been implemented to improve the preparation of SET's, thus ensure our most needy students have access to a quality teacher.

SSETI Innovations: Integration of a Response to Intervention Strand

There is a "critical and growing need to improve the outcome for students with disabilities who have persistent learning and behavior problems" (Danielson, 2012, p.4). Based on national findings secondary students with disabilities are more than three years below grade level in reading and math (Fuchs, Fuchs & Vaughn, 2014). Researchers further assert that efforts aimed at the improvement of academic outcomes for students with disabilities must be evidence based, systematic and implemented with fidelity (Danielson, 2012, Fuchs, Fuchs & Vaughn, 2014). To this end, the vast majority of school districts implement Response to Intervention (RTI) which been lauded as one of the most promising approaches to meeting the needs of all students, including struggling students with persistent learning deficits (Fuchs, Fuchs & Vaughn, 2014). Many teachers, however, including recent graduates, lack the training needed to successfully implement individualized systematic interventions. As Prasse et al. (2012) assert, many teacher preparation programs do not provide graduates with the skills and knowledge needed to implement data-driven systems of student support. As such, the first year of SSETI funding was used to develop and implement a curriculum strand specific to RTI that includes computer based modules focused on intensive interventions. These authors are confident that this knowledge base will greatly benefit secondary students in the schools candidates will teach in. In addition to integrating the RTI strand into the SSETI program, online modules have been integrated into the University Mild/Moderate Credential.

Clinical Experience Prior to Entering the Field as Interns

Program Elements	University Program	SSETI Program
Course Work	California Council for Teacher Credentialing (CCTC) approved curriculum	CCTC approved curriculum
Course Load	6 -12 units per semester	12-15 semester units
Typical time required to complete program	2 years	1 year and one summer
Field Work	Three to four semesters of fieldwork as Interns	Spring semester (50 hours) and summer session (100 hours) at lab school. Two semesters as Interns (in own classrooms).
Typical Size of Classes and Location	Non-cohort with class size ranging from 25- 30 students with class size capped at 35.	Cohorts with class size ranging from 15- 20. Fall and Spring courses held at local high school centrally located to candidates work.
Program Counseling	Students assigned to full time university faculty member.	Candidates are assigned to one full time university faculty member who holds office hours at lab school.
Tuition or Scholarship Support	Students can apply for financial assistance.	Students receive $7250 stipend will qualify for TEACH grant [1]of $4000 and a $400 classroom kit.
Subject Matter Support	May participate in district supported workshops 2nd year pre-interns mandated to attend workshops.	Subject matter preparation courses provided to students.

Table 1: Program Comparison

Research findings regarding SET shortages suggest that underprepared teachers are more likely to leave the field prior to certification than are those who enter the field fully certified (Dai, Sindelar, Denslow, Dewey & Rosenberg, 2007). Urban schools employ the greatest number of underprepared teachers and thus, have the highest rates of teacher turnover. SSETI will address attrition through substantial coaching and support provided to candidates prior to entering the field as Interns. The CSI[3], in partnership with LAUSD, operates four different Lab Schools focused on Math, Science and English curriculum for secondary school students (see Hamdan et al., 2014). During 2014-2015 approximately 200 high school students participated at a Saturday Lab School housed within an urban high school. During the summer the Lab School includes three different sites with approximate 150 secondary school students participating at each. Noteworthy is that expert teachers guide both general and special education novice teachers within an inclusive setting. Aligned with best practice research (e.g., Prasse et al., 2012), extended clinical experience is a significant contribution to effective preparation programs.

Given that the majority of students with special needs are included in the general education classroom and curriculum (Aud, et al., 2013), providing candidates with clinical experiences that mirror this reality is important. Additionally the Lab Schools reflect the districts population with regard to ethnicity, English language learners, academic skills and the range of students with disabilities. It is hoped that focused coaching and participation during the spring semester (50 hours) and summer (100 hours) will provide candidates with a strong knowledge base and high confidence as they begin their teaching career. Reducing the high teacher attrition rates evidenced in so many in urban centers is certainly a worthwhile endeavor. Table 1 shows a comparison of university and SSETI programs.

[1] The TEACH Grant Program provides grants of up to $4,000 a year to students who plan to complete course work needed to begin a career in teaching in high needs areas. For complete review see https://studentaid.ed.gov/sa/types/grants-scholarships/teach

Candidates Perceptions of SSETI: Preliminary Findings

At the time of this article submission, the SSETI program was in the first year of implementation. During the Summer 18 candidates completed an initial survey developed by these authors in collaboration with an independent evaluation agency. The agency was hired for purposes of evaluation and dissemination of findings[2]. According to SSETI participants, the most attractive features offered by the program were the accelerated nature of the program (78%) followed by cohort support (67%) and individual attention (67%). Over half of participants indicated wanting to join SSETI because of the quality of the academic program or faculty (56%). The affordable cost (33%) and tuition stipend provided (50%) were also attractive features of the program. Participants were also asked what they thought the biggest challenge was in completing the SSETI program. The most commonly noted challenge was time management-balancing class, assignments, and work. Other challenges included financial issues, learning the material, classroom management, completing IEPs and other program paperwork, as well as overcoming confidence issues and the general commute to attend the program and work.

Current estimates regarding SET shortages suggest our most deserving students will continue to be denied what should be their birthright—a qualified teacher - unless innovative practices recruit, effectively train and retain new teachers. Additionally, estimates suggest that increases in the number of "under prepared" teachers working with students are likely to persist, as such, the need to develop viable models, such as the SSETI program, for the preparation of in-service teachers is critical.

Final Reflections

SSETI program underscores several important and instructive features about teacher leadership within the context of whole school reform, social justice and ethics. Thinking of leadership as something that can occur at any time and place throughout a school obviously brings teachers into the leadership fold (Brooks et al., 2004). Whole secondary school special education teacher leaders can be active in school-wide committees, which could be seen as a forum to express their perspectives and experiences as instructors - and put these ideas in motion. Our hope is to prepare more secondary school special education teachers who not only become experts in their field but also embrace their roles as teacher leaders who advocate for socially just teaching and learning opportunities for all students.

With many Universities and Districts seeking to implement viable routes our initial findings will likely have direct implications specific to the preparation of SETs, particularly in-service candidates working in urban centers. We concur with Fullan (1994) who argued that teachers must exhibit proficiency in several "interrelated domains" to function as leaders: (1) knowledge of teaching and learning; (2) knowledge of collegiality; (3) knowledge of educational contexts; (4) knowledge through continuous learning; (5) knowledge of the change process; and (6) moral purpose (pp. 246–250). SSETI intends to capitalize on those domains as catalysts to ensure that all teachers are equipped with the necessary instructional skills to enhance social justice in the classroom and in the school as a whole.

[2] Data evaluation provided by Vital Research, LLC as part on ongoing evaluation of the SSETI program at CSUDH.

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