Overview of the STRIDES RAC Work to Date

Half of all teachers leave the profession within the first five years, and, unfortunately, this rate is highest for mathematics positions in high poverty schools (Fantilli & McDougall, 2009; Goldring et al., 2014). Furthermore, with half of all current teachers in the United States retiring in the next five years (Foster, 2010), enrollment in teacher preparation programs declining, and teacher turnover costing America $7.3 billion annually (National Math + Science Initiative, 2013), the mathematics teaching crisis is of major proportion. This crisis leads to many underprepared mathematics teachers and a profound effect on how well-prepared our students are to be successful in high school, college and beyond. Experts agree that addressing the mathematics teaching crisis meaningfully will require building a more cohesive system of teacher preparation, support, and development (Mehta, Theisen-Homer, Braslow, & Lopatin 2015).

The Secondary Teacher Retention & Induction in Diverse Educational Settings (STRIDES) Research Action Cluster (RAC) addresses Mathematics Teacher Education Partnership (MTE-Partnership) Guiding Principle #8: Student Recruitment, Selection, and Support. Teacher preparation programs actively recruit high-quality and diverse teacher candidates and monitor/support them as they complete their programs. Since the inception of MTE-Partnership, the national problem of retaining secondary mathematics teachers within the profession has been a priority. A RAC on retention was proposed at the 2013 MTE-Partnership Annual Conference, but it was not implemented because recruitment was determined to be a higher priority at the time. This decision led to the formation and implementation of the Marketing for Attracting Teacher Hopefuls (MATH) RAC. A few years later, the driver diagram in Figure 1 was created, based on a review of recent literature on retention, with an aim statement and drivers that include support for early career teachers, PLCs, and the need to examine school structures and professional pathways to support/retain teachers.

Members of the RAC decided early on that the work of the RAC must focus on understanding and providing support for both pre-service and early in-service teachers, given the role of a cohesive, continuum of professional learning on teacher growth, and retention. Thus, to launch early initiatives aimed at improving teacher retention rates, STRIDES RAC members designed a survey in Summer 2015 to gather preliminary data on the nature and quality of professional support for pre-service, first-, second-, and third-year teachers. Specific research questions guiding this work were: What is the perceived scope, nature, and impact of professional support for early career mathematics teachers, and how does this (a) change as teachers progress in their teaching career and (b) relate to how likely it is a teacher will remain teaching? Researchers from 13 institutions and secondary mathematics teachers from four school districts designed the pilot survey Reflection on Professional Activities. This survey was created through an iterative design and vetting process, having stemmed from a discussion centered on research-based reasons that teachers leave the field.
To better understand the degree to which early career mathematics teachers are being supported by professional learning opportunities, professional learning communities, and administrators, the survey allowed participants to specify activities that have helped them grow professionally and the degree to which these activities were worthwhile to them. Also, instructional context (i.e. public, private, etc.) data was collected, as well as whether the early service teachers serve students from special populations (i.e. special education, English-language learner, gifted). Participant estimations regarding the degree that specific professional development activities changed these teachers’ practices, as well as the level of “inspiration” these activities invoked, were surveyed, allowing researchers to discern connections between these two measures. Qualitative responses allowed survey participants to provide additional details regarding their support systems. Finally, the degree that the participants feel that their administrators support them professionally was measured, including specific areas (e.g. assessment, instruction, curriculum, classroom management, collegial collaboration, and course assignments/loads). The data from the Summer 2015 pilot survey was analyzed in detail and provided the basis for a revised survey that was sent to MTE-Partnership member institutions in November of 2016 and April of 2017. Data from these two most recent surveys were gathered from participants from a wide geographic area and included responses from 141 early career teachers across the United States (see Figure 2).

The data revealed the extent to which the participants received support in their early careers and what types of assistance were most meaningful for them. An initial analysis of this data was shared at a number of conferences and workshops.
regional/national conferences, most recently at the 2018 National Council of Teachers of Mathematics (NCTM) Annual Conference in Washington, D.C.

Figure 2. Geographic participation in the STRIDES survey.

Work of the STRIDES RAC at the 2018 Annual Conference

At the 2018 MTE-Partnership Annual Conference in Denver, STRIDES RAC members met for approximately 12 hours of work time. Persons with a variety of backgrounds/skill sets were present (mathematicians, math educators, and school district representatives), a few of who were new to the RAC. Members included (with sub-RAC in parentheses): Laura Wilding (PLC), James Martinez (Administration), Lisa Amick (PLC), Fred Uy (Administration), Judy Kysh (PLC), Travis Weiland (PLC), Lisa Lamb (PLC), and Cathy Williams (Administration); see Figure 3.

Figure 3. STRIDES RAC members at the 2018 MTE-Partnership Annual Conference in Denver.

During the work time, a number of collaborative tasks were performed, facilitated by two of the RAC leaders (Amick and Martinez). The goals for the conference were to: (1) briefly update new RAC members on RAC goals and past efforts, (2) develop specific interventions based on collected data, and (3) investigate relevant grant opportunities to support future efforts. During the first part of the first work session, the group identified
individual and group goals and questions, including: (a) unique needs of math teachers versus non-math teachers, (b) small ways to get interventions started, (c) developing interventions on pilot level, (d) relating ideas generated to our own programs, (e) not getting bogged down on ideas, (f) advantages of starting with funding and then generating interventions based on that profile and vice versa, (g) focusing on specific content, and (h) focusing on specific mathematical practices. During the remainder of the first working session and for the entirety of the second work session, the STRIDES working group engaged in a broad discussion about interventions related to administrative support and PLCs, which correspond to the two subgroups of the RAC. Ideas were charted and included:

**PLCs**
- Extra observations by a non-evaluative person
- Public service announcement (mentor teachers talking about how they support novice teachers)
- Sending collaborative teams (mentor/early career teacher) to conferences
- Ensuring all early career teachers have a mentor
- Virtual Q&A panel for early career teachers

**Administrative Support**
- What does “good” administrative support look like?
- Evaluation piece
- Help administrators with their role
- Is evaluation their key point?
- Presentation at administrative conferences
- Administrations giving feedback is key
- Need administrators who build community

**Common Spaces**
- Intensity, timeliness, frequency, etc., of interventions
- One type of intervention for each year
- Teacher union constraints
- Cultural aspects to consider
- Factors that are out of our hands (e.g., student behavior in these classes)
- Focus on pre-service early career teachers who teach Algebra 1

The group also agreed that it would be more constructive to start with defining substantive interventions and then, if time allowed, look at funding possibilities to support these ideas. Additionally, the group defined a list of best intervention qualities, including: (a) initial design doesn’t have to be “perfect,” (b) achievable with limited resources, (c) easy to upscale to larger areas/participants, (d) easy for participants to see themselves completing, (e) impactful, (f) measurable, (g) pertinent to today’s climate, (h) tied to equity/diversity, and (i) connected to current retention research. On the second and third days, sub-RACs met independently to work on specific intervention ideas with the following goals: (a) define one primary and one alternate, (b) provide an estimate of costs and resources for each intervention idea, and (c) for each intervention idea, define specific tasks, timelines, and persons responsible for implementation. The Administration Support sub-RAC intervention strategy involves the shared viewing by the site principal and early career teacher of five-minute videos focusing on three of NCTM’s eight Effective Mathematics Teaching Practices and includes pre- and post-surveys to gauge personal/professional connection, learning, and perceived support. The PLC sub-RAC intervention focuses only on teachers in their first year and is multi-faceted. It includes assuring each new teacher has a mentor, having them participate in a virtual...
question-and-answer panel, and providing them with a video to watch with their mentor teacher that provides tips on how to strengthen the partnership. Ideas for each sub-RAC were shared with the whole group to gather feedback. Each sub-RAC defined one draft intervention strategy in detail, including timelines for completion of a pilot program in the next four to six months. In addition, the STRIDES Working Group returned to the previously formed goals and best intervention qualities and determined the degree that the draft interventions met these standards. Next, to comply with a request from the MTE-Partnership conference organizers, the working group determined what value our efforts were in connection with other RACs, including the Equity and Transformations RACs. Finally, the group members set upcoming meeting dates to hold one another accountable on the implementation of the interventions, to begin grant writing, and continue collaboration.

Conclusion

The work time allowed for RACs during the 2018 annual meeting was extremely beneficial to STRIDES and allowed researchers to propel the work forward. STRIDES was able to recruit additional members who brought a new perspective to the group, and they, along with veteran members, contributed significantly to the ongoing efforts of the RAC. Work time was efficient and productive, leaving RAC members with a sense of accomplishment and the motivation and goals to continue the work into the upcoming school year. Both sub-RACs developed interventions to test during the 2018–2019 school year and selected grants that could possibly fund further efforts in the future. Interventions will be piloted this year for both sub-RACs, and the research group will continue to meet virtually to share and analyze the data. Both sub-RACs will be working on grant writing in hopes that these small-scale efforts can one day become much larger and have a greater impact on the profession. With the teacher shortage increasing and mentoring programs being cut from states’ budgets, the RAC feels that their timely work is of utmost importance and pledges to put a significant focus on this work in the upcoming school year.

References


