
Clinical Experiences

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Teacher preparation programs face significant challenges in providing secondary mathematics teacher candidates with quality clinical experiences. The problem is two-fold:

1. There is an inadequate supply of quality mentor teachers to oversee clinical experiences. Too few teachers are well-versed in implementing the Common Core State Standards (CCSS) and teachers are especially inexperienced with embedding the standards for mathematical practice into their teaching of content standards on a daily basis.
2. Bidirectional relationship between the teacher preparation programs and school partners in which clinical experiences take place are rare. Such relationships that reflect a common vision and shared commitment to the vision of the Common Core State Standards for Mathematics (CCSS-M) and other issues related to mathematics teaching and learning are critical to the development and mentoring of new teachers.

The work of Clinical Experience RAC (CERAC) encompasses a number of the principles and principle indicators from the Mathematics Teacher Education Partnership (MTE-Partnership) Guiding Principles, including fostering partnerships between institutions of higher education, schools and districts, and other stakeholders such as state departments of education and is focused on preparing teacher candidates who promote student success in mathematics, as described in CCSS-M and other college- and career-ready standards. In the CERAC higher education faculty and partner school districts and schools work together to actively recruit, develop, and support in-service master secondary mathematics teachers who can serve as mentors across the teacher development continuum from pre-service to beginning teachers. Moreover, the CERAC helps to ensure that teacher candidates have the knowledge, skills, and dispositions needed to implement educational practices found to be effective in supporting all secondary students' success in mathematics as defined in the CCSS-M and other college- and career-ready standards.

The CERAC consists of 24 university-led teams, each consisting of at least one mathematics teacher educator, a mathematician, and a school partner. The CERAC is divided into three sub-RACs based on the three types of field experiences that we are implementing to meet the goals that we set forth in our primary drivers and our aim statement. The sub-RACs are: Methods, Paired Placement, and Co-planning and Co-teaching. Each sub-RAC is implementing Plan-Do-Study-Act (PDSA) cycles based on their goals and objectives. Teams work together via conference calls, email, and the Trellis platform. We use Dropbox and Trellis as a way of sharing files and materials. We have held face-to-face meetings as a RAC that included breakout meetings for sub-RACs. The sub-RACs have overlap areas that drive and focus the RAC, such as the emphasis on the mathematics teaching practices (National Council of Teachers of Mathematics [NCTM], 2014), PD for mentors related to the CCSS and mentoring mathematics teacher candidates, and outcome measures. There are also specific goals to be attained within each of the sub-RACs. Each sub-RAC has developed its own specific research questions.

Update on the Collective Work of the RAC

One of the major accomplishments of the clinical experience RAC since the 2016 MTE-Partnership conference was the submission of a proposal to the Engaged Student Learning, Design or Development and Implementation (level 2) of IUSE of the National Science Foundation. The project will be led by principal investigators from Auburn University, University of South Florida, and the Association of Public and Land-grant Universities (APLU). *Collaborative Research: Attaining Excellence in Secondary Mathematics Clinical Experiences with a Lens on Equity* will implement an improvement science study to answer the following question: How does a continuum of collaborative and student-focused clinical experiences, including co-planning /co-teaching and paired placement fieldwork models, impact pre-service teachers' equitable implementation of the Mathematics Teaching Practices (MTPs; NCTM, 2014) across multiple institutional contexts? The research will be conducted by a consortium of 24 universities, along with their school partners engaged in APLU's MTE-Partnership, which is currently developing and testing three alternative models for clinical experiences using a networked improvement community (NIC) design (Bryk et al., 2015).

During the 2017 MTE-Partnership conference, we began to prepare for the implementation of the grant, since we had received questions related to the proposal from the program officer, which in the past has been a good sign to principal investigators that their projects were going to be funded. We are hoping that this grant will help us to extend the work that we have already begun.

In addition to making preparation for the implementation of the grant the sub-RACs work on materials that they had already been developing and began thinking about PDSA cycles that they would like to run in the fall to continue improving their products and processes. What follows are brief summaries of the work of each of the sub-RACS since the 2016 MTE-Partnership conference.

Methods Sub-RAC

The methods sub-RAC has developed, field tested, and posted a three-component module (available in the Clinical RAC Trellis library) that focuses on understanding and identifying the Standards for Mathematical Practice (SMPs). The activities include a component near the end of the module for teacher candidates to work briefly with their cooperating/mentor teacher to analyze a video clip through the lens of the SMPs. The online surveys of each different part of the module are being converted to Google forms for easy download and use and will be ready by the early part of August 2017.

The second module being developed focuses on short-term lesson planning and will include a component in which teacher candidates work with their cooperating teacher near the completion of the lesson plan to receive feedback on lesson planning using a rubric derived from the MCOP². This module will be field tested in Fall 2017 at two universities and again in Spring 2018. The goal is to finalize the module at next year's MTE-Partnership conference and have it ready for sharing for Fall 2018.

A third module focusing on developing skill with providing formative feedback to students regarding their mathematical reasoning was started by new RAC members at the June 2017 MTE-Partnership conference. This module will focus on helping teacher candidates learn to provide objective/goal-driven feedback to students' mathematical work. It is anticipated the module will conclude with a task that will include the cooperating teachers working with the teacher candidates to provide formative feedback to students in the classroom in which the teacher candidates are placed.

Co-Planning and Co-Teaching Sub-RAC

During the MTE-Partnership annual meeting, which was held June 25-27, 2017, the Co-Planning and Co-Teaching (CPCT) sub-RAC actively engaged in outlining the PDSA cycles for the next academic year. Particularly, the group worked on three major agenda items, namely: determining attributes of a website that can be used to disseminate information to mathematics teachers about CPCT; core tenets that ought to be addressed during the working group sessions at the 2017 PME-NA meeting that will be held October 5-8, 2017; and refining the instruments that would be incorporated into the NSF-IUSE grant efforts, if it is funded.

For the website, it was recommended that model videos of CPCT during enacted lessons and resources that teachers can use immediately within their settings be easily accessible and downloadable. For the PME-NA meeting, the group considered how to support the need of institutions who are seeking to adopt CPCT for the first time, while supporting institutions who have implemented it more readily. Moreover, the sub-RAC also considered means to consolidate survey items further. The sub-RAC agreed to meet at the beginning of the academic year to continue their discussion about the three agenda items, and will identify a suitable schedule for data collection.

Paired Placement Sub-RAC

The paired placement sub-RAC consolidated folders and began work to make the materials more accessible to others interested in piloting the model. Members of the sub-RAC also worked on refining PDSA cycle questions for fall 2017 implementation of the model. Members of the paired placement sub-RAC are currently working on an article related to the implementation of the paired placement approach. They are also making plans for presentations and other ways of disseminating the work. Members were also working with the other sub-RACs to ensure that the Mathematics Teaching Practices Survey is available online and is in a form in which the data can be easily read.

Summary

Overall the clinical experiences RAC is making great progress toward its aim. Members work well together and are constantly learning from each other. The work is exciting, rewarding, and transformative. Below are ways that MTE-Partnership members can get involved in the sub-RACs.

Early Field Experiences within Methods Sub-RAC

1. Implementing the SMPS module and contributing to data collection; and
2. Collaborating on the development of additional modules and measures of module effects on teacher candidates and mentor teachers

Co-Plan/ Co-Teach Sub-RAC

1. Developing, utilizing, and sharing instruments used to measure the influence of the co-teaching model;
2. Implementing the model and examining teacher candidates' experiences throughout their field-based preparation (i.e., practicum and internship); and
3. Studying the influence of professional development on the success of the co-teaching model.

Paired Placement Sub-RAC

1. Developing, utilizing, and sharing instruments used to measure the influence of the paired placement model;
2. (2) Implementing the model and examining teacher candidates' experiences throughout their field-based preparation (i.e., practicum and internship); and

3. Refining and studying the influence of professional development and orientation sessions on the success of the paired placement model.

References

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