

Project Title

Creating space for advancing progressive teaching of mathematics

Project Description

Mathematics teachers are under pressure. Students need mathematics to have access to academic and economic opportunities beyond high school (or even to graduate from high school). Districts need test scores that demonstrate “adequate yearly progress” to avoid being taken over. The cumulative effect of this pressure can be that teachers refrain from making changes to improve their teaching practice at the risk of lowering their test scores, or, worse yet, teachers may employ teaching strategies that “contradicts teachers’ views of sound educational practice” (Abrams, Pedulla, & Madaus, 2003, p. 18). The primary purpose of this project is alleviate some of the risk associated with changing practice and, through the grant and the availability of the university researcher, provide the space, resources, and expertise for classroom teachers to study and advance their practice. The secondary purpose is to create a high-functioning professional learning community that will continue beyond this project, both in duration and in participants.

Questions to be addressed. In this project the following questions will be addressed:

What does it look like to create space for teachers to advance their teaching practice given the pressures of high-stakes testing?

How do teachers choose to improve their practice in specific, measurable ways?

How do you sustain professional learning?

Plan for Project. The project will take place over the duration of the 2013-2014 academic year. Two teachers and the researcher will gather to develop collective goals that are informed by the needs of the school/district, evidence generated by high-stakes tests, the Principles and Standards for School Mathematics (National Council of Teachers of Mathematics, 2000), and the Common Core State Standards (Common Core State Standards Initiative, 2010). In turn, each teacher will develop individual goals for improving practice that will help meet the collective goal generated by both teachers. The university researcher is to assume the role of researcher, resource provider, and coach, to facilitate the teachers meeting their goals. Both qualitative and quantitative data will be collected and processed using mixed method research software. Teacher journals, coaching session notes, student generated evidence, and teacher-selected artifacts will be used to study the teachers' practice related to student learning and the coaching process.

Timeline. Beginning in the Summer of 2013, the teachers and the university researcher will gather to develop specific, measurable goals, identify the means to achieve those goals, and a timeline for achieving those goals. The university researcher will provide resources, relevant research, and accountability toward the study of teaching practice aimed at meeting the indicated goals.

In the Fall of 2013, the teachers and the university researcher will engage in semi-monthly coaching sessions to evaluate study/progress on goals, which will include evaluating student-generated evidence, and teacher selected artifacts. These sessions will also be used to identify assets and impediments toward achieving the indicated

goals. Resources will also be identified to take advantage of identified assets or to overcome identified impediments toward goal achievement. The university researcher will then acquire, process, and disseminate the resources to assist the teachers.

In the Spring of 2014, the teachers and university researcher will continue coaching sessions on a monthly basis. The focus being to further refine the teachers means toward achieving their goals and developing their own process of evaluating evidence, identifying assets and impediments, and identifying/acquiring resources.

Finally, in the Summer of 2014, the teachers and university researcher will complete an overall evaluation of each teachers research project. The university researcher will also facilitate the teachers writing up results in the form of an NCTM practitioner journal submission. In addition an evaluation of the coaching model will be done with the end product being a manuscript for the Mathematics Teacher Educator Journal.

Summary of Research Related Literature. There is literature that suggests “an altruistic desire to serve society is one of the primary motivations for pursuing teaching” (Guarino, Santibanez, & Daley, 2006, p.183). Additionally, teachers have a need to feel successful in order to remain in the profession of teaching (Johnson & Birkeland, 2003). Thus, teachers teach to do a greater good, but need to feel some sort of success to keep doing it. But research has show teachers may be employing mathematics pedagogy they know to be ineffective to achieve “success” (Abrams et al., 2003). This project is designed to create a safe space for teachers to improve their practice.

Outcome

The hypothesis for this project is that changing practice in state-tested areas is risky and teachers need assistance to alleviate that risk to move toward more progressive teaching. The belief is that the university researcher can be a catalyst by providing space for improving mathematics teaching practice.

Budget

| Item (XX Identifies Change from Original Budget) | Cost | Quantity | Total |
|---|------------|-----------|---------------|
| National Council of Teachers of Mathematics Membership w/ Journal | \$108 | 3 | \$324 |
| Mississippi Council of Teachers of Mathematics Membership and Conference Registration | \$80 | 3 | \$240 |
| Summer Teacher Stipends | \$150 | 4 | \$600 |
| Fall/Spring Semester Teacher Stipends | \$400 | 4 | \$1600 |
| Web-Based Research Software (\$11/user) | \$33/month | 12 months | \$396 |
| Resource Allotment (Books, Technology, etc.) | \$503.335 | 2 | \$1006.67 |
| XX NCTM Annual Meeting (New Orleans, LA) Registration | \$325 | 3 | \$975 |
| XX Travel Funds for MCTM and NCTM Meetings | \$858.33 | 1 | \$858.33 |
| Total | | | \$6000 |

References

- Abrams, L. M., Pedulla, J. J., & Madaus, G. F. (2003). Views from the classroom: Teachers' opinions of statewide testing programs. *Theory into Practice, 42*(1), 18-29.
- Guarino, C., Santibanez, L., & Daley, G. (2006). Teacher recruitment and retention: A review of the recent empirical literature. *Review of Educational Research, 76*(2), 173.
- Initiative, C. C. S. S. (2010). Common core state standards for mathematics. Retrieved September, 15, 2010.
- Johnson, S. M., & Birkeland, S. E. (2003). Pursuing a "Sense of Success": New Teachers Explain Their Career Decisions. *American Educational Research Journal, 40*(3), 581-617.
- National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: National Council of Teachers of Mathematics.

