

## **SUPPORTS FOUND BENEFICIAL AND CHALLENGES FACED BY ADJUNCT INSTRUCTORS WHEN IMPLEMENTING A RESEARCH BASED CURRICULUM**

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*This report shares the initial results from research of a model designed to support Precalculus adjunct instructors. The model is based on the organization and coordination of Precalculus along with sustained professional development in the form of a professional learning community. The initial results for instructional practices and job satisfaction show that instructors found access to a course-coordinator and participation in a PLC beneficial.*

**Keywords:** Post-Secondary Mathematics, Teacher Education-Inservice/Professional Development

### **Objectives**

Research suggests that students' persistence in pursuing STEM degrees is influenced by their experiences in their first year mathematics courses (Hutcheson, Pampaka, & Williams 2011; Pampaka, Williams, Hutcheson, Davis, & Wake, 2012). In this regard, the quality of pedagogy can make a big difference in the retention of STEM students beyond beginning mathematics. Moreover, there is a growing trend that higher education institutions are increasingly employing part-time, non-tenure track faculty, such as adjunct instructors (Mason, 2009; Curtis, 2014). Between 2001 and 2011, the number of part-time faculty employed in degree-granting institutions increased by 35% (Snyder & Dillow, 2015). This trend points to a need to better understanding how institutional policies and practices, including the availability of professional development (PD), can improve part-time instructors' experiences (Kezar & Sam, 2013).

While there is a growing body of research aimed at providing PD for graduate teaching assistants (DeLong & Winter, 2001), much needs to be done with respect to the growing population of adjunct instructors (Austin & Sorcinelli, 2013). The current study focuses on the adjunct instructor population because of our own institution's increased reliance on this group, especially in our introductory mathematics courses. We are currently developing and refining a model to help adjunct instructors implement best practices for learning and instruction through professional development and course coordination. This model incorporates instructor supports backed by research and provides course coordination of Precalculus. Our course coordination includes a course coordinator, Precalculus tutors, a common pacing guide, syllabus, assessments and rubrics for all instructors. In addition, we provide a summer workshop for new Precalculus adjunct faculty and tutors, during which participants receive a comprehensive training on the adapted curriculum. This workshop is part of a larger PD effort that continues throughout the semester through online weekly meetings led by a full-time faculty member or graduate student. These meetings form the foundation of a professional learning community (PLC) focused on providing content and instructional support. Adjunct faculty highly regard such supports as they help improve teaching and integrate adjuncts into their institutions (Lyons, 2007; Bowers, 2013).

In this brief research report, we present some of the preliminary findings of our study where we investigate how the adjunct instructors view challenges and supports for this course.

### **Background**

Our study is guided by research on policies and practices for supporting adjunct instructors. All faculty members are important to an institution and must be supported to fulfill their academic responsibilities (Gappa, Austin, & Trice, 2007). Training and development programs for part-time

faculty are important because proper training and support can ensure that instructors improve their practice (Leslie & Gappa, 2002). Part-time instructors should feel involved and appreciated within the institutional community. The schedules of part-time instructors often do not allow them to interact with regular staff because of specific class schedules, classrooms in different buildings, and lack of proper office space within the department. In addition, a faculty member who is on campus to teach just one or two courses may have different professional growth interests than a full-time, tenure-track faculty member (Gappa et al., 2007).

To respond to the diverse needs of faculty members, many institutions have developed innovative approaches to PD. For example, some universities and colleges, in recognition of the time constraints, are providing online and in-person PD opportunities such as series of workshop sessions, one day retreats, and online programs (University of Central Florida); late-afternoon and early evening sessions including a light meal, a stipend and a certificate of completion (University of Louisville); or an orientation with mentoring and online PD (Ivy Tech Community College (ITCC)) (Lyons, 2007).

There is no single model that can fit the needs of all the institutions therefore institutions need to develop specific programs that cater to their own needs (Austin & Sorcinelli, 2013). New approaches to adjunct PD need to be established to flourish within organizations (Austin & Sorcinelli, 2013). One way of providing support and development to the faculty is a focus on collaboration both inside and outside the institution (Austin & Sorcinelli, 2013). Collaboration in the form of Professional Learning Communities (PLCs) has been proven to be a beneficial model for K-12 teachers, as teaching has been shown to be more effective, and student achievement improves, when teachers develop strong PLCs in their schools (Fulton & Britton, 2011). In an overview of the research on PLCs in higher education, Roth (2014) found that engagement from faculty in these communities also led to more effective teaching and improved student learning. In fact, all faculty members, regardless of their appointment type, can benefit from participating in PLCs (Gappa et al., 2007).

### Methods

This brief research report presents the findings using a subset of data from a larger study. Our initiative aims to measure the impact of course coordination and support on adjunct mathematics instructors' knowledge, instructional practices, and job satisfaction. The transcription data from the interviews is being analyzing using thematic analysis. Through this analysis, we seek to discover emerging themes focused on changes in their class room practices, beliefs about teaching and learning mathematics, expectations of students, and persistent challenges of their role as adjunct instructors.

The study is taking place at a Ph.D. granting public institution in the northeastern United States. The current participants are 8 adjunct instructors implementing a research-based Precalculus curriculum. The instructors were interviewed in person at the beginning and end of the semester, and all the participating adjunct instructors had previously taught one or two Precalculus classes. The interview data has been initially analyzed and coded for emerging themes. This data will support results from our larger data sources including classroom observations, content assessment and belief survey to provide us with additional evidence of the impact of the course coordination and adjunct support. Our specific research questions for this report are as follows:

1. What challenges do adjunct instructors face when implementing a research-based Precalculus curriculum?
2. What supports do the adjunct instructors find more beneficial when implementing a researched-based curriculum?

## Results

Based on our initial analysis, various themes emerged about the ways in which our adjuncts' instructional practices changed due to the challenges they faced as well as the supports they found beneficial. We hypothesize that these supports may lead to increased job satisfaction.

The reported challenges mostly focused on factors necessary to implement the curriculum well and the supports adjunct instructors would need in order to overcome these challenges. The instructors identified what specific supports were more beneficial to them, and reported back to us on how those supports and resources could be improved. In addition, the instructors' initial experiences with the curriculum allowed them to develop a plan of what changes they would need to make to their own instruction, pacing schedule, and other course planning.

## Challenges

The first challenge stemmed from instructors' prior experience teaching Precalculus as either an adjunct instructor or high school teacher. Most of the adjunct faculty had several years of experience teaching Precalculus at the college level, with the exception of one instructor who was teaching the course for the first time. Some instructors were concerned about the fast pacing that covered the broad range of content in the new curriculum. They were afraid that as a result, their students may not be well-prepared to take the first Calculus course the following semester. The main reason behind such concern was the fact that the content they had covered when they had taught this course previously focused primarily on procedural techniques rather than conceptual understanding of the topics.

In addition, some instructors were not comfortable planning lessons and implementing the curriculum due to its novelty. Based on their past experiences, they had built a repertoire of techniques in terms of planning and delivering their lessons in class, and therefore had felt more confident in providing examples to the students because of this familiarity with the content. Many instructors were also concerned about bringing students onboard with the new curriculum, which focuses on conceptual learning and understanding. Based on their responses, it was clear that adjunct instructors had already started experiencing challenges in involving students in working through specific investigation modules throughout the course. This experience proved to be a source of dissatisfaction for the teachers both in the classroom and while planning for their lessons. They also found it challenging to communicate with students about the reasons the new curriculum required greater class participation.

Finally, structural issues like classroom size, set-up, traditional furniture and lecture style halls proved to be a challenge to implementing a new research-oriented Precalculus curriculum focusing on discourse.

## Supports

Our second research question specifically talked about the supports that our adjunct instructors found beneficial when implementing the curriculum. While not surprising, we found it interesting that none of our adjunct instructors had ever received any form of mentoring as an adjunct instructor. While they may have received mentoring as a student teacher or during their first year teaching at the K-12 level, they had never been involved in any form of mentorship or professional development at the college level. They appreciated the online PLC meetings and having access to a course coordinator. The PLC meetings gave them a platform to learn about the ways in which the students should be guided through the investigations as well as a place to share their concerns and ask their questions. Similarly, having access to a course coordinator allowed them to share their concerns and get some direction. They found the common exams and the pacing guide that were designed by the course coordinator most beneficial. The exams and the pacing guide, as well as having a course

coordinator as a go-to person opened up time for other activities like designing projects for students, developing online videos etc.

Our adjunct instructors also collaborated with each other in smaller informal groups and continued to engage in these collaborations along with the online PLC. The nature of these informal meetings was impacted by the curriculum as well as the discussions during the formal PLC meetings. The informal PLC conversations focused on content and pedagogy instead of logistical issues. This focus was a result of the logistical concerns being taken care of by the course coordinator.

### Conclusions

The results presented here are part of a larger research effort to measure the impact of course coordination and support on adjunct mathematics instructors' knowledge, instructional practices, and job satisfaction. Our findings from the analysis of the initial interview data with the instructors focus on their instructional practices and job satisfaction. Moving forward we plan to extend our analysis to delve deeper into the ways in which supports, like weekly online meetings and access to a course coordinator, impacts our instructors. We are also interested in investigating how instructors' content knowledge might be impacted by these efforts. Our hope is that these findings will make a significant contribution towards the scant literature on supporting mathematics adjunct instructors.

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