Faculty Professional Development Grant

Final Report

Arkansas Tech University

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A. *Creating Innovative, Diverse Democratic Classrooms: Strategies for Fostering Critical Reflection and Advocacy Approaches for Empowering ALL Students*"– Final report for the presentation at the International Education Diplomacy Institute sponsored by the Association for Childhood Education International (ACEI), which was held in Washington D.C., March 4-8, 2015

B. Research Problem

According to Nieto (2006) teaching is an inherently political work and at the epicenter of today's social justice issues claiming that many of the students in our 'nation's classroom' reflect the tremendous structural inequalities that are no longer the exception but rather the norm. Hence the question that presents itself is how do we effectively prepare the next generation of teacher educators to be effective in today's rigorous, diverse classroom? History consistently demonstrates that teaching content knowledge alone will not suffice. Changing our paradigm from a focus on instructional theory to pedagogical practice is essential in preparing pre-service teachers to face the tremendous diversity of language, social class, ethnicity and race inherently predominate in classrooms across this country. The flipped classroom model is a paradigm shift for most traditional academicians. It uses class time to facilitate critical, collaborative discussions and encourage students to engage in various student-centered, performance based activities, which enables their collective application and analysis of various multicultural instructional strategies, materials and activities and how these activities either empower and/or disable student success.

C. Research Procedure

According to Kapeleris (2010), "Those who seek and acquire knowledge through reading, learning, observation, investigation and experimentation will grow and develop in their specific disciplines. Those who then adopt or apply the knowledge will create significant value for society." This research study investigated the effect of the flipped classroom model on pre-service teachers' knowledge application and self-efficacy for working in diverse classrooms. Based on empirical research (Bergmann & Sams, 2012; Flavell, 1976; Stayer, 2007) this study was guided by these three overarching questions:

1) Will the use of the flipped classroom model, as an interactive learning framework, improve students' application of knowledge?
2) Will the use of the flipped classroom model, as an interactive learning framework, improve students' self-efficacy capabilities compared to a traditional classroom model?
3) Is there a relationship between students' knowledge application and self-efficacy in a flipped classroom learning environment model?

Research Hypotheses:

The flipped classroom teaching strategy stems from a large body of literature on student-centered learning such as Piaget' work (1967) on constructivism and collaborative learning and Vygotsky (1978) on cooperative learning. Based on the prior research, the investigator hypothesize the following:

1) The flipped classroom teaching strategy expect to improve students' application of knowledge
2) The flipped classroom teaching strategy expect to improve students' self-efficacy compared to a traditional classroom model

3) There will be strong and positive relationship between students' knowledge application and their self-efficacy in a flipped classroom learning environment

Research Methods

The purpose of this research study is to investigate the relationship between the use of the flipped classroom model and students' knowledge application and self-efficacy. Guided by a review of multidisciplinary studies on flipped classroom and metacognitive knowledge though May 2013, the investigator hypothesized that students' capacity for knowledge application and metacognitive capacities would improve between phase one and phase two. Study participants included 36 pre-service teachers enrolled in content literacy courses at a medium sized, mid-western university. Participants were non-science majors 35 female and 1 male. English was reported as the native language of all participants. The average reported age of the participants was 22-26 years (SD = 1.213 years). Participants were a mixture of Caucasian, Hispanic and Asian decent, and all were students in their senior year.

During phase one of the study, students participated in a traditional classroom teaching model, which contained a large lecture discussion component, power point slides, individual note taking requirements, and an in-class multiple choice quiz developed around the topic of effective instructional strategies and activities for developing fluent readers and writers. During phase two, students participated in a flipped classroom model, which contained a large collaborative element for the instructional methodology with various interactive activities such as: lesson simulations, a group jigsaw activity, partner case analysis, and an online quiz developed around the topic of effective instructional strategies and activities for building children's word knowledge.

Data Sources

The mixed methods study relied on the triangulation of qualitative data sources comprised of: classroom observations and discussion notes, students' case study analysis results and information collected from two, (pre and post) metacognitive, self-analysis surveys, The quantitative data included a 25 question demographic survey and a 20 question, multiple choice quiz covering the content material covered during phase one and phase two of the study.

D. Summary of Findings

An analysis of the research data suggested that the studies' findings were consistent with current research (Bergmann & Sams, 2012; Bishop & Verlerger, 2013, Stayer, 2007) that the flipped classroom model improves students' perceived understandings and application of course material through enhanced collaboration and self-analysis activities. The four main themes that emerged from the meta-analysis of the data were: collaborative inquiry and application, metacognitive reflection, the professors "theory of action," and the important role of creating a culture of learning in the classroom.

The correlation between the hands-on collaborative components of the flipped classroom model and students' application of the lesson material emerged as a dominant theme time and again, both in the analysis of the research (Bergmann & Sams, 2012, Tucker, 2012) and in the study findings. Results from both the observational data and the survey findings, showed students resounding found preferred hand-on, collaborative group work, stating that it, "enabled them to practice using the material they had learned in the chapter (and in class discussion). They also stated that it provided the opportunity to see the inherent challenges in certain practices, and they were able to discuss their ideas and impressions of these limitations with their classmates. Another key theme, which emerged was the importance of consistent, metacognitive reflection regarding the learning process following each of the phases of the study.

The role of metacognition in improving student outcomes emerged from the literature as one way to influence learning (Schraw, G., Crippen, K., & Hartley, K., 2006; Tanner, 2012), a theory that was supported in the study findings. More than 75% of the students commented that specifically focusing on the three areas: 1) what they learned, 2) how they learned it, and 3) what they needed to do in the future to improve their learning proved significantly more helpful than the traditional summative reflections they typically did in other courses, which usually only focused on the first area. For example, student 23 specifically stated that having this opportunity to reflect metacognitively at the conclusion of both of the phases (traditional versus flipped), really enabled her to think about how she learned best and to make measureable goals for how she could take more ownership of her learning in the future.

Argyris & Schön's (1974) "theory of action" regarding espoused theory (what we say), versus our theories in use (what we do) was selected to illustrate the dichotomy in the findings regarding the professors use of power in the classroom, and how it differed from phase 1 (traditional) to phase 2 (flipped). This concept of modeling how to use power 'with' versus 'over' others emerged multiple times in the data. Students reported in their reflections and in classroom discussions, how much more they learned when the professor acted as facilitator of learning in the class, asking questions to help motivate, guiding and empower them to work collaboratively with their peers versus simply standing at the front and lecturing from a power point. The data described the professors' role in phase 2 (flipped) as hands-on; an active supporter of the learning process; consistently modeling those characteristics that the students felt were important for them to develop for use as future teachers with their own students.

The final theme that emerged from the study findings and that concurred with the literature was the important role of creating a culture of learning. One key part of creating such a

classroom environment is understanding that it is a collaborative experience; that the responsibility for learning is a collective process in which all members of the [class] community must have a part (Fullan, 1992; Marzano, 2003; DuFour & Eaker, 2004). Newmann & Wehlage (1995) found that, "If organizations want to enhance their learning potential…they should work on building a community that is characterized by, 'shared purpose, collaborative activity, and collective responsibility among participants.'

E. Conclusions and Recommendations

This research contributes conceptually by theorizing that the flipped classroom model directly influences pre-service teachers' knowledge application and metacognitive usage. It addresses a gap in the literature in identifying how the flipped classroom model is defined, introduced, and employed in conjunction with specific experiential learning activities and metacognitive reflective practices. Even though the method and sampling procedures restrict a broad based, general application, the explanatory framework could be conceptually generalizable to a wider audience.

***Documentation Requested**

I plan to disseminate the findings from this study through various peer review journals as well as writing several chapters for a Flipped Classroom book with Dr. Ibrahim and Dr. Walsh, which will be submitted for review in December.