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Final Report

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Final Report

Arkansas Tech University

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Accountability: Making it Meaningful

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My research paper, “Improving Pre-Service Teacher’s Consistency in Establishing Academic Expectations and Accountability Systems for Their Students” was presented at the National Association of Teacher Educators (ATE) conference, “Accountability: Making it Meaningful,” held in Minneapolis, Minnesota July 31 – August 4, 2015.

B. Abstract

The purpose of this study was to examine the effects of employing various multimedia tools in a flipped classroom model on pre-service teachers’ self-efficacy and knowledge application abilities as it pertains to empowering them as teacher leaders. The investigator employed a within-subject design with an independent variable: the flipped classroom or lecture-based instructional model and two dependent variables: (1) knowledge application of various multimedia tools and (2) students’ perception of self-efficacy as teacher leaders. The study participants included 36 senior level elementary education majors. The study results showed that there were indeed differences between students’ mean test scores and self-efficacy scores and that the differences were statistically significant in the flipped classroom model as compared to the traditional classroom model. The main conclusion that emerged from the researchers’ interpretation of the study’s findings and deductions regarding the relationships to the literature was that the flipped classroom model (Bergmann & Sams, 2012; Bishop & Verlerger, 2013) does in fact influence students’ perceived self efficacy (Bandura, 2006) regarding their understanding and application of course material and that multimedia tools (Mayer, 2005) do indeed play a role in this developmental process.

C. Purpose/Objectives (research question, hypothesis, problem to be investigated)

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 as teacher leaders in diverse classrooms. Based on empirical research (Bergmann & Sams, 2012; 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 is expected to improve students’ application of knowledge.
- 2) The flipped classroom teaching strategy is expected 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

D. Significance/Need (lit review, gaps, how project contribute to field of study)

Although the lecture discussion model has been relied upon for decades as a mechanism to help students acquire new knowledge (Hattie, 2008; Schwerdt, 2009), other researchers argue that the problem with this instructional methodology is its limitations in positively influencing

students' application and or transfer capabilities of new knowledge. The research suggests that having students familiar with the materials before class, either through having read the chapters or watched videos, enables the instructor to practice more complex levels of skills and students have the opportunity to ask more meaningful question in class; work through problems with the guidance of the instructor and the support of their peers; and there is a much stronger emphasis on collaborative, interactive learning. Empirical research has shown that the brains' capacity for multimodal processing (visual and auditory), when coupled with multimedia instruction, can directly influence student learning (Baddeley, 1992; Mayer, 2005). Therefore, many educators consider students' self-efficacy to be an essential indicator to evaluate students' engagement in problem solving activities, which is a significant part of the flipped classrooms and directly influences their to learn. While numerous benefits of student-centered, hands on learning environments have been documented in the literature, the actual effects of the flipped classroom model on student self-efficacy in creating and applying multimedia projects still requires more analysis.

E. Process for Attainment of Objectives/Goals: Professional Enhancement

Improving my pre-service teacher's consistency regarding their academic expectations and accountability systems for their students is one of my core research interests and the focus of my current research proposal. One of my main objectives for attending this particular national conference is that I have the opportunity to serve as the Executive Secretary for our Arkansas Chapter of ATE so it's beneficial for me to attend their National conferences so that I can remain informed regarding important things that are happening across the country so that I may in turn disseminate that information to the other 70+ members of our local chapter. I also serve on ATE's Global Social Justice Commission, the Technology Committee and the Teaching

Standards Taskforce so having the opportunity to attend this particular conference enables me to fulfill several professional responsibilities regarding research and service.

F. Dissemination of Results

Keeping our paradigm current requires engaging in ongoing research, application and reflection and representing Arkansas Tech at national conferences such as this one allows me to share my own research findings with colleagues from around the country as well as to benefit from the collective expertise of those presenting. This form of national networking is invaluable as we work to develop important professional relationships that can aide in our department's development of a nationally accredited, technologically relevant Curriculum and Instruction program for both our online courses and campus based courses. I plan to disseminate the findings from this study through a book chapter in the ATE Yearbook XXIV; it's already been accepted for publication. Furthermore, conducting ongoing research enables presentations at local, national and international conferences, such as this one, and increases my professional capacity to disseminate new insights with the committees on which I serve, more effectively teach and mentor the students with which I work, and perpetually look for new opportunities and ideas to engage in meaningful research on those issues which are most pressing for effectively preparing 21st century teachers for an ever changing global society.

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