EUE Proposal

Project ID#

2020-10

Project Title

Coming Together: Integrating Innovative Technology into Math Methods Courses for Early Childhood and Elementary Education Majors.

Project Director	ID Number	Telephone	Email
Barbara Martin	800570985	650-3436	barmart@siue.edu

Department	Campus Box	School College
Teaching and Learning	FH 1133	SEHHB

Course or Program

Early Childhood and Elementary Education

Project Co-Director	ID	Department	Email
Anni Reinking	618838	Teaching and Learning	anreink

Student Impact:	90

Priority Rating (If Submitting Multiple Proposals):	

Project Budget

Salary	Wages	Travel	Equip.	Comm	CServ	Auto	Tele	Awards	Total
0	0	0	3320	0	0	0	0	0	3320

Cost-Sharing

Salary	Wages	Travel	Equip.	Comm	CServ	Auto	Tele	Awards	Total
0	0	0	0	0	0	0	0	0	0

Prior EUE Support

Project Director	Project Number	Award Amount	Project Dates
Barbara Martin	19-23	$16418	2018-2019

Section 1: General Information

Title: Coming Together: Integrating Innovative Technology into Math Methods Courses for Early Childhood and Elementary Education Majors

Project Director Contact: Barbara Martin barmart@siue.edu (Teaching and Learning)

Anni Reinking anreink@siue.edu (Teaching and Learning)

Section 2: Project Narrative

Summary

In their 2000 Principles and Standards for School Mathematics document, the National Council of Teachers of Mathematics (NCTM) states, "Technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhances students' learning" (p. 24). Further, the International Society for Technology in Education (ISTE), claims, "technology used effectively, can help all students meet and exceed the rigorous learning goals embedded in the Common Core State Standards by providing access to tools and resources that personalize instruction and creating rich, engaging and relevant learning environments." (ISTE.org). The rapid development of technological innovations paired with this calling for integrated technology in mathematics classrooms presents a substantive challenge to pre-service teacher education.

The purpose of the study is to advance the discussion on effective integration of technology in early childhood and elementary mathematics classrooms through teacher education. Our argument, grounded in theories and research from the technological pedagogical content knowledge (TPaCK) framework (Koehler & Mishra, 2009) is that a holistic approach to educating pre-service teachers should engage learners in activities in which they can develop mathematics specific content through the use of best pedagogical practices, and innovative

technologies. Towards this goal, pre-service teacher preparation programs must present educational technology, pedagogy, and mathematical knowledge for teaching as an integrated whole, rather than individual components.

This study will analyze pre-service teachers' course work from Early Childhood and Elementary Teacher Preparation Math Methods courses for specific evidence of the different, developed TPaCK constructs.

Narrative

Technology has been gradually infused into the everyday lives of educators and thus has become a vital part of teacher education programs across the country. Despite the fact that today's teacher candidates are technologically fluent with everyday technologies, many still struggle with how to successfully implement technology into instruction. To explain this discrepancy, many recent studies have examined barriers that students perceive are causing the lack of technology confidence (Clark, Zhang & Strudler, 2015; Frazier, Sadera & Robinson, 2012; Richardson, 2012). In order to fully understand technology integration in teacher education, it is also important to examine faculty perceptions of the marriage between technology and pedagogy in teacher education.

Some might argue that technology in education is a new trend; however, a close examination of educational history would uncover the first use of technological tools in classrooms almost a century ago. In fact, in 1925 teachers began using filmstrips in classrooms for various instructional purposes and the use of technological tools in education has continued to grow at a rapid rate since that time (Gagne, 2013).

In 1925 when teachers began using tools in the classroom, the tools were most often used instructionally. In 1972, with the creation of the Scrantron student answering systems,

technology in education began to shift from an instructional teaching instrument to tools of student use. In retrospect, this addition of student technology use broadened the educational technology scope significantly as the tools were no longer solely used by instructors (Gagne, 2013). With the advent of personal computers, the Internet and interactive whiteboards, technology began to be comfortably embedded into the life of students and educators across the nation. In fact, Jones, Bunting, and de Vries (2013) illustrate this growth by describing how technology has evolved from tools to knowledge, to a characteristic of humanity. In other words, the evolution of technology, which was once tool-based, has now become a thread through our cultural and societal identities.

Instructional technology approaches have evolved along with the educational technology trends, and the role of the teacher has shifted from lecturer to facilitator of knowledge, assisting with moving from teacher centered to student centered instruction (Marzilli, Delello, Marmion, McWhorter, Roberts, & Marzilli, 2014). As technology has evolved, students have become more comfortable with new tools and fostered independent learning skills. As a result, teachers have embraced the transition from the "sage on the stage" to a more scaffolded approach of "guide on the side" assisting students as they seek knowledge through self-directed learning opportunities. Holland and Holland (2014) discuss the importance of this shift as they illustrate the best approach to tablet learning, but can apply to any technology tool. "To have tablet learning work well, power has to shift from instructors and managers to the learners themselves. It is a self-directed or do-it-yourself (DIY) approach to learning" (p. 19).

In today's classrooms, students are engaged in real-world applications and self-guided learning opportunities that are supported by the technology tools that empower them as future

digital citizens. They are learning to navigate in a technological world as they maneuver through their academic journeys.

Not only is educational technology assisting students in taking the educational reigns through their academic voyages, it is providing individualized learning opportunities for each student. In the world of differentiated instruction, technology provides the ability to meet the needs of various types of learners. For example Holland and Holland (2014) discuss how digital tools now have such a wide range of abilities to adjust learning opportunities for students achieving at all academics levels, and in need of special accommodations, such as, varied font or read aloud text, language control, auto commands, interactive or even collaborative capabilities. All of these mechanisms have the potential to further differentiate learning opportunities and put the students in the driver's seat of their own learning adventure. Illustrated in this manner, it is clear how technology is embedded comfortably in education, thus causing an evolution of the field, the profession, and the potential learning opportunities available to students.

In response to this, teacher preparation programs are beginning to recognize the importance of preparing teacher candidates to use technology in their future instruction. Programs are beginning to provide teacher candidates with ample preparation in shifting instructional approaches and vast knowledge about innovative educational technologies. In a meta-analysis of the value and use of technology in K–12 education (Valdez et al., 2004), the North Central Regional Laboratory found that "technology innovations are increasing the demand for reform in teaching and learning approaches that, in turn, are having a significant impact on technology use expectations" (p. iii).

New teacher education graduates should be as literate as the digital natives they are intending to teach and should be confident in embracing the ever-changing world of technology in education as this will play an integral role in future classrooms. Nationally, educators agree that there is vital importance in teacher candidates developing 21st century technology skills. "We have entered a crucial time when fundamental shifts in the economy, changing nature of the workforce, demographic shifts, educational competitiveness, globalization of society, and computerization of the workplace make the technological preparation of teachers an urgent problem we can no longer afford to marginalize" (Lambert & Gong, 2010, p. 55).

With the integration of technology into the daily lives of educators and students, it is vital that teacher preparation programs across the nation respond (Kyei-Blankson, Keengwe, & Blankson, 2009). In fact, the National Research Council (2010) recognizes this need to address technology integration in both content (e.g., undergraduate science and math courses) and instructional pedagogy courses. In their 2000 Principles and Standards for School Mathematics document, the National Council of Teachers of Mathematics (NCTM) states, "Technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhances students' learning" (p. 24). Further, the International Society for Technology in Education (ISTE), claims, "technology used effectively, can help all students meet and exceed the rigorous learning goals embedded in the Common Core State Standards by providing access to tools and resources that personalize instruction and creating rich, engaging and relevant learning environments."

To address this call for more fluid technology integration, many teacher preparation programs have considered a shift from skill-focused technology courses to technology-infused pedagogy. Today's teacher education programs are encouraged to provide pre-service teachers

with ample preparation in shifting to instructional approaches enriched with innovative educational technologies.

Educators interested in successful technology implementation and integration into k-12 classrooms, as well as teacher education programs, have begun to also consider another framework called TPaCK (Technology Pedagogy and Content Knowledge model). TPaCK is a framework for describing and understanding the goals for technology use as a model that introduces the interrelationships among the three basic components of knowledge (i.e., technology, pedagogy, and content) (Koehler & Mishra, 2009). This model has become a very valuable tool in examining how integrated technology can seamlessly strengthen instructional strategies as well as content knowledge in curriculum.

The TPaCK framework is often depicted using a Venn diagram with three overlapping circles, each representing a form of knowledge. The framework includes three constructs of knowledge: pedagogical knowledge (PK), content knowledge (CK), and technological knowledge (TK). At the core of the TPaCK model, the ideal technology integration is illustrated where all three constructs combine into a technology, pedagogy and content knowledge construct (Figure 1).

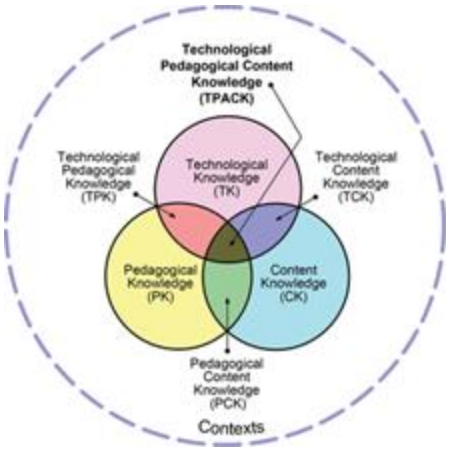

Figure 1. Technological Pedagogical Content Knowledge (TPaCK) Framework

At the core of TPaCK, technology, pedagogy, and content combine to illustrate the optimal goal of technology-infused curricula as suggested by ISTE NETS technology standards as well as the accreditation body CAEP. This merging point at the core of TPaCK clearly articulates the goal for both classroom teachers and higher education instructors. Thus, the creation of the TPaCK model emerged to become a valuable tool in examining how integrated technology can seamlessly strengthen instructional strategies as well as content knowledge in curricula (Brantley-Dias, Kinuthia, Shoffner, De Castro, & Rigole , 2007; Cox & Graham, 2009; Hu & Fyfe, 2010; Hsu, 2012; Koelher & Mishra, 2009; Schmidt, 2009). Overall, technology integration requires that teacher candidates understand the technology tools, combined with the specific capabilities of each tool that encourage the learning of content specific concepts.

Through the review of literature on technology integration in teacher preparation, it is evident that while today's teacher candidates are confident and competent in the use of technology in their daily lives, technology skills are not translating to effective technology integration into the classroom. Research on the topic suggests that through the TPaCK lens, teacher preparation programs can build an understanding of the relationship between technology and pedagogy by modeling technology integration across education methods courses.

Therefore, the purpose of this study is to advance the discussion on effective integration of technology in Teacher Preparation Programs. In this qualitative study, we will examine course work in early childhood and elementary mathematics methods courses for specific evidence of the different, developed TPaCK constructs. Our argument, grounded in the technological pedagogical content knowledge (TPaCK) framework (Koehler & Mishra, 2009) is that a holistic approach to educating pre-service teachers should engage learners in activities in

which they can develop mathematics specific content through the use of best pedagogical practices, and innovative technologies.

References

Brantley-Dias, L., Kinuthia, W., Shoffner, M. B., De Castro, C., & Rigole, N. J. (2007). Developing pedagogical technology integration content knowledge in preservice teachers: A case study approach. *Journal of Computing in Teacher Education*, *23*(4), 143-150.

Clark, C., Zhang, S., & Strudler, N. (2015). Teacher candidate technology integration: For student learning or instruction? *Journal of Digital Learning in Teacher Education*, *31*(3), 93-106.

Cox, S., & Graham, C. R. (2009). Diagramming TPCK in practice: Using and elaborated model of the TPCK framework to analyze and depict teacher knowledge. *TechTrends, 53*(5), 60

Frazier, L., Sadera, W., & Robinson, D. (2012). Teacher candidate technology use: The what and the why. *Society for Information Technology & Teacher Education International Conference*. *2012*(1), 1781-1783.

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Holland, J., & Holland, J. (2014). Implications of shifting technology in education. *TechTrends*, *58*(3), 16-25.

Hu, C., & Fyfe, V. (2010). Impact of a new curriculum on pre-service teachers' Technical, Pedagogical and Content Knowledge (TPaCK). In C.H. Steel, M.J. Keppell, P. Gerbic & S. Housego (Eds.), *Curriculum, technology & transformation for an unknown future*. Proceedings ascilite Sydney, 185-189.

Hsu, P. (2012). Examining the impact of educational technology courses on pre-service teachers' development of technological pedagogical content knowledge. *Teaching Education*, *23*(2), 195-213.

Jones, A., Bunting, C., & de Vries, M. J. (2013). The developing field of technology education: A review to look forward. *International Journal of Technology and Design Education*, *23*(2), 191-212.

Koehler, M., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPaCK)? *Contemporary Issues in Technology and Teacher Education*, *9*(1), 60-70.

Kyei-Blankson, L., Keengwe, J., & Blankson, J. (2009). Faculty use and integration of technology in higher education. *AACE Journal*, *17*(3), 199-213.

Marzilli, C., Delello, J., Marmion, S., McWhorter, R., Roberts, P., & Marzilli, T. S. (2014). Faculty attitudes towards integrating technology and innovation. *International Journal on Integrating Technology in Education*, *3*(1), 1-20.

National Council of Teachers of Mathematics (Ed.). (2000). *Principles and standards for school mathematics* (Vol. 1). National Council of Teachers of Mathematics.

Richardson, G. (2012). What more can we do? Analyzing the impact of preservice teacher technology training on subsequent classroom technology integration. In *Society for information technology & teacher education international conference, 2012*(1), 2386-2392.

Schmidt, D. S. (2009). Technological pedagogical content knowledge (TPaCK): The development and validation of an assessment instrument for preservice teachers. *Journal of research on technology in education* (International Society for Technology in Education), *42*(2), 123.

Valdez, G., McNabb, M., Foertsch, M., Anderson, M., Hawkes, M., & Raack, L. (2004). *Computer-based technology and learning: Evolving uses and expectations*. North Central Regional Educational Laboratory, Oak Brook, IL.

Project Budget, Budget Justification and Cost-Sharing summary (included in Narrative file, but not counted in page limits)

Innovative Technology Tools for the Technology Project

1. Lego Wedo Robotics Kit $200 x 4 = $800
2. Osmo Genius Kit for iPad $100 x 4 = $400
3. Evo App-Connected Coding Robot $100 x 4 = $400
4. LEGO Boost Creative Toolbox 17101 Building and Coding Kit $150 X 4= $600
5. Learning Resources Code & Go Robot Mouse $20 x 4= $80
6. Discovery Kids Mindblown STEM 12-in-1 Solar Robot Creation 190-Piece Kit with Working Solar Powered Motorized Engine and Gears, Construction Engineering Set $30 x 4 =$120
7. GeoSmart Flip Bot $60 x 4= $240
8. Dash and Dot robots $120 X 4

Total for technology tools = $3320

Budget justification

The money requested for the EUE grant will be used to purchase the above technology tools to use in the courses that teach Elementary Education and Early Childhood Math Methods for Teachers.

Biographical Sketch or CV (attached)

Appendices

Section 3: Support Statement from Chair and Dean

Memos from Chair and Dean (attached)

Section 4: Results from Prior EUE Support (if applicable)

EUE: Preparing Early Childhood Teacher Candidates Using Virtual Learning Environments (2018, Reinking)

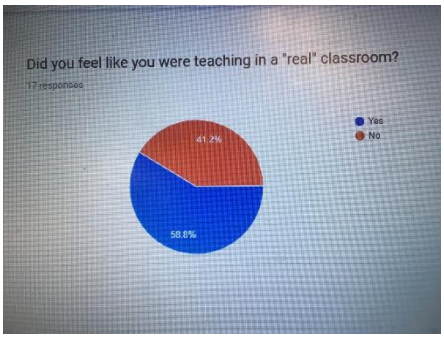
This project was implemented in the spring of 2018. The impact of the study increased the early childhood programs integration of technology and implementation of best practices for students in the program. The specific courses the virtual lab was implemented in with the funds from this grant were CIED 318 and CIED 417. The use of the VLE provided a safe and low-stress environment and addressed the candidates' needs.

The evaluation process for this project included two strategies:

1. The professor, Dr. Reinking, used a Supervisor Classroom Observation form to evaluate the impact. The document was used to evaluate teacher candidates' implementation of lessons during the virtual learning environment.

2. The students who participated in the virtual lab experience in the early childhood classroom setting completed a survey that explored their reactions to the virtual learning environment. This qualitative measure assessed the teacher candidates' social acceptance of simulated learning environments and how this approach enhanced their understanding of the strategies implemented during the experience.

The findings from this study and use of the grant funds showed increased use of best practices after multiple uses in the lab. Additionally the survey data are documented below:



Support for the over half of the participants feeling as if they were in a "real" classroom include statements such as:

The children responded just like they would in a real classroom.

The children were behaving in a manner that was similar to how preschool children behave.

Participants who felt it did not represent a "real" classroom included statements such as:

I felt like the reactions of the kids were too over dramatic.

The students' behavior was very unrealistic.

Overall the EUE funds helped in the preparation of students in the early childhood program through the use of the virtual learning environment.

EUE: Integrating Feedback and Analytic Technology into Coursework and Supervision in the Teaching and Learning Department (2018, Martin & Reinking)

This project incorporated multiple programs within the wider Department of Teaching Learning to integrate technology, specifically GoReact, to evaluate class material and practicum experiences. The project focused on providing higher quality feedback, more "in the classroom" time for supervisors through synchronous and asynchronous feedback, and incorporating more feedback on specific students in various courses. The EUE allowed the co-project directors to implement training, a book study, and implementation of GoReact into at least 10 courses throughout special education, elementary education, early childhood education, and secondary education.

The use of GoReact, the technology platform facilitated feedback, coaching, and learning provided time for reflection, conversation, and growth on a one-on-one basis throughout the entire time in the program. Additionally, these funds provided faculty members in the same program access to and knowledge of past observations and projects in order to pinpoint areas of growth or areas that still may need work. This work was especially crucial to the field of teaching as schedules.

The proposed project had three purposes:

(1) investigate the student and faculty ease of use with the new technology platform;

(2) analyze the teacher candidate growth and perception of growth through the use of the technology platform;

(3) analyze the faculty and instructor perception of teacher candidate growth and investment in the technology platform.

The findings from the use of the EUE funds displayed confidence in using the GoReact technology platform. Additionally, the faculty members in all programs within the Teaching and Learning Department were able to analyze student growth through the technology platform. Finally, after the implementation of this technology through the use of the EUE funds has created an avenue for sustainability with this project. After faculty were able to see the benefits, we have been able to allocate funds to continue with the technology for years to come.

SIUe
School of Education
Health & Human Behavior

Jessica S. Krim, Ed.D
Interim Assistant Dean
School of Education, Health and Human Behavior

0118 Alumni Hall, Box 1121
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Date: March 21, 2019

To: EUE Review Committee

From: Jessica Krim (Interim Assistant Dean, SEHHB)

Subject: EUE Proposal Submitted by Dr. Barbara Martin and Dr. Anni Reinking

Drs. Martin and Reinking have submitted an EUE proposal to integrate innovative technology into math methods courses taken by elementary and early childhood majors. These two researchers have a longstanding record of success in both integrating innovative technology in their teaching and studying their teaching practice. Through this project they plan to engage teacher candidates in real-world applications and self-guided learning opportunities supported by this technology. The qualitative data they collect will be framed within an established model of technological pedagogical content knowledge (TPaCK), and they expect this data to advance the discussion on effective integration of technology in all teacher preparation programs.

I am aware of Dr. Martin and Dr. Reinking's plans and do not believe their project will pose any problems for the school or their department. The School of Education, Health and Human Behavior is committed to instructional innovation. I recommend that this project be funded.

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Anni Krummel Reinking, Ed.D.

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EDUCATION

Illinois State University; *Normal. IL* Dec. 2015
Ed.D.-Curriculum and Instruction
Early Childhood and Elementary Education,
Multicultural Education, Teacher Evaluation

Dominican University*; River Forest, IL* May 2009
MS. Ed. Early Childhood Education

University of Iowa*; Iowa City, IA* May 2006
BA Psychology

CERTIFICATIONS

Illinois State Teaching License
Type 4 Alternative Certification (Type 04) (current)
Birth-3rd grade & considered Highly Qualified under NCLB Birth to 2nd and ESL

Indiana State Teaching License
Certified to teacher K-6

PROFESSIONAL EXPERIENCE

Southern Illinois University-Edwardsville: *Edwardsville, IL* Aug. 2016-Present
Tenure Track Assistant Professor- Early Childhood Education
University Hearing Panel Member (University-wide) August 2018-Present
KDP Co-Faculty Mentor Aug. 2018-Present
Virtual Professional Practice Lab Program Coordinator Nov. 2016-Present
CAEP Standard 2 Committee Member 2017-Present
New Faculty Mentor 2018-Present
Undergraduate and Graduate Mentor 2016-Present
INTG499
New Course Development and Redesign 2016-Present
ELL in ECE
ECE Assessment
URCA Mentor Spring 2018; Spring 2019
Operating Paper Chair- Teaching and Learning 2017-2019
Dissertation Committee Member 2017-2019
Program Review Committee (University-wide) 2017-2018
Faculty Fellow 2017-2018
Pedagogy Think Tank 2016-2017

Professional Development Contractor Dec. 2007- Present
Local, regional, national, and international professional development and curriculum design
(Compensated and Pro Bono)
Early Head Start, Peoria, IL (Instructional Coach)
Peoria ROE, Peoria, IL
St. Clair ROE, Belleville, IL

International Academic Alliance, NY & Shanghai, China Aug. 2018-Present
Project Lead: Wee Lion Curriculum Development
Bilingual, Early Childhood Curriculum

EdReports.org, *Virtual (Contractor)* June 2016-Present
Reviewer and Writer

Monmouth College*: Monmouth, IL* Aug. 2015- Aug. 2016
Visiting Assistant Professor- Elementary Education
Planning Committee Member

PROFESSIONAL AWARDS/GRANTS

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Southern Illinois University Edwardsville

Institute of Educational Science Jan. 2019
EUE (**Funded; $16,418**) June 2018
Implementing Video Evaluations in Supervision: Co-PI
Spencer Foundation Grant (Not Funded) May 2018
Gates Foundation RFI May 2018
Faculty Fellow Award May 2018
Robert R. McCormick Foundation (**Funded; $50,000**) Dec. 2017
Increasing Early Childhood Teacher implementation through Virtual Learning Environments: Principal Investigator
STEP Grant (Not Funded) Dec. 2017
National Science Foundation (Not funded) Nov. 2017
EUE (**Funded; $6,110**) Oct. 2017
Implementing Virtual Learning Environments in Undergraduate Programming: Principal Investigator
Dean's Travel Grant (Funded for travel) June 2017 and May 2018
Meridian Award (Not Funded) Mar. 2017
Spencer Foundation Grant (Not Funded) Nov. 2016

Monmouth College

Faculty Ambassador at Project LEAD (Diversity Initiative) Sept. 2015
Student Travel Grant (Funded; ~$600) Oct. 2015 & May 2016

Illinois State University: College of Education

Fall 2014 Travel Grant Recipient (Funded; $750) Oct. 2014
Summer 2013 Internship Recipient (Funded; $5,000) June 2013
Spring 2013 Travel Grant Recipient (Funded; $750) Apr.2013

PUBLICATIONS

Reinking, A.K. (2019; Expected June) *Difficult Conversations: A Toolkit for Educators in Handling Real-Life Situations.* Rowman & Littlefield Publishing Group: Lanham, MD.

Reinking, A.K. (2019). *Not just black and white: A white mother's story of raising a black son in multiracial America.* Front Edge Publishing: Ann Arbor, MI.

Reinking, A. K. & Martin, B. (2019). 5 Stem Integration Ideas. *New Teacher Advocate*.

Reinking, A.K. (2018, Oct 15). *Questions answered about virtual reality and early childhood teacher preparation.* [Blog]. ILAECTE. Retrieved from https://wordpress.wiu.edu/ilaecte/2018/10/15/questions-answered-about-virtual-reality-and-early-childhood-teacher-preparation-guest-blogger-dr-anni-reinking/

Reinking, A.K. & Martin, B. (2018). Strategies, research, and examples for elementary teachers to integrate STEM. *K-12 STEM Education, 4*(4), 413-419.

Reinking, A.K. & Martin, B. (2018). *Training teachers in virtual environments.* Paper published at TeachLive 2018 Conference. University of Central Florida.

Reinking, A.K. (2018). *Improving early childhood teacher classroom instruction using the early childhood TeachLive scenario/avatars.* Paper published at TeachLive 2018 Conference. University of Central Florida.

James, S., Reinking, A.K., & Martin, B. (2018). *A long and winding road: Implementing virtual learning environments in multiple contexts.* Paper published at TeachLive 2017 Conference. University of Central Florida.

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Research Interests: Successful technology integration in education, Technology in teacher preparation, Technology integration in mathematics, STEM, Mathematics instruction/Methods in elementary education

Education

Illinois State University

Doctor of Education (Ed.D) – Curriculum and Instruction- July 2016

Dissertation topic: Technology integration in teacher preparation

University of Missouri-Columbia

Bachelor of Science - Elementary Education - May 2001

Certification: Elementary Grades 1- 6

Masters of Science - Curriculum and Instruction - July 2002

Advanced method classes, Behavior management and Learning theory

Teaching Experience

2014-current, Southern Illinois University Edwardsville

Edwardsville, IL

Assistant Professor

CIED 311- Classroom Differentiation
CIED 312 – Language and Communication for Elementary Educators
CIED 314- Classroom management
CIED 441 – Learning and Teaching Mathematics at Elementary School Level

Supervisor

CIED 302- Elementary Education program supervision
CIED 303- Elementary Education program supervision
CIED 451 & 452 – Elementary Education student teaching supervision
ECHOS - Early childhood student teachers

2007-2012, Minnesota State University

Moorhead, MN

Fixed Term Professor

ED205: Introduction to Education & Technology
ED 310: Social Foundations
EECE 291: Foundations of Literacy
EECE 341: Reading and Language Arts I
EECE 388: Classroom Assessment
SpEd 343: Curricular Issues
SpEd 413: Instructional Strategies
SpEd 490: Reading and Writing Methods for SpEd Majors

Publications and Presentations

- Reinking, A. K. & Martin, B. (Publishing Spring 2019). 5 Stem Integration Ideas. *New TeacherAdvocate*
- Marlette, S., Johnson, B. & Martin, B. (Novemeber, 2018). *Using Preservice Teachers' Self-Perceptions of Competence to Prepare for a High Stakes edTPA Elementary Literacy Assessment Performance Examination*. Association of Literacy Educators and Researchers. Presentation at the Association of Literacy Educators and Researchers Conference in Louisville, KY
- Reinking, A. & Martin, B. (Accepted but will not publish due to fees) *Reducing Teacher Stress Using Virtual Learning Environments.* Creative Education (CE) Journal. Scientific Research Publishing
- Martin, B. & Reinking, A. (2018). *Key Ideas to Consider When Implementing STEM.* Illinois Math Teacher Journal.
- Reinking, A. & Martin, B. (2018) *Strategies, Research, and Examples for Elementary Teachers to Integrate STEM.* K-12 STEM Journal. Institute for the Promotion of Teaching Science and Technology
- Reinking, A. & Martin, B.M. (2018). *The gender gap in STEM fields: Theories, movements and ideas to engage girls in STEM environments.* Journal of New Approaches in Educational Research
- Reinking, A., Martin, B. & James, S. (2018). *Implementing a Campus-wide Site License for Virtual Learning Environment*.[White Paper]. Proceedings from the 5th Annual National TLE TeachLivE™ Conference at the University of Central Florida. Orlando, Florida

- Martin, B. Reinking, A. & James, S. (2018). *Implementing a Campus-wide Site License for Virtual Learning Environment*. Presentation at the 5th Annual National TLE TeachLivE™ Conference at the University of Central Florida. Orlando, Florida.
- Martin, B. & Reinking, A. (2018) *Training teachers in virtual learning environments*. Presentation at the Focus on Teaching and Technology Conference at University of Missouri St. Louis (September, 2018).
- Martin, B. & Reinking, A. (2017) *Training teachers in virtual learning environments*. Illinois Educational Research Conference, Poster presented at the Illinois Educational Research Conference in Bloomington, IL (September, 2017).
- Martin, B. & James, S. (2017). *Both a little scared, neither one prepared*: *Co-teaching in a Virtual Learning Environment.* Teacher Education Division of Council for Exceptional Children, Poster presented at the TED Conference in Savannah, GA (October, 2017).
- Martin, B., James, S. & Reinking, A. (Not accepted. Revising to resubmit). *Co-teaching in a Virtual Learning Environment*. Journal of Technology and Teacher Education.
- Martin, B. & James, S. (2017). *Co-teaching in a Virtual Learning Environment*. .[White Paper]. Proceedings from the 4th Annual National TLE TeachLivE™ Conference at the University of Central Florida. Orlando, Florida.
- Martin, B. & James, S. (2017). *Finding the Silvering Lining: Co-teaching in a Virtual Learning Environment*. Presentation at the 4th Annual National TLE TeachLivE™ Conference at the University of Central Florida. Orlando, Florida.
- Reinking, A.K. & Martin, B.M. (Not accepted. Revising to resubmit). Increasing Girls'Curiosity in STEM. *Teaching and Teacher Education Journal*.
- Martin, B. (2017) *Faculty perceptions of technology practices in teacher preparation through a TPaCK Lens.* Education and Information Technologies Journal.
- James, S., & Martin, B. (2017) *Coteaching in a Virtual Learning Environment.* Presentation at the Focus on Teaching and Technology Conference at University of Missouri St. Louis (September, 2017).
- Marlette, S., Johnson, B. & Martin, B. (September, 2016). *Teacher Candidate Self-perception Competence to Prepare for Licensure Examination.* Illinois Educational Research Conference, Poster presented at the Illinois Educational Research Conference in Bloomington, IL
- Martin, B. (October, 2016). Engaging Ways to Use Technology in the Classroom. Presentation at Belleville Area Special Services Cooperative in Belleville, IL
- James, S., Fuchs, W. & Martin, B. (November, 2016). *Using Virtual Experiences with Teacher Educators.* Presentation at the Focus on Teaching and Technology Conference at University of Missouri St. Louis
- Marlette, S., Johnson, B. & Martin, B. (November, 2016). *Teacher Candidate Self-perception Competence to Prepare for Licensure Examination.* Poster presented at the Illinois Association of Teacher Educators Conference in Bloomington, IL
- Martin, B. (Not accepted) Faculty beliefs and practices in teacher preparation. *Journal of Research on Technology.*
- Martin, B. (Not accepted) Faculty attitudes about technology in teacher preparation. *CITE Journal*
- Cummings, L. & Martin, B.(2017) *Do You Believe in Mathematics: A Study of Elementary Pre-service Teachers*. Presentation at National Council of Teachers of Mathematics in SanAntonio, TX (March, 2017).
- Martin, B. (2017) *Faculty Beliefs and Practices in Teacher Preparation Through a TPaCK Lens*. Presentation at the International Society of Technology in Education Conference (June, 2017).
- Marlette, S., Johnson, B. & Martin, B. (February, 2017) *Teacher Candidate Self-perception Competence to Prepare for Licensure Examination.* Poster presented at the Association of Teacher Educators in Orlando, FL.
- Martin, B. (2014) TPACK in teacher preparation. *International Journal on Integrating Technology in Education*. 4(1), 1-10.

Professional Awards/Grants

2018 Southern Illinois University Edwardsville
SIUE Excellence in Undergraduate Education Grant: GoReact Implementation **$16,418** (Funded)
2017 Southern Illinois University Edwardsville
SIUE Faculty Development Grant: TeachLive Annual Conference **$2000** (Funded)
SIUE Faculty Development Grant: Kappa Delta Pi Education Honor's Society Convocation **$2000** (Funded)
2016 Southern Illinois University Edwardsville
SIUE Faculty Development Grant: TeachLive Annual Conference **$2000** (Funded)
SIUE Meridian Award (Not Funded)
Spencer Grant (Not Funded)