

## Candidate Statement

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During my coursework in Social Studies Education, my methods professors, as well as my mentor teachers, stressed the importance of student-centered, constructivist pedagogies. Many stressed the importance of these approaches as a way of creating civic and social identities among the student by allowing students to explore their own interests, and create their own connections to the content being taught. As I journeyed into the field during my student teaching placements, I was confronted by another reason to utilize this approach: when taught using “traditional,” teacher-focused methods such as lecture, the students were disinterested, and often not paying attention – a common issue, especially in Social Studies. However, by having the students explore and create meaningful connections to the content on their own with support from the teacher, the students were much more engaged, and performed better on the practice standardized tests.

Therefore, throughout my scholarship, I seek to examine and find ways to support student-centered learning. Hannafin (2012) defined student-centered learning as an instructional method where the student determines the goal, means, or both, of learning. Student-centered learning includes numerous pedagogical strategies such as project-based learning (Kilpatrick, 1918; Adderley et al. 1975), problem-based learning (Barrows & Tamblyn, 1980), and service-learning (Jacoby, 1993). Although these three pedagogical approaches have slightly different tenets, they all have a similar focus on student-centered qualities: communication, collaboration, and student inquiry

In general, research has shown student-centered learning experiences tend to be more effective because they lead more authentic, engaging, and collaborative learning experiences which lead to increased retention of content studied (Burrows, 2003, Cornelius-White, 2007; Strobel & van Barneveld, 2009). Furthermore, some have suggested that student-centered learning can be more influential when technology is used to support it (Brush & Saye, 2000; Kozma, 2006; Stahl et. al, 2006; Brush & Saye, 2009; Cornelius-White et al., 2012). In particular, scholars advocate that the use of mobile technologies, such as iPads, can be used to provide substantial support during student-centered learning due to the technology’s ability to focus student experiences to be more interactive, learner centered, authentic, collaborative, and on-demand (Chan et al., 2006; Fisher and Baird, 2007; Alyahya & Gall, 2012; Churchill et al. 2012). For example, Looi et al (2011) used mobile devices in their elementary science class and found that students showed improvement in their conceptual understanding of the content compared to peers without a device, collaborated more, and were willing and able to discuss and explain the content at a higher level.

Mobile technology can include “...any device that is small, autonomous, and unobtrusive enough to accompany us in every moment of our every-day life, and that can be used for some form of learning”

(Trifonova & Ronchetti, 2003, p. 2). Because of the affordances of mobile technologies, public schools across the United States have invested into mobile technology on a 1:1 basis, where each student has access to their own mobile device (Looi et al., 2010; Richardson et al., 2013). Therefore, my scholarship focuses on the use of mobile technology, specifically identifying ways to use mobile technology to support student-centered learning. In my first study, I led a team of researchers in exploring the implementation of a 1 student : 1 iPad initiative at the kindergarten level. During this research, it was evident that by allowing each student access to their own iPad, the students were able to explore content at their own pace and level, and to produce artifacts that adequately demonstrated their understanding of the content through a variety of means.

As described in the above paragraphs on the use of mobile technology within student-centered learning environments, and in particular in discussing collaboration within these environments, it is important to consider the role the technology plays in these environments, as "...learning in most settings is a communicational activity, a sharing of the culture" (Bruner, 1986, p. 127). In order to explore how the effects by and on the technology within these learning environments, I have chosen to study Social Informatics as my doctoral minor. Social Informatics is the study of the social aspects of computerization, which includes the subfields of computer-mediated communication (CMC), information policy, the social impacts of computing, design, organizational informatics, and more (Kling, 2007). This field of study can provide insight on the potential effects the use of the technology in these environments can have on how students interact with the content, the technology, and with each other.

## Research Focus and Goals

Based on my experience in the teaching at the K-12 and undergraduate levels, I have focused my research focusing on two main areas: student-centered pedagogies and how mobile technology tools can be used to support student-centered learning. In particular, I find myself exploring how 1:1 mobile initiatives in these settings support student-centered learning. By exploring how these 1:1 mobile initiatives support student centered learning, I aim to help students and teachers prepare themselves to be lifelong learners both inside and outside of the classroom with a focus on communication, collaboration, and inquiry. With this knowledge, I hope to obtain a tenure-track position at a teaching-intensive university where I may help prepare teachers to utilize mobile technology in their classrooms, with a focus on student-centered pedagogies listed above.

In order to demonstrate my current research path and application of that research, I have broken down my research, teaching, and service into three categories: (1) a focus on student-centered learning, (2) a focus on the use of mobile technology tools, and (3) other research, teaching, and service which

encompass my professional and educational training, with the end-goal of synthesizing these topics through my dissertation study.

### Goals for Research

My experience as a K-12 and undergraduate educator have led me to explore how student-centered methods of instruction can be used in the classroom, and the role technology has had in supporting these methods. Through this study, I have grown curious as to the role of emerging technologies, such as mobile devices, can be used in these settings. Going forward, I hope to explore how mobile devices (such as the Apple iPad and Google Nexus 7) can be used to support these student-centered methods of instruction. In particular, I am interested in the ways that these devices can be used to support collaboration and communication within these learning environments. Based on my prior experience and research, I would like to further focus on the communicative and collaborative aspects of mobile devices to support these student-centered methods.

In order to address this overarching goal, I need to achieve the following competencies:

- Have a strong research base on IST topics, trends, and history, particularly relating to student-centered learning and mobile technology
- Review and critique existing literature related to student-centered learning and mobile technology in these types of learning environments
- Synthesize literature to identify gaps
- Demonstrate knowledge of qualitative, quantitative, and mixed research methods and analysis
- Demonstrate the ability to lead, coordinate, and participate in research projects
- Identify and collect funding for research
- Participate in the research community by sharing research through conferences and publications

### Goals for Teaching

My teacher preparation at SUNY Potsdam, as well as my experiences in K-12 and undergraduate teaching, has focused on the importance of a student-centric view of education, with a focus towards social constructivism (Vygotsky, 1978). All students have the ability to learn, and all students have the right to learn, and to have a say in how they learn. This has led me to seek the various methods and tools to motivate and assist a diverse group of students across a wide range of content areas and age groups in meeting their educational goals. This does not mean that the focus is on the content of that particular grade level or age group, but also has a focus on practical skills that will be useful to the

student as they continue in their educational or vocational career, such as collaboration, communication, problem-solving, and analysis skills.

In order to teach both the content and the skills listed above, I have focused on researching, and then applying, various methods of student-centered learning, such as service-learning, problem-based learning, and project-based learning, each with varying degrees of success. The addition of technology into these methods has allowed my students and myself with opportunities to organize, collaborate, and interact with the content in a more meaningful way, and to experience the content in a way they may have not been able to without the technology. Furthermore, the addition of mobile technology allows the students to practice these skills not only in the classroom, but from anywhere they can. This combination has aided my students into becoming self-directed learners, in organizing their thoughts, and presenting the information they have explored in a more professional manner. This can be seen best through the use of student iPads at their field experience sites in W210, where students can share information with each other, or with students, record reflections, and share artifacts with the rest of the class.

Going forward, I would like to teach and explore courses that focus on the use of mobile technology in the classroom, and to incorporate the design and development of mobile applications that support student-centered environments. These courses can focus on pedagogical methods, technology adoption and integration, computer science and design.

In order to become a better teacher, I have set my goals as follows:

- Design, develop, and implement student-centered lessons and curricula (both mobile and non-mobile) in both undergraduate and graduate level courses, focusing on meaningful, authentic learning experiences.
- Mentor pre-service and in-service teachers in appropriate technology integration strategies and learner-centered teaching strategies
- Utilize student and peer feedback to improve my teaching.

### Goals for Service

It is my belief that service to the communities I am a member of is an important aspect of being a teacher and scholar. By engaging in service opportunities, I have the opportunity to serve as a model to my own students, to learn, develop, and network. Most importantly, it allows me an opportunity to give back to the various communities which have provided me with a variety of experiences. My experience and interest in teacher education and as a scholar provide me with an opportunity to volunteer in these

communities. This will benefit my own growth as an educator and scholar, as well as help support and further the interests of the communities at large.

While studying at Indiana University, I plan on serving at four distinct levels:

- Provide service to the Instructional Systems Technology Department, which has provided me with ample opportunities to learn and apply what I have learned to my classroom
- Provide service to the School of Education and Indiana University, which has provided me with ample opportunities to learn and apply what I have learned to my classroom
- Provide service to National and International Academic Organizations, which provide me with opportunities to grow as a scholar and teacher through research, publications, and presentations
- Provide service to Practicing Teachers and the Educational Community at large, which I consider to be an integral piece towards the stability and advancement of society.

Progress on Focus Areas

Progress on Research

- IST Topics, Trends, History, within student-centered learning and mobile technology.
  - Status: Complete
- Literature Critique and Review.
  - Status: Complete
- Synthesize Literature.
  - Status: Complete
- Qualitative, Quantitative, and Mixed Methods.
  - Status: In Progress
- Lead, Coordinate, and participate in research.
  - Status: In Progress
- Identify and collect Funding.
  - Status: In Progress
- Participate in research communities.
  - Status: In Progress

## Progress on Teaching

- Design, develop, and implement student-centered lessons and curricula.
  - Status: Complete
- Mentor pre-service and in-service teachers in technology integration and student-centered strategies.
  - Status: In Progress
- Utilize student and peer feedback to improve my teaching.
  - Status: In Progress

## Progress on Service

- Service to IST Dept.
  - Status: Complete
- Service to School of Education and Indiana University.
  - Status: In Progress
- Service to Academic Organizations.
  - Status: In Progress
- Service to Teachers and Educational Community.
  - Status: Complete

## Breadth and Integration

## Student-Centered Learning

I have explored three various student-centered pedagogies through research and teaching activities: service-learning, problem-based learning, and project-based learning. Through the exploration of these three pedagogical approaches, I have found that student-centered learning environments require appropriate levels of instructor support, typically through the use of scaffolding methods within the instruction. Scaffolding is the support provided to the student by the instructor/facilitator focusing on the needs of the student in order to assist the student with meeting their learning goal (Sawyer, 2006). Typically, the scaffolds I have used have focused on reflective activities, such as blogs with guiding questions, comments on these blogs, graphical organizers, and alternative examples that relate to the task at hand. These types of scaffolds help structure the learning process in student-centered learning environments, and aid the students in successfully meeting their learning goal (Hmelo-Silver et al., 2007).

My initial investigation of student-centered pedagogies focused on the use of service-learning in the area of social studies education. In service learning, experiential education provides authentic learning situations where students address human and community needs to promote student learning (Jacoby, 1993). For example, in my student teaching experience, I had students do participate in 5 hours of community service as part of their graduation requirements, which is consistent with many state and school requirements (RMC, 2007). Because of this experience, I conducted, an investigation into how I could implement and support this type of student-centered learning in my own classes by completing a capstone project for my Masters in the Science of Teaching at SUNY Potsdam that included a literature review of service learning.

As a follow-up to this theoretical understanding of service learning, I applied service-learning principles to several of the courses I have taught at Indiana University. For example, in 2012, I had students in the introductory technology integration course (EDUC W200) work with in-service teachers. During this experience, students were required to work with an in-service teacher to integrate technology into a lesson of that teachers choice through the case-analysis process. This constituted as service learning, as the students assisted the teachers with a real-world situation in order to benefit the in-service teacher and their classroom. Next, I had students in my EDUC W210 work with elementary and middle school students in the creation of radio journalism podcasts at the Project School in Bloomington ([link to evidence](#)). In this project, the pre-service teachers had the opportunity to support students who had limited experience with the technology being used (iPad), with a focus on the recording and editing aspects of the device. In particular, pre-service teachers helped developed a weekly plan with students to better able to stay on track throughout the course of the project. Furthermore, a portion of my 2013 – 2014 Associate Instructor contract includes supervising the CEL student-teaching course, W410, and providing feedback to these student-teachers on their teaching. In all, my pre-service teachers gained valuable classroom experience in which to practice the topics and skills they were learning, while assisting students and teachers in accomplishing their learning objectives.

The second type of student-centered pedagogical approach I have investigated has been problem-based learning. Problem-based learning is an approach to learning focused on investigation, explanation, and resolution of a meaningful problem (Barrows, 1980). In problem-based learning, students are provided with a “messy problem” – one which does not have a right or wrong answer, and which has multiple avenues to address the problem – and must research, investigate, and explore potential solutions to that problem, and to justify the solution they find, while the instructor moves to a facilitator and managerial role, to support the students in their research (Hmelo-Silver, 2004). Regarding research in problem-based learning environments, I conducted a pilot study with a colleague on how students reflect on their problem-based learning experiences in an undergraduate teacher education course ([LINK TO PILOT STUDY](#)). The pilot study examined a problem-based unit within W210: A survey of computer based education. During this unit, students were asked to explore three different approaches to lifelong learning, utilizing either problem-based, project-based, or inquiry-based methods, in order to address the question “How can we best prepare our students to be lifelong learners while still addressing state content standards?” We found that the reflective process was helpful for the students to guide their thinking and organize their thoughts in attempting to solve the problem they were

addressing. A follow up study is planned for the Fall 2013 semester Furthermore, during my teaching experience in W200: Computers in Education (2012), I assisted in the facilitation of a usability test of the Persistent Issues in History (PIHNet) tools. The PIHNet tools provided scaffolding tools in PBL lessons and units ([LINK to study](#)).

As the third student-centered pedagogical approach, I investigated project-based learning. Project-based learning differs from problem-based learning in that instead of solving a problem, students have learning structured around the completion of a project or task, during which, they learn content and skills. During my teaching experiences at the K-12 level, I assigned and managed project-based learning ranging from the creation of American History podcasts at the high school level, to the creation of history flipbooks at the middle school level. My undergraduate teaching experiences at Indiana University in W200 and W210 also provided me an opportunity to utilize this approach, through projects such as the Technology Analysis Project, Learning Analysis Video, and Case-Analysis project. Furthermore, a team of instructors in the Computer Educator Licensure (CEL) Program at Indiana University, of which I am part of, helped to create and re-vamp the e-Portfolio capstone project for CEL students, as a way for them to showcase their work throughout the four course sequence, and to reflect on their growth as a computer using educator.

In addition to the above projects, I have also had an opportunity to facilitate the second iteration of a virtual dialogue between the pre-service teachers in W200 and the Jacobs Educator teachers, who are award-winning teachers utilizing technology in their classroom. In this project, the pre-service teachers stated their concerns about teaching and technology in the classroom. These concerns were collected, categorized by a team of researchers, and given to the Jacobs Educators to address. These comments by the Jacobs teachers were recorded, uploaded to the internet, and viewed by the pre-service teachers, who stated new concerns. An analysis of these new concerns show that the students think more critically about their role as a teacher, and focused their thinking away from negative perspective ("My school will not have money for technology" into an action-focused perspective "Where will I be able to find money for grants?"). This research has been presented in a poster session at the Center for Innovative Teaching and Learning: Scholarship of Teaching and Learning , and will be presented at the 2013 AECT Conference. While this research may not fit specifically within one of the three frameworks listed above, it falls under the more general definition of student-centered learning.

In the future, I would like to research and apply new methods of supporting students who are learning in these types of environments. This includes exploring and developing new scaffolding methods and tools for use inside and outside of the classroom. I would also like to expand my research beyond the K-12 sector in regards to student-centered learning, and to explore how these methods are used in the wider world outside of the classroom.

Mobile Technology



As others have previously indicated, technology has the capacity to promote and support student-centered learning (Brush & Saye, 2000; Kozma, 2006; Stahl et. al, 2006; Brush & Saye, 2009; Cornelius-White et al., 2012). Within my own experiences, as well as those across the nation (Project Tomorrow , 2013), mobile technologies are becoming more prolifically included at the K-12 level. Many have advocated the potential for technology, such as mobile technology, to support student-centered learning (Chan et al., 2006; Fisher and Baird, 2007; Alyahya & Gall, 2012; Churchill et al. 2012). It stands to reason that as mobile technologies have the capacity to be “small, autonomous, and unobtrusive enough to accompany us in every moment of our every-day life, and that can be used for some form of learning,” students may be able to use these technologies on a daily basis to support student-centered learning (Roschelle, 2003).

During my student teaching experience, I was aware of the potential power mobile technologies could have on student learning. At the high school level, I worked with a teacher who had received a grant and purchased iPods for his students to check out and listen to podcasts during the bus rides home, and later in the semester, had those students create their own podcasts for the next year’s students. I have also had the opportunity to work with my undergraduate students at the university level in using mobile devices on multiple occasions, ranging from the creations of applications as a means of learning basic programming skills with MIT’s Android App Inventor in W210, to the use of mobile Learning Management Systems such as Blackboard and Canvas (W200, W210, W310).

In my initial research into the use of mobile technology in education, I explored the relationship between mLearning (mobile learning) and educational psychology models as a literature review in R711. This literature review led me to explore the research on mLearning deeper, resulting in the beginnings of a meta-analysis of of mobile learning topics in AECT between 2008 and 2012, which was presented at the annual IST conference at Indiana University.

Most recently, I have been leading an investigation into the implementation of a 1:1 iPad initiative that has been recognized at the state level as an innovative leader in iPad deployment and management. In this study, we found that there are many considerations which must be taken into account when implementing an initiative such as this, many of which need to be planned for in advance. Further, the importance of professional development, team communication, and administrative support became apparent. By studying the implementation and management of this iPad deployment, we can provide information to other school districts that are interested in deploying similar initiatives, and point out items that they may not have considered when in the planning stages of such an endeavor. We also plan to utilize already collected data to create a descriptive study on how these devices are used at the kindergarten level to support student-centered learning, focusing on literacy and math skills acquisition. Preliminary results according to the partner school suggest that the usage of the mobile devices and the methods being used have had a large impact on kindergarten student literacy scores on state assessments.

Because of this research area, I have begun working with several school corporations in the Fall of 2013 in the set-up, deployment, and implementation of 1:1 iPad initiatives in local schools. In these initiatives, my role is as a consultant, working with the specific schools and corporations in the overall support structure of the initiative (administrators, technicians, and professional development), as well as potentially taking an active role in professional development opportunities for teachers on how to use the devices, and strategies on using them in the classroom.

Reflecting on my teaching experiences as a K-12 educator, as an undergraduate educator, and as a student myself, I find that the use of mobile devices to support student-centered learning is becoming both more commonplace, and as the technology develops, more useful for both the teacher and the student. Having researched, experienced, and attempted to address the needs of students in student-centered learning environments, it is my hope that I can both continue the conversation about the use of mobile devices to support these types of environments, and to contribute to the classrooms by designing, developing new supporting tools for teachers and students to use.

## Conclusion

The landscape of education is changing. With many schools focusing on the usage of student-centered methods of instruction ranging from kindergarten through graduate school, it becomes imperative that the learners are supported adequately. Researchers are beginning to turn towards mobile devices for this support, based on the potential for collaboration and communication to help support these learners. It is my hope that I can join in on this conversation, and contribute to what I see as an important area of study, and to design and experiment with these supports.

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