

Dr. M. Elizabeth Azukas

Research Statement

Background/Need for Research

There have been frequent calls for educational reform in the United States based on a myriad of concerns. For example, in 2005 Achieve, Inc. published a study indicating that high school students were not adequately prepared for college and career, making college and career readiness a top educational priority (Achieve, 2005). In addition, the most recent National Assessment of Educational Progress (NAEP) report raised concerns when it documented student performance as largely stagnant between 2015 and 2017 (U.S. Department of Education, 2017). In addition, the tests showed continued, large, achievement gaps between the nation's white and non-white students as well as between economically disadvantaged children and affluent children, an indication that the nation's disadvantaged students are not improving academically despite federal laws and funds aimed at increasing their achievement (U.S. Department of Education, 2017). Another recent report, *Building a Grad Nation: Progress and Challenge in Raising High School Graduation Rates*, indicated that the number of schools with low graduation rates is increasing across the nation (Civic Enterprise & the Everyone Graduates Center, 2017).

To address this plethora of education concerns, several policy and reform recommendations have been made, yet change in schools is notoriously difficult. "The history of educational change is littered with borrowed or duplicated reform strategies that simply have made little or lasting difference to school or system performance" (Harris, 2011). Payne (2008) noted that there has been "so much reform but so little change." What are the current reform movements in education? Why do so many of these reforms fail? Why is change so difficult in schools? What innovations have been effective? What methods have been effective in promoting system change? These are the questions that form the core of my research agenda.

Previous Research

Personalized Learning

One of the most popular of these reforms has been "personalized learning" (PL). In 2012, the U.S. Department of Education offered a series of federal grants known as Race to the Top grants, to address deficits in college and career readiness and low performing students (U.S. Department of Education, 2012.) The first priority of these grants was the development of personalized learning environments. The federal government also made personalized learning a top research priority (U.S. Department of Education, 2010; 2016.). Most recently, policy-makers included more assessment flexibility in the federal Every Student Succeeds Act (ESSA) in 2015 hoping to prompt more personal learning innovation at the state level (Murphy, 2017). In fact, about 20 states have included elements of personalized learning in their Every Student Succeeds Act plans, but Chip Slaven, of the Alliance for Excellent Education, stated that states' ESSA plans have not met overall expectations for innovation in schools, particularly in the area of personalized learning (Murphy, 2017, par 7). This is largely because no clear and consistent definition for personalized learning exists nor has the federal government provided any additional guidance for designing policies, practices, and supports to promote personalized learning.

Even as personalized learning has received increased attention in K12 learning, the implementation of it has remained an uncertain and challenging space for most teachers to navigate. Given the lack of common understandings of personalized learning, it is not surprising that teachers are often unclear about what personal learning looks like in the classroom. Little research has been done on the preparation of teachers to implement personalized learning, although professional development has been identified as critical to

the implementation of personalization. There is a definite need to offer teachers professional development that helps them both clarify and construct their own understandings of personal learning, and to develop the knowledge and skills to apply it in their classrooms.

My dissertation: *A Personal Professional Learning Cohort: Cultivating a Community of Practice to Lead School District Change* focused on developing a common language for personal learning in the district in which I was the assistant superintendent as well as the best way to provide professional development for teachers to improve their self-efficacy for implementing personal learning. The study included several cycles of action research over a 3-year period.

The purpose of the final cycle of research was to examine the effectiveness of the community of practice model in providing professional development to improve K-12 teacher's knowledge, skills, self-efficacy with regard to the implementation of personal learning. The study also examined the extent to which the community created value for individuals and the organization. The study employed two theoretical frameworks: Bandura's theory of self-efficacy and Wenger's communities of practice.

The study employed a concurrent mixed methods approach. Eighteen teachers participated in a 9-month blended learning professional development focused on the implementation of personal learning. Participants took pre and post self-efficacy tests. In addition, qualitative data was collected from feedback surveys, online postings, a research journal, and individual interviews.

The teachers demonstrated greater levels of self-efficacy with regard to the implementation of personal learning after their participation in the professional development community. Teachers reported increased confidence with regard to personal learning in the areas of planning, risk-taking, implementation, making modifications for continuous improvement, and sharing their knowledge with others. The teachers also reported learning about themselves, their students and colleagues, as well as gaining knowledge of content related to teaching, and personal learning. Participants reported the development of a variety of skills including design and problem-solving skills, technology skills, and facilitation and PL strategies. They also reported changes in certain dispositions such as flexibility and open-mindedness. The community created value for both the individuals and the organization.

Conclusions reflect on how participation in the community led to changes in instructional practices of teachers both in and outside of the cohort, creating value for both the individuals and the organization. The implications of this work suggest that it is important to consider the potential of blended professional development opportunities such as this one, for bringing meaningful applications of personalized learning into K12 schooling more broadly.

A portion of my study was published in a special edition of the Journal of Online Learning Research entitled *Cultivating blended communities of practice to promote personalized learning*.

Education Week recently published a study indicating that principals and teachers are not aligned in their beliefs about personalized learning (Bushweller, 2019). I conducted two studies that provide additional context to these findings.

First, I conducted focus groups with teachers in the same school district tasked with implementing personalized learning. These teachers participated in a year-long professional development focused on personalized learning. The purpose of the study was to determine how the teachers defined personalized learning, what they see as the possibility for personalized learning, and what they view as the chief barriers to implementing personalized learning. This study was presented at AERA in 2018 and was updated for publication and is currently in review.

Secondly, I implemented a study designed to explore principals' conceptualizations of personalized learning. For this study, I conducted individual interviews with principals in one school district tasked with implementing personalized learning. These interviews provide a deep look into how principals define personalized learning, what they see as the possibility for personalized learning, and what they view as the chief barriers to implementing personalized learning. This study was accepted for proposal at AERA 2019, but the conference was cancelled and the paper was published in the online conference proceedings. I am currently working to update and expand upon this paper for publication.

Online and Blended Learning

Online and blended learning has also been touted as educational reform and some of my research is focused on preparing teachers and leaders to work in online and blended learning environments as well as online and blended learning as educational reforms and mechanisms for school change.

The number of students taking online courses in the U.S. has increased exponentially since the inception of virtual schools in 1996, yet the focus on teaching in an online environment is a relatively new concept for most teacher education programs (Ferdig, Cavanaugh, DiPietro, Black, & Dawson, 2009). For almost a decade now, all states and the District of Columbia provide some form of online learning opportunity for their students (Watson, Murin, Vashaw, Gemin, & Rapp, 2011), and five states even require students to complete some form of online experience in order to graduation. The most recent data suggest that at least 2.2 million supplemental students were enrolled in approximately 4.5 million online courses (Gemin, Pape, Vashaw, & Watson, 2015), while an additional 300,000 students were enrolled in one of approximately 500 full-time cyber schools (Molnar, Miron, Elgeben, Barbour, Huerta, Shafert, & Rice, 2019). With the continued growth of K-12 online learning, teachers must be prepared to teach both in traditional face-to-face environments and in online environments, yet there are a myriad of challenges faced by teacher preparation institutions (Archambault & Larson, 2015).

I participated in a collaborative research project designed to examine K-12 online learning curricular materials in a graduate course at a mid-western university. The study examined the challenges and current status of teacher education in addressing the need for teachers trained to design, deliver, and support K-12 online learning. This action research project explored student reactions to an online course about online learning. The learner generated course data generated four themes: the benefits and challenges of K-12 online learning, success factors need for K-12 online learning, growing acceptance of K-12 online learning, and student self-efficacy for teaching online. Recommendations to improve the course based on the data, and these themes, included updating the state-focused course readings, adding case studies related to overcoming student anxiety and issues often found in urban settings, and the creation/inclusion of some tool or instrument to measure learner readiness to teach online. This study has been completed and the paper has been submitted for publication. It is currently in review.

Personalized, Blended Learning Environments and Soft Systems Thinking

Raising academic achievement, increasing student engagement, and promoting equity have long been education reform goals, but have resulted in minimal change. This study examined the application of Soft Systems Methodology (SSM) to an attempt to disrupt "business as usual" in a large urban district through the implementation of personalized learning environments. This study contributes to literature related to systems thinking as a mechanism for leading change in large, complex learning organizations. This study was accepted as a peer-reviewed book chapter and is currently in process.

Remote Learning

The COVID-19 pandemic forced schools across the country to close last spring and teachers were asked to quickly shift to remote instruction. I conducted a study in which I surveyed 298 teachers about their experiences with remote learning. The majority of teachers found the experience of remote learning to be positive overall. They experienced successes including enhanced connection with students, increased student engagement and participation, and benefits associated with the use of technology. Teachers also experienced challenges, some of which were in direct conflict with some of the reported successes or benefits, and included the amount of time required for preparation, technology challenges, a lack of connection with students, a lack of engagement and participation, less physicality, academic integrity issues and personal and family issues. Teachers provided recommendations for how districts could best support them with remote learning. This study was just published in the *Journal of Applied Professional Studies*.

Design Thinking

The application of design thinking has also been proposed as a method of educational reform (Luka, 2014). I was asked by an Indian SGO to design and deliver professional development to teachers in India focused on design thinking. The goal of school leaders was to improve student engagement by implementing a more student-centered approach to learning. I designed a study that employed designed based research to explore formative design as both a methodology for PD and as the focus of the PD content. Five 7-hour PD sessions were offered to 220 teachers across 5 schools in India. Results indicated that formative design was useful for planning, implementing and iterating PD that was meaningful for participants and that teachers were open to aspects of the design process, but struggled with making changes to their pedagogy. This study was published in the *Journal of Formative Design*.

I also conducted a mini-ethnographic case study (Fusch, Fusch, & Ness, 2017; Yin, 2018) to understand how teachers implemented professional learning on design thinking in their classrooms, what kinds of successes and challenges they faced, and how their experiences might inform future design thinking pedagogy innovations. Results indicated that the teachers experienced both successes and challenges. Challenges included a lack of tolerance for ambiguity, the fear of letting go of some of the control in the classroom, how to effectively grade and facilitate design projects, the time and preparation required to implement design projects, and struggles to align design projects to curriculum and standards. Successes includes increased student engagement, the development of 21st century skills, and an increased tolerance for ambiguity and failure among students and teachers. This study was submitted and accepted as a peer-reviewed book chapter and is currently in progress.

Current Research

Virtual Leadership

Research has indicated that very few educational leadership programs provide any administrator preparation for leading in virtual learning environments (LaFrance & Beck, 2014), yet opportunities for K-12 students to participate in online learning experiences continues to expand (Christensen, Horn, & Johnson, 2008; Clark, 2001; Peak Group, 2002; Queen & Lewis, 2011; Vander Ark & Wise, 2011; Watson, Murin, Vashaw, Gemin, & Rapp, 2010). As online opportunities continue to grow in virtual schools, concerns have been raised about poor performance on accountability measures in comparison to brick and mortar schools (Molnar, Rice, Huearta, Schafer, Barbour, Miron, Gulosino, Horvitz, 2014). Research has established a link between effective leadership and student achievement, particularly for low income and black students (Andrews & Sudder, 1987; Leithwood & Jantzi, 2008; Waters & Marzano,

2007). Effective leadership is particularly critical for online education (Abrego & Pankake, 2010; Quilici & Joki, 2011-12). To improve virtual leadership, we must have an understanding of the competencies needed for leading virtual schools and how they differ from traditional brick-and-mortar leadership skills so that we can adequately prepare and support virtual school leaders. Richardson, La France, & Beck's (2015) initial research found that, while virtual school leaders face many of the same categorical challenges as leaders in brick and mortar schools, the nuances of these challenges were distinct and they recommended additional research into the specific competencies required for virtual leadership as well as additional pre-service training for leaders.

I conducted research to develop an understanding of the competencies required for virtual school leadership and the extent to which the revised Professional Standards for Educational Leaders (P-SEL) adequately represent these required competencies. I interviewed school leaders from full-time virtual schools across the country to develop an understanding of the competencies required for virtual school leadership and whether the P-SEL standards sufficiently address them. The virtual leaders interviewed conveyed that the P-SEL Standards were categorically aligned to their work. Most asserted that they did much of the same work as a brick and mortar leader, but that there were distinctive differences in the ways in which virtual school leaders engaged their work across various leadership domains. Differences included communication strategies and developing community remotely, supervising teachers and staff virtually, needing to be familiar with a variety of funding models, as well as needing skills in marketing and product development. I submitted the preliminary results of the study as a proposal for the AERA annual conference in 2020. I am currently working to write up a more in-depth study of the results for publication. This research will contribute significantly to the scholarship in the field and is particularly important right now because we see that the pandemic has required all school leaders to have some skills in virtual leadership. I am also using the results of this study to develop an ESU certificate program in virtual leadership.

The U.S. Department of Education has identified a growing teacher shortage due to an increase in retirements and a decrease in the number of candidates seeking teacher certifications (Finnerty, 2018). Additionally, teacher turnover is a struggle across the nation with 10% of teachers quitting after the first year of teaching and 40-50% of teachers leaving the profession within the first five years. (Ingersoll, Merrill, Stuckey, & Collins, 2018). Teachers are leaving the field at an unsustainable rate. New teachers may feel stress, lack appropriate support, and may feel unprepared to handle behavioral and academic issues among students (Dias-Lacy and Guirguis). Greiner (2009) found that the problems that lead to teachers leaving the field are related to a lack of self-efficacy and challenges with classroom management. It is imperative that teacher education programs adequately prepare pre-service teachers to develop instructional strategies to guide and direct student behavior. (Darling-Hammond, 2008).

The COVID-19 pandemic has complicated teacher preparation, particularly with regard to field experiences as many schools were forced to close and have not re-opened. Schools that have re-opened are reticent to accept student teachers into their buildings due to the increased risk of exposure to COVID-19. To address these challenges, East Stroudsburg University has adopted a virtual classroom simulation known as simSchool for the Seminar in Seminar in Secondary Education II course, which requires 40 hours of field experience. In the simulation, the student takes on the role of teacher and interacts with virtual, artificially intelligent, students. Students are programmed to have a variety of psychological, physiological, and cognitive preferences to simulate the student diversity that is found in a real classroom setting (Gibson, 2011). The choices made by the teacher affect the students' academic and behavioral responses. Teachers must then

interpret the students' signs of performance and behavior and then make decisions about how to modify instruction to help students succeed on assigned instructional tasks.

Simulation experiences have been used in a variety of career areas including the training of airline pilots and medical professionals. Research indicates that simulations can provide a variety of benefits in the field of education. Advantages of simulations include the ability to practice classroom decision-making, practice through repetition, receiving feedback and the ability to make adjustments, increased self-efficacy of skills, and increased peer collaboration and social interaction (Badiee and Kaufmann (2014). Simulations can provide learning characteristics such as repeatability, automated analysis, and reflective examination, to promote the transfer of skills to the real classroom (Mayrath, Clarke-Midura, & Robinson, 2012). Computer simulations can provide skill-building lessons for pre-services teachers (Sawchuk, 2011) who can then use the knowledge that they have gained in their virtual coursework in real experience (Office of Postsecondary Education, 2005). Simulations allow pre-service teachers to see their students from different perspectives, gain insight into the best ways to manage their classrooms, and understand the direct consequences of their actions in the classroom (Bradley & Kendall, 2014-2015).

Research on simSchool, in particular, has found benefits in teacher preparation. SimSchool encourages rapid, step-wise refinement of pedagogical expertise (Merrit, Gibson, Christensen, & Knezek, 2103). McPherson, Tyler-Wood, McEnturff and Peak (2011) found that pre-service teachers who used simSchool scored higher on self-reported measures of teacher preparation. Additionally, Bush and Hall (2013) found that simSchool provided a flexible, cost beneficial, and safe learning environment for pre-service teachers that encouraged a participatory system and increased student-teacher interactions. Peak, McPherson, Barrio, Knezek, Ellison, and Christensen (2009) found that special education teachers who participated in simSchool felt better prepared to enter the teaching field. Hopper, Knezek, and Christensen (2013) found that pre-service teachers' self-appraisal of teaching experience improved while their confidence in their teaching abilities became more in line with their experience. Hopper (2018) found that experiential interactions between the teacher and virtual students provided constructivist learning activities that assisted pre-service teachers in the discovery of new teaching strategies and the development of teaching know-how.

I am conducting a study on the use of the game-based classroom simulation, simSchool with pre-service teachers in the Seminar in Secondary Education II course. I will be studying the impact of simSchool participation on teachers' locus of control and self-efficacy.

References

- Abrego, J., and A. Pankake. 2010. PK–12 virtual schools: The challenges and roles of school leaders. *Educational Considerations* 37 (2), 7–13.
- Achieve, Inc. (2005). *Rising to the challenge: Are high school graduates prepared for college and work? A study of high school graduates, college instructors and employers*. Washington, DC: Achieve, Inc.
- Andrews, R. & Soder, R. (1987). Principal leadership and student achievement. *Educational Leadership* 44(6), 9-11.
- Archambault, L., & Larson, J. (2015). Pioneering the digital age of instruction: Learning from and about K-12 online teachers. *Journal of Online Learning Research*, 1(1),49-83. Retrieved from <http://www.editlib.org/p/149852/>
- Azukas, M.E. (In Progress) Applying soft systems methodology to a personalized learning initiative in a large urban school district. In (eds.) Aaron Bond, Beth Rajan Sockman, Samantha J. Blevins, & Suha Tamim, *Using Systems Thinking to Foster Continuous Improvement and Manage Change Efforts: Case Studies for the Everyday Practitioner*, Oxford: U.K.: Routledge.
- Azukas, M.E. (In Progress) One district delves into design thinking: Challenges, successes, and implications for future practice. In Sanzo, K.L. & Scribner, J.P. Eds. *Design Thinking: Research, Innovation, and Implementation*. Charlotte, N.C. Information Age Publishing.
- Azukas, M.E. (In Review) Personalized learning: A community perspective. *Education Studies*.
- Azukas, M.E. and Barbour, M.K. (In Review). In-service teachers' perceptions of K-12 online learning in a graduate course: An action research project. *International Journal of Online Pedagogy and Course Design*
- Azukas, M.E. (2020). Teaching in the time of COVID. *Journal of Applied Professional Studies*, 2, 1-11.
- Azukas, M.E. & Gaudelli, W. (2020). Formative design as a framework for implementing teacher professional development in design thinking. *Journal of Formative Design in Learning*, 4(1), 22-33. <https://doi.org/10.1007/s41686-020-00042-6>
- Azukas, M.E. and Barbour, M.K. (In Review). In-service teachers' perceptions of K-12 online learning in a graduate course: An action research project. *International Journal of Online Pedagogy and Course Design*.
- Azukas, M.E. (2019). Cultivating blended communities of practice to promote personalized learning. *Journal of Online Learning Research*, 5(3), 249-283.
- Bushweller, K. (2019) Principals and teachers are out of sync on personalized learning, data show. *Education Week* 39(12), 6-7. Retrieved from <https://www.edweek.org/ew/articles/2019/11/06/principals-and-teachers-are-out-of-sync.html>
- Christensen, C., Johnson, J., & Horn, M. (2008). *Disrupting class: How disruptive innovation will change the way the world learns*. New York, NY: McGrawHill.

- Civic Enterprise & the Everyone Graduates Center. (2018). *2018 Building a grad nation: Progress and challenge in raising high school graduation rates*. Baltimore, MD: Johns Hopkins University. Retrieved from <http://gradnation.americaspromise.org/report/2017-building-grad-nation-report>
- Clark, T. (2001). *Virtual schools: Trends and issues*. Phoenix, AZ: West Ed/Distance Learning Resource Network. Retrieved from http://www.wested.org/online_pubs/virtualschools.pdf
- Ferdig, R. E., Cavanaugh, C., DiPietro, M., Black, E. W., & Dawson, K. (2009). Virtual schooling standards and best practices for teacher education. *Journal of Technology and Teacher Education*, 17(4), 479-503.
- Fusch, P. I., Fusch, G. E., & Ness, L. R. (2017). How to conduct a mini-ethnographic case study: A guide for novice researchers. *The Qualitative Report*, 22(3), 923-941. Retrieved from <http://nsuworks.nova.edu/tqr/vol22/iss3/16>
- Gemin, B., Pape L., Vashaw, L., & Watson, J. (2015). *Keeping pace with K–12 digital learning: An annual review of policy and practice*. Durango, CO: Evergreen Education Group. Retrieved from <https://static1.squarespace.com/static/59381b9a17bffc68bf625df4/t/5949b64bb11be1ad7855fb51/1498003034517/KeepingPace+2015.pdf>
- Harris, A. (2011). System improvement through collective capacity building. *Journal of Educational Administration*, 49(6), 624-636.
- La France, J. & Beck, J. (2014). *Mapping the terrain: Educational field experiences in K-12 virtual schools*. *Educational Administration Quarterly* 50(1), 160-189.
- Luka, I. (2014). Design thinking in pedagogy. *Journal of Education Culture and Society*, (2), 63-74.
- Molnar, A., Miron, G., Elgeberi, N., Barbour, M. K., Huerta, L., Shafer, S. R., & Rice, J. K. (2019). *Virtual schools in the U.S. 2019*. Boulder, CO: National Education Policy Center. Retrieved from <http://nepc.colorado.edu/publication/virtual-schools-annual-2019>
- Molnar, A. (Ed.); Rice, J.K., Huerta, L., Shafer, S. R., Barbour, M.K., Miron, G., Gulosino, C, Horvitz, B. (2014) *Virtual Schools in the U.S. 2014: Politics, performance, Policy, and research evidence*. Boulder, CO: National Education Policy Center. Retrieved [March 20, 2019] from <http://nepc.colorado.edu/publication/virtual-schools-annual-2014>.
- Murphy, Meghan E. (2017, December 7). Why haven't new federal rules unleashed more innovation in schools? Boosters of personal learning hoped for transformation under new ESSA law. *The Hechinger Report*. New York, NY: Teachers College Columbia University. Retrieved from <http://hechingerreport.org/havent-new-federal-rules-unleashed-innovation-schools/>
- Payne, C. (2008). *So much reform, so little change: The persistence of failure in urban schools*. Cambridge, MA: Harvard Education Press.
- Peak Group. (2002). *Virtual schools across America*. Los Altos, CA: Author.
- Queen, B., & Lewis, L. (2011). Distance education courses for public elementary and secondary school students: 2009–10 (*No. NCES 2012-008*). Washington, DC: National Center for Education Statistics.

- Quilici, S.B.; Joki, R. (2011-12). Investigating roles of online principals. *Journal of Research on Technology in Education*, 44 (2), 141-160.
- Richardson, J.W. LaFrance, J. & Beck, D. (2015) Challenges of virtual school leadership. *American Journal of Distance Education*, 29(1), 18-29, DOI: [10.1080/08923647.2015.992647](https://doi.org/10.1080/08923647.2015.992647)
- U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP). (2017) *2017 NAEP Mathematics and Reading Assessments*. Alexandria, VA. U.S. Department of Education. Retrieved from: https://www.nationsreportcard.gov/reading_math_2017_highlights/
- U.S. Department of Education. (2010). *National education technology plan*. Washington, D.C.: U.S. Department of Education. Retrieved from <http://tech.ed.gov/wp-content/uploads/2013/10/netp2010.pdf>
- U.S. Department of Education. (2016). *National education technology plan*. Washington, D.C.: U.S. Department of Education. Retrieved from <https://tech.ed.gov/netp/>
- U.S. Department of Education. (2012.). *Race to the top: District competition*. Retrieved from <http://www.ed.gov/race-top/district-competition/absolute-priorities>
- Vander Ark, T., & Wise, B. (2011). *Getting smart: How digital learning is changing the world*. San Francisco: Jossey-Bass.
- Waters, J.T. & Marzano, R.J. (2007). School district leadership that works: The effect of superintendent leadership on student achievement. *Educational Research Service* 25(2), 1-12.
- Watson, J., Murrin, A., Vashaw, L., Gemin, B., & Rapp C. (2011). *Keeping pace with K–12 online learning: An annual review of policy and practice*. Durango, CO: Evergreen Education Group. Retrieved from <https://static1.squarespace.com/static/59381b9a17bffc68bf625df4/t/5cc1ef35e79c709858c879e8/1556213572357/KeepingPace2011.pdf>