

Micro-credentialing: A transformative tool for
educator re-licensure and educator efficacy

by

Paul William Erickson

B.S., Fort Hays State University, 2004
M.A., Emporia State University, 2009

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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Department of Educational Leadership
College of Education

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Manhattan, Kansas

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Abstract

Professional learning is and always has been a core expectation for educators. Professional learning comes in the conventional form of workshops, conferences, presentations and graduate degree programs. Professional learning also comes in the nonconventional form of social media, Personal Learning Networks (PLN's), peer observations, and professional units of study known as micro-credentials. These pathways to professional learning are considered more personalized to the individual educator's needs, interests, and strengths. This mixed-methods study is rooted in practitioner inquiry framework (Cochran-Smith & Lytle, 2009). The purpose of the study is to explore professional learning in the form of micro-credentials and its relationship with educator self-efficacy and educator collective efficacy. Participants will engage in a micro-credentialing study in which they complete multiple micro-credentials in an effort to meet their professional learning needs and earn re-licensure via Kansas State Department of Education/Teacher Licensure and Accreditation. Throughout the study, participants will complete surveys and engage in focus group interviews that assess their levels of self-efficacy and collective efficacy.

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Approved by:

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Dedication

This dissertation is dedicated, first and foremost, to my exceptional family for their unyielding support, encouragement, and love. To my mom and dad, who have done whatever it takes to help me realize my dreams, personally and professionally. Making them proud continues to be a priority each and every day. To Tasha, you are my best friend and biggest cheerleader. Thank you for your unending love, patience, and understanding. I have needed you every step of this journey. To Stelli and Cora, thank you for you giving me purpose—being your father is the greatest gift I have ever received. I love you more than anything else!

Chapter 1: Introduction, Significance, and Rationale

Introduction

Professional learning is and always has been a core expectation for educators. Educators, whether self-directed or required by schools, school districts, and state departments, participate in professional learning throughout their careers. State departments and school districts have invested substantially in professional learning for educators (Jacob, 2015). This professional learning has and continues to come in the conventional forms of workshops, conferences, in-service days, and graduate degree programs. Individual educators have also invested substantially in their own professional learning, on their own time, specific to their own interests and passions (Cator, Schneider, & Vander Ark, 2014). This professional learning often comes in the nonconventional forms of social media, Professional Learning Networks, peer observations, and professional units of study known as micro-credentials (Ady, Kinsella, & Paynter, 2015). These forms of learning is considered more personalized (Cator, Schneider, & Vander Ark, 2014) to the individual teacher's needs and interests. In this study, personalized professional learning will be explored in the form of micro-credentials. Because of the nascent existence of micro-credentials, a definition of micro-credentialing as well as rationale for it as a professional learning tool will be generated. A rationale for micro-credentials as a model for educator licensure renewal will also be presented. This justification will be based on the implementation of a pilot study where participants engage in micro-credentialing as means to licensure renewal. Lastly, through a qualitative inquiry with the pilot participants, micro-credentialing and its relationship with self-efficacy and teacher collective efficacy will be explored.

Problem Statement and Rationale

Exploring micro-credentialing as both an alternative pathway to educator re-licensure and a means to enhancing educators' sense of efficacy is important for a multitude of reasons. A few reasons central to this study include educators' overall dissatisfaction with formal professional learning (Grunwald Associates & Digital Promise, 2015), the need to connect professional learning with re-licensure, and the abundance of evidence that supports efficacy as an impactful factor on student learning (Hattie, 2016).

Dissatisfaction with Formal Professional Learning

Educators engage in a vast amount of both formal and informal professional learning. Ninety-nine percent of educators participate in formal professional development (Grunwald Associates & Digital Promise, 2015). Eight-four percent of educators participate in formal professional learning via in-service days, and more than 50% via workshops. (Grunwald Associates & Digital Promise, 2015). Seventy-two percent of teachers participate in non-required professional development (Grunwald Associates & Digital Promise, 2015). While participation in formal professional learning is vast, satisfaction in it is minimal. For example, “while 84% of teachers report participating in in-service days only 20 percent are satisfied with them” (Grunwald Associates & Digital Promise, 2015, p. 7). Darling Hammond, Wei, and Richardson (2009) report that educator fewer than half of educators report receiving professional development in areas that are of moderate to high interest to them, leaving them, overall, with professional learning experiences that are of little or no interest to them.

Rationales for this dissatisfaction vary from educators reporting that the trajectory of their professional learning is dictated by others, thus feeling that they have little autonomy over what training they attend or receive (Boston Consulting Group, 2014). Educators have also revealed that they have limited support for efforts to engage in effective instructional shifts post-professional development, nor sufficient time to learn from one another when training is formalized (Center for Public Education and National School Boards Association, 2013). Micro-credentialing, within a supportive infrastructure, could be that alternative model for satisfactory professional learning.

Connecting Professional Learning with Re-licensure

The policy landscape is primed for a new brand of professional learning and several states and school districts are already blazing trails for micro-credentialing. Micro-credentials, via the Maine Learning Technology Initiative, help teachers develop competencies in the 12 buckets of curriculum for teaching and learning with technology (Muir, 2017). In very large school districts like Chapel Hill-Carrboro City, micro-credentialing has been the vehicle through which professional learning has been guided, balancing learning of topics related to district goals with the personalized learning interests of staff (Holmes, 2016). A district in Wisconsin has gone all-in with micro-credentials as their singular means of providing professional learning and even

compensates teachers via the salary schedule with achievement of each micro-credential (Center for Teaching Quality & Digital Promise, 2016).

In a nascent analysis of the existing body of work, there is very little evidence of endorsement of micro-credentialing as a pathway to re-licensure at the state level. Yes, it is recognized as a more personalized, teacher-centered form of professional learning. However, the next step, making it a recognized pathway to re-licensure, is absent from the evidence that could be located at the time of this dissertation. Districts are partnering with businesses and consortiums to provide professional learning via micro-credentialing, however, these same partnerships appear to not exist at the state level according to information gathered for this dissertation (Muir, 2017; Priest, 2015; Lanza & Snell, 2018; Deklotz, 2017). The study is necessary because Kansas could establish itself as a flagship state as it relates to micro-credentialing policy. Via a partnership with the Kansas Department of Teacher Licensure and Accreditation and, in particular, the Professional Standards Board, micro-credentialing can be asserted as an alternative route to re-licensure for Kansas educators (Professional Standards Board, 2017, Professional Standards Board, 2018).

The Kansas State Department of Education is trying to rebrand our educational system with the Kansans Can vision of “leading the world in the success of each student” (Kansas State Department of Education, 2015). In the opinion of the central researcher, this starts with teachers, leading the world in success of each educator. At the core of the Kansans Can vision is the challenge for Kansas educators, administrators, policy-makers and citizens, in general, to rethink how our schools operate, analyzing every requirement to determine if it is a support or impediment to our schools’ ability to address the needs of each student (Kansans Can: Talking Points, 2017). The same challenge should be made for Kansas educators. Every requirement (for example, educator re-licensure) should be analyzed to determine if it is a support or impediment to our schools’ ability to address the professional learning needs of each educator. KSDE states that “to achieve this bold vision for Kansas education, schools need to be reorganized around the student, not the systems” (Kansans Can: Talking Points, 2017). A significant purpose of this study is to explore the re-organization of educator re-licensure around individual educators, their professional learning interests and needs. This re-organization could be accomplished through the establishment of a personalized learning pathway like micro-credentialing that leads to re-licensure.

Again, how can Kansas lead the world in the success of each student? Kansas can lead the world in success of each student by first leading the world in the success of each educator. How can Kansas lead the world in the success of each educator? Kansas can do so via a new brand of teacher-led learning and re-licensure—micro-credentials.

Micro-credentialing and other forms of personalized professional learning also closely align with the Kansas State Board Outcome of Individual Plans of Study. Individual Plans of Study are:

- Cooperatively developed between the student, the student’s school and family members
- Based on the student’s interests and talents
- Reviewed and updated at least twice per year (Kansans Can: Talking Points, 2017)

An Individual Plan of Study can help Kansas students obtain a suitable vision of their path toward college and career readiness, allowing students to explore different forms of post-secondary education and select courses based upon their career interests (Kansans Can: Talking Points, 2017).

Micro-credentials are cooperatively developed or selected with teams of teachers and administrators, based on teachers’ interests and talents and evaluated, tracked, and recognized, at minimum, on a yearly basis. Micro-credentials could also help Kansas teachers obtain a suitable vision for their journey as professionally hungry educators, explore different topics and forms of personalized learning, and ultimately select or create units of study based on their interests.

Micro-credentials are essentially Individual Plans of Study for teachers. When asked about this connection between micro-credentialing and Individual Plans of Study, Brad Neuenswander, Deputy Commissioner of the Kansas State Department of Education, conveyed a similar connection.

When a student’s learning is led through an Individual Plan of Study, the student is learning new concepts and experimenting in new areas, and his/her program of study is customized around his/her unique career interests. Creativity, planning, goal-setting, self-regulation, perseverance are all by-products of the IPS process for the student. This is exactly what teachers are doing when they engage in micro-credentials. Sure, they are already certified

teachers, but now it is time to specialize their skills and professional learning to fit the needs of the their students and their communities. That can be accomplished through a unique form of learning like micro-credentialing. (Neuenschwander, personal communication, December 2nd, 2018)

Neuenschwander also saw connections between micro-credentialing and the preparation of Kansas educators to learn how to best leverage KSDE Board Outcomes like Individual Plans of Study. Neuenschwander wondered if “a micro-credential on Individual Plans of Study could be the ideal way to successfully implement Individual Plans of Study” with students. Neuenschwander emphasized that Individual Plans of Study is the most frequently referenced KSDE Board Outcome by both educators and patrons when asked which outcome is most important to realizing the vision of “leading the world in the success of each student.

If Individual Plans of Study are that significant to the success of each student, then it is worthwhile to explore micro-credentials as Individual Plans of Study for teachers.

Exploration of Micro-Credentialing and Educator Self-Efficacy and Educator Collective Efficacy

Furthermore and most pertinent to this particular study is whether educators will perceive significant intrinsic value in professional learning via micro-credentials, as well as heightened levels of self-efficacy and collective efficacy. Efficacy beliefs are important because they are paramount in guiding educators’ decisions and actions. Goddard, Hoy, and Woolfolk (2004) assert that efficacy “directly affects the diligence and resolve with which groups chose to pursue goals” (p.8). If an educator (self-efficacy) or better yet a team of educators (collective-efficacy) filter their realities through the belief that what they learn can and does impact student achievement, it is very likely that these beliefs will manifest in their instructional decisions and practice.

There are already exists a body of work that supports the claim that efficacy significantly impacts student learning (Hattie, 2016). Collective efficacy, with an effect size of 1.57, is ranked as one of the highest factors influencing student achievement (Hattie, 2016). For a comparison, student-teacher relationships have an effect size of .72 (Hattie, 2012). Hattie’s work is abundantly clear: Efficacy matters and any professional learning that leads to it should be maximized.

Exploring micro-credentialing and efficacy and establishing a connection between the two could be instrumental in the establishment of it as a transformative model for professional learning and re-licensure.

Research Purpose and Questions

As qualitative research, the purpose of this study is to assess educators' sense of self-efficacy and collective efficacy while they engage in micro-credentialing as a personalized professional learning experience. Educators' sense of self-efficacy and collective efficacy was assessed through a digital survey of Likert-type items as well as interviews with both individual participants and teams of participants. Educators participated in surveys and interviews after they have completed the necessary requirements of a study that result in re-licensure for participants. The sample size included six participants in the focus group interviews and ____ participants who completed the Likert-type surveys. The make-up of participants ranged from elementary to secondary educators from public schools in Kansas. A homogenous factor among participants was that they are seeking re-licensure in Kansas as educators. The time during which this study was facilitated was over the course of January 2018-December 2018. This allowed participants to field-test their learning with actual students and allowed them time to submit their learning to a peer group in the form of student achievement data, self-reflection, and student feedback. Primary questions driving this study included the following:

What examples of self-efficacy do educators evince after completing micro-credentials as a part of a re-licensure pathway?

What examples of collective-efficacy do educators evince after completing micro-credentials as part of a re-licensure pathway?

Operationalization of Constructs

Self-Efficacy-One's confidence in one's competence--Themes consistent with self-efficacy were be evaluated in both the Likert-type survey items (See Tables 1.1, 1.2) and the interviews (See Questions in Appendix A). Themes included but were not limited to an educator's perception of confidence to successfully apply a particular competency, an educator's

perception of himself/herself as an expert with a particular competency, an educator's belief in his/her ability to teach students effectively, an educator's belief in his/her ability to teach his/her peers a particular competency, an educator's sense of empowerment, or an educator's belief that his/her profession is respected by stakeholders outside of his/her peers. Themes were derived from the work of Hattie (2012, 2016) Goddard, Hoy, and Woolfolk (2004), Muthuvelayutham and Mohanasundaram (2012) and Stephanou, Gkavras, and Doulkeridou (2013).

Collective Efficacy—Teammates' confidence in the team's competence--Themes consistent with collective efficacy were evaluated in both the Likert-type survey items (See Tables 1.1., 1.2) and the interviews (See Questions in Appendix A). Themes included but were not limited to educators' shared belief that through their collective action, they can positively influence student achievement, educators' willingness to learn a new idea/skill with their team, educators' belief that they can teach other teams of educators a particular competency, a team's sense of empowerment, or a team's belief that their profession is respected by stakeholders outside of their peers. Themes were derived from the work of Hattie (2012, 2015) Goddard, Hoy, and Woolfolk (2004), Bandura (1994) and Stephanou, Gkavras, and Doulkeridou (2013).

Theoretical Framework

This exploration of micro-credentialing as a transformative re-licensure pathway and its relationship to efficacy is informed and guided by constructionist epistemologies.

Constructionism applies to this work, as the researcher is seeking to make meaning for micro-credentialing as a professional learning pathway, as an alternative route for teacher re-licensure, and as a factor as it relates to educators' sense of self-efficacy and collective efficacy. The theoretical framework mostly closely aligned with this exploration is symbolic interactionism.

Symbolic interactionism explains how people's interactions with tangible and intangible symbols create meaning in people's lived experiences (Bhattacharya, 2017; Blumer 1969; Carter & Fuller, 2016). Symbolic interactionism helps build an understanding as to how people see themselves, how they see others, and how others see them (Carter & Fuller, 2015). This influences the researcher to think about micro-credentialing and its interaction with educator's sense of self-efficacy and collective efficacy. How is the achievement of micro-credentials related to how educators perceive themselves, their teammates, and how others perceive them?

Using Symbolic interactionism as a guiding theoretical framework allowed for comparison of a symbol (micro-credentials) with an experience (personalized professional learning) and how it relates to both an educator's individual self-efficacy and educators' collective efficacy.

Practitioner Inquiry is another theoretical framework (and methodological, see Chapter 3) that guided the exploration of a personalized professional learning experience and educator efficacy. Practitioner inquiry is constructed on the premise that research knowledge and skill can be enhanced when practitioners themselves conduct their work—data collection, analysis and well-constructed recommendations—in context with other practitioners (Cochran-Smith, Barnatt, Friendman, & Pine, 2009). Leveraging practitioner inquiry allows researchers to conduct their work “on the job,” which is particularly useful when one is studying a personalized professional learning experience (micro-credentialing) that is considered job-embedded training (Cochran-Smith & Lytle, 2009).

Study Limitations

This study explored educators' sense of self-efficacy and collective efficacy while engaged in micro-credentialing as a personalized professional learning experience. Efficacy is a highly impactful factor on student learning, that is an established understanding in the profession (Hattie, 2015). However, little research has been done in the way of exploring what professional learning structures potentially enhance educators' sense of self-efficacy and collective efficacy. This study is important because it addresses this gap in the existing work. With that being said, there are certain limitations to this qualitative study that need to be acknowledged as reference for future related work. The sample size for this study was 42 participants, thus making generalizability of the findings potentially challenging. While the data may speak clearly to themes indicating growth of educators' sense of self-efficacy and collective efficacy, the fact remains that only these participants and their perceptions was explored. It is uncertain whether or not these findings can be extrapolated as a characterization of the educator population at large. Additionally, much of the data that was collected was self-reported by participants in both survey form as well as interviews and artifacts. This may lead to questions about the accuracy of these reports. Another limitation is that the participants were all volunteers, who already shared an interest in and belief in the importance of personalized learning experiences. Could these

educators' natural affinities toward personalized professional learning experiences like micro-credentialing influence the results? This is a possibility. The central researcher in this study is a practicing administrator who had teachers from his school as participants in this study. This was a uniquely beneficial aspect of the study as it allowed the central researcher to more closely observe the teachers while putting their micro-credentialing work in action in their classrooms. While these observations may not be directly reflected in the data gleaned from surveys, artifacts, or interviews, it assists the researcher as a practitioner inquiring into the personalized professional learning experience of micro-credentialing and building his/her understanding of its relationship with efficacy. This same beneficial dynamic can and should also be considered a limitation to the study. Could these particular participants naturally be inclined to offer responses that support his work as an effort to please him as their supervisor? This is a possibility.

Possibilities for Future Work

Possibilities related to this work include the emergence of an experience that enhances educators' sense of self-efficacy and collective efficacy and the creation of a model for micro-credentialing as an established and accessible pathway to educator re-licensure. Efficacy matters as it relates student learning. Previous research has already been shared that supports the power of self-efficacy and collective efficacy. There exists a gap between this assertion and the knowledge/existence of experiences that enhance efficacy. While not significantly generalizable, this study could lead to the emergence of an efficacy-building experience—micro-credentialing. This study could also be a working model for policies and pathways that establish micro-credentialing as an alternative pathway to re-licensure in Kansas. This is exciting and important in that Kansas is redesigning multiple facets of education, yet licensure is one that has had little consideration as an area worthy of redesign. If educators are expected to redesign the way they conduct business as professionals in the classroom, then the way they are credentialed should also reflect redesign. While micro-credentialing exists in many states, there is no such connection yet between it and educator re-licensure. This study could lead to a sustainable model, making Kansas the first to offer micro-credentials as alternative re-licensure pathway.

Other interesting possibilities relate to micro-credentials being physically represented on one's license as a "professional learning passport," as well as micro-credentialing as a factor in screening and hiring educators.

Subjectivity Statement

It is important that the researcher makes readers aware of several subjectivities as it relates to his relationship to the topic. The researcher is a member of the Professional Standards Board, the extension of KSDE's division of Teacher Licensure and Accreditation charged with the responsibility of creating an alternative pathway to re-licensure via micro-credentialing. The researcher was one of three key members that originally proposed micro-credentialing to the Professional Standards Board and convinced them that it is worthwhile of exploration as a redesigned pathway to re-licensure. A significant amount of time, energy, and effort have already been devoted to this work on the researcher's behalf. This built-in investment needs to be acknowledged by readers of this work.

Chapter Summary

This study is an exploration of micro-credentialing as both an alternative pathway to educator re-licensure and as a means to enhancing educators' sense of efficacy. Educators are dissatisfied with their current professional learning experiences. Micro-credentialing could be a more satisfactory professional learning experience. There exists a disconnect between relevant, personalized professional learning and re-licensure. Micro-credentialing could be that connection. The power of efficacy is abundantly supported by research, however, there is little work that illustrates professional learning experiences that build educators' sense of efficacy. Micro-credentialing could be an efficacy-building experience.

Chapter 2: Literature Review

Opportunities to engage in professional learning are more robust than ever (Darling-Hammond, Hyler, & Gardner, 2017). The cost and time spent on professional development are also more robust than ever (TNTP, 2015). It's also been historically inferred that the success of all educators begins and ends with their commitment to professional learning (Klingner, 2004). Success, in the form of teacher competency, is closely aligned with the amount and quality of professional learning in which teachers engage (Gentile, 2006). Passive learning has not been found to create changes in teaching practices (Smith, 2010; Wei, et al, 2010, Borko, 2004). Exposure to content by itself does not impact a teacher's practice unless it is reinforced through further exploration and practice (Joyce & Showers, 2002). For example, when professional development presents educators with an opportunity to "practice" their skill attainment via professional development the estimated percentage of proficient skill-demonstration increases from 20% to 60% (Joyce & Showers, 2002). When ongoing support, in the form of peer review and reflection, is added, skill attainment spikes to 95% coupled by a substantial likelihood of "transfer to regular practice" (Joyce & Showers, 2002). Therefore, it can be inferred that the more professional learning educators entrench themselves and the more closely professional learning is connected to practice and ongoing support, the more competent educators can become.

With this correlation at the forefront, it is a worthwhile effort to explore the forms of professional learning in which educators engage. It is equally worthwhile to explore how educators feel about these methods and modes of professional learning. These are a few of the many questions driving this inquiry into micro-credentialing as a pathway to professional learning and re-licensure.

Teacher Participation in/Satisfaction for Formal and Personalized Professional Learning

Educators surveyed in *The Mirage* (TNTP, 2015) reported spending 19 full school days—nearly 10% of a school year—participating in development activities. If this example is extrapolated, after a little more than a decade in the classroom, these same educators will have spent the equivalent of more than a full school year focused on development activities (TNTP, 2015). Educators spend a vast amount of time engaging in professional learning, which leads to the question: In what kinds of professional learning are educators engaging?

Ninety-nine percent of teachers participate in formal professional development with more than 80% participate via in-service days and more than half in educator workshops (Grunwald Associates LLC & Digital Promise, 2015). Seventy-two percent of teachers participate in non-required professional development (Grunwald Associates LLC & Digital Promise, 2015). While participation in formal professional learning is vast, satisfaction in it is minimal. For example, “while 84% of teachers report participating in in-service days only 20 percent are satisfied with them.” (Grunwald Associates LLC & Digital Promise, 2015, p. 7). While not as significant of discrepancy, other reports, such as Darling-Hammond, Wei, and Richardson (2009) also indicate educators’ dissatisfaction with traditional forms of professional learning. Darling-Hammond, Wei, and Richardson (2009) found that 90% of educators report participating in professional learning on a yearly basis, but only 59% found their learning “useful.” The level of satisfaction worsens for some of the most popular content areas—technology integration, classroom management, and reading instruction: for these areas satisfaction is less than 50% (Darling-Hammond, Wei, & Richardson, 2009). Rationale for this dissatisfaction varies from educators reporting that the trajectory of their professional learning is dictated by others, thus feeling that they have little autonomy over what training they attend or receive (Boston Consulting Group, 2014). Educators also become dissatisfied when systems limit them in modifying professional learning decisions based on their students’ needs year-to-year. (Klingner et al, 2003). Educators have also revealed that they have limited support for efforts to engage in effective instructional shifts post-professional development, nor sufficient time to learn from one another when training is formalized (Center for Public Education and National School Boards Association, 2013). Educators crave collaborative opportunities within their professional learning experiences and express dissatisfaction when time is not intentionally built in for learning with and from each other (Klingner et al, 1999).

Because educators are not satisfied with their formal professional development, nearly three in four are pursuing informal, personalized professional learning that satisfies their professional needs for growth (Grunwald Associates LLC & Digital Promise, 2015).

Educator Voice: What Educators Really Want in Professional Learning

A significant want among educators is professional learning experiences that help lessen the stress that comes with teaching (Early Learning Digest, 2018). Personalized professional learning might be a more satisfactory route to meeting educators' professional needs for growth because it might be more closely aligned with what teachers want in their professional learning experiences. Educators are faced with an increasing number of demands that range from rigorous academic objects to supporting students with adverse childhood experiences, therefore, they desire professional learning that relieves the stress of these expectations via job-embedded coaching and support (Early Learning Digest, 2018).

Because curriculum, recommended best practices, and students' needs are constantly changing, educators rely on each other as teammates from whom they learn and with whom they can grow professionally (Trust, Krutka, & Carpenter, 2016). Whether it is a core team of educators in one's school or a tribe of educators one finds via social media, educators crave a Professional Learning Network as a part of their professional learning experience (Trust, Krutka, & Carpenter, 2016). Professional Learning Networks can be defined as a network of individuals who provide ongoing inspiration, support, and resources to each other, resulting in professional growth for each member (Flanigan, 2012). Educators want connections with teammates and a social element to their professional learning experiences.

Korthagen (2017) discovered that professional learning is multi-dimensional, multi-layered, and often occurs unconsciously and separate from formal professional development experiences. This finding is supported by teachers' desire for professional learning to be more personalized to teachers' individual pacing and demands on their time (Early Learning Digest, 2018). Educators want learning opportunities over which they have more control of time, place, pacing, and path (Cator, Schneider, & Vander Ark, 2014). Autonomy related to time, place, pacing, and path is more important to educators than helping ensure pay increases or promotions (Grunwald Associates LLC and Digital Promise, 2015).

Educators want professional learning experiences that lessen stress and spark confidence. Educators want professional learning experiences that have a social element to them, allowing them to learn with and from peers. Educators also want autonomy over the time, place, path, and pacing of their professional learning. Personalized learning, specifically in the form of micro-

credentials, may meet many of the desires educators have voiced as important components to their professional learning.

Positive Attributes of Personalized Professional Learning

Personalized professional learning has unique benefits to the educator himself/herself, including an element of control over time, place, path, and/or pace of learning; a balance between goals defined by the individual and those defined by the school or school system; job-embedded, meaningful integration into classroom practice; and competency-based progression (Cator, Schneider, & Vander Ark, 2014). The by-products of these benefits include noticeable spikes in interest and engagement as well as perseverance (Lanza, 2016). Ady, Kinsella, and Paynter (2015), with their implementation of a digital-badging system of professional learning, reported that teachers routinely verbalized excitement about being so close to earning a badge. In addition, personalized professional learning experiences, in the form of micro-credentials, “create consistent and intentional structures for both recognizing the work educators are doing and supporting a culture and climate of celebration” (Ady, Kinsella, & Paynter, p. 24). As the former United States Commissioner of Education, Arne Duncan recognized the potential of micro-credentials as means to celebrate and elevate the profession:

“Let me emphasize how (micro-credentials) could help advance the careers and mark the capacity-building milestones of our nation’s teachers. Teaching is one of the most complex, challenging, and consequential professions. We see technology, in general, and a (micro-credential) in particular, as a new way to support America’s new and veteran teachers and help them achieve the professional growth they seek” (Duncan, 2011, p. 2).

Celebration of learning is critical to educators’ satisfaction with professional development, as many educators report that their schools, districts, and states fall short of routinely recognizing teachers as experts and leaders (National Research Council, 2008). Personalized professional learning, especially in the form of micro-credentialing, can be used to more effectively celebrate educators’ existing and emerging competencies, leading them to be more confident in their learning and hungrier to learn more.

Closely connected to the celebration of educators as learners is the positive impact that personalized professional learning can have on morale of teachers. In studies led by Trust,

Krutka and Carpenter (2016), educators viewed the PLN's that came with personalized learning experiences as a "professional refuge." These experiences lead to a closer connection with themselves and others, giving them a new and energizing "professional identity" (Trust, Krutka, & Carpenter, 2016). This identity led participants to "be consistently positive" and "excited about teaching again" (Trust, Krutka, & Carpenter, 2016, p. 31). Participants went so far as to say that their personalized learning experiences were bringing "dignity to the profession through the beauty of empowerment" (Trust, Krutka, & Carpenter, 2016, p. 32). When educators have an identify as a professional learner, are more enthusiastic toward their own development, and feel empowered, then morale is positively and significantly impacted.

While a direct link between student achievement and personalized professional learning among educators is unestablished, there are connections between certain attributes of personalized professional learning and student achievement.

Effective professional learning experiences allow time for educators to learn a new strategy and adapt it to the specific challenges in their classrooms and schools (Gulamhussein, 2013). When educators are allowed essential time and space for implementation of new learning, student achievement is positive impacted. Yoon et al. (2007) explain that professional development impacts student achievement through basic but vital steps:

Professional development affects student achievement through three steps. First, professional development enhances teacher knowledge and skills. B knowledge and skills improve classroom teaching. Third, improved teaching raises student achievement. If one link is weak or missing, better student learning cannot be expected. If a teacher fails to apply new ideas from professional development to classroom instruction, for example, students will not benefit from the teacher's professional development. (p. 4).

Yoon et al. (2007) report when professional development follows the aforementioned steps and educators have the time and space for implementation of new learning, student achievement can boost up to 21 percentile points.

It can be inferred from the literature that teachers are increasingly dissatisfied with traditional professional learning experiences and need an alternative model for building professional competencies. It can also be inferred that personalized professional learning experiences present educators with more autonomy over what and how they learn, as well as

greater recognition for their existing and emerging competences. A concern with personalized professional learning is teachers' reluctance to engage in it wholeheartedly (Grunwald Associates LLC & Digital Promise, 2015) Perhaps educators' reluctance to invest as much time, energy, and effort into personalized professional learning is the disconnect they see with it and certification/licensure? Many times these experiences are not tracked, evaluated or recognized, and thus cannot be counted toward licensure (Center for Teaching Quality & Digital Promise, 2016, p. 4). Micro-credentialing could be that alternative model for satisfactory professional learning. Micro-credentialing could also be the way to track, evaluate, and recognize personalized professional learning and thus connect it toward professional licensure.

Educator Credentialing--Conventional and Nonconventional

Before micro-credentialing is delineated as a new and alternative model for professional learning and licensure, it is helpful to explore the meaning and purpose of credentialing in general. Austin et. al (2012) frame all types of credentials in use—degrees, certificates, certifications, licenses, badges, etc.—as harmonious “in the same language of competencies: the level of knowledge and specialized, personal, and social skills the credential represents” (p. 3). To see credentialing as the manner in which candidates' competencies are holistically represented is important to the later analysis of micro-credentialing and how it illuminates the knowledge and skills of educators.

However, before micro-credentialing is framed as a potential response to the dissatisfaction with conventional pathways to re-licensure, it is worthwhile to recount the methods in which educators currently earn initial licensure and renew their licensures over the course of their careers.

In Kansas, educators can earn initial licensure and proceed to professional licensure through the following series of professional learning destination points:

Educators can earn an Initial License by completing an educator preparation program. A minimum of a bachelor's degree, recency of credit, and testing for content and pedagogy is also required. During the two-year initial license period, the employing district delivers to the educator a two-year approved mentor program while employing the educator in an appropriate assignment. The educator then moves to a five-year Professional License. Educators can maintain the professional license throughout the duration of their career, although educators can earn a ten-year

Accomplished License by achieving National Board Certification
(Susan Helbert, personal communication, July 3rd, 2018).

In Kansas, educators can renew their professional license by the following series of professional learning destination points:

The professional license is renewed every five years with professional development points. The educator's local district professional development council (PDC) awards the professional development points for licensure renewal. The educator submits an individual development plan with professional learning goals, which the PDC approves. As activities are completed, the PDC awards the appropriate number of points for each activity. Educators at the bachelor degree level must earn 160 professional development points, of which at least half (80 points) must be earned through completing semester credit hours. Educators can earn the remainder of the points for various activities, including district in-service activities. An educator holding a graduate degree renews with 120 professional development points, with no requirement for credit hours. Graduate level educators also have the option of renewing twice on a minimum of three years of accredited experience (Susan Helbert, personal communication, July 3rd, 2018).

While no specific data gleaned suggested direct dissatisfaction with these licensure pathways, conventional methods of credentialing (GPA, degrees, certificates, licenses) are not meeting the needs of employers. Raish and Rimland (2016) assert that “employers would like more detailed representations of (candidates’) skills” (p. 87). According to their work, “only 38 percent of employers agree that grades and GPA have a high correlation with preparedness in the workplace, while 79 percent of employers desire a more specific representation of (candidates’) skills when evaluating them for a potential job” (Raish & Rimland, 2016, p. 87). It can be assumed that conventional credentials fall short of fully capturing previous learning, and poorly communicate detailed information about graduates. It can also be assumed that conventional credentials are static in their representation of a candidate's skill-set, and there is a genuine need for “a quality system of portable, stackable credentials” (Ganzglass & Good, 2015, p. 2).

Micro-credentials can provide a more dynamic and detailed picture of a candidate's competencies. DiSalvio (2006) shares that “with a nontraditional digital approach to credentialing--one that places the focus on the individual student learning accomplishments--one

might earn a cluster of (micro-credentials). This collection of individual competencies could be accessible from a variety of social media sites or as a part of a resume or digital portfolio. Providing a more detailed story to prospective employers about those activities that specifically define a student's learning" (p. 1). In addition to providing a more specific, granular glimpse into a candidate's competencies, micro-credentials can be "continually refreshed and validated to ensure that they stay relevant to changing requirements and align with emerging industries and occupations" (Ganzglass & Good, 2015, p. 4). Through this aspect of micro-credentialing, both candidates and employers can connect and customize bundles of particular credentials that meet specific needs of present and future positions. Taking this aspect of micro-credentialing a step further, Human Resources Directors or project managers forming new teams can, in theory, "drill down into a micro-credential to get a better understanding of the specific skill a prospective employee, team member, or applicant has, how it was acquired, and how it will benefit the system," thus giving him/her the edge in securing a position (Priest, 2015, p. 5).

In the contemporary world of credentials, staples like resumes and degrees are becoming antiquated in the eyes of cutting edge employers. Ewens (2015) presents the case that the days of the resume are numbered. According to Ewens (2015), resumes can be made-up, they can be endorsed but not observable, and they can be irrelevant to the skills that candidates actually possess. Ewens presents a new, different way of truly learning about candidates and what they can do: micro-credentials.

Vander Ark (2014) evinces a case for the "doomed degree." Vander Ark (2014) argues that the value of traditional credentials will inevitably decline when employers find more efficient and holistic ways for applicants to showcase their aptitudes. Micro-credentials are more efficient ways to show an individual's areas of aptitude and experience

The benefits of non-conventional credentials are vast. The sources above hint at micro-credentials being used for more than validation of skills; they suggest utility in screening candidates, systemic customization of skills needed or sought in staff, and alternatives to resumes and vitas. These are significant by-products of micro-credentials that add value in eyes of all stakeholders. Recent studies also suggest that employers are ready for a new, different pathway to credentialing. "Thirty-three percent of employers are interested in using (micro-credentials). Sixty-two percent are 'maybe interested' but need to learn more about (micro-credentials) before using (micro-credentials) (Raish & Rimland, 2016, p. 100). Employers are

hungry to learn more about micro-credentials, therefore, a definition and suggested design need to be generated.

Micro-credentials: Definition and Real-World Examples

Ady, Kinsella, and Paynter, A. (2015) present a clear description for micro-credentials: “Micro-credentials can be physical representations of accomplishments or they can be digital icons association with particular skills or tasks” (p. 24). Diaz (2013) adds that micro-credentials “represent discrete academic achievements or valued skills not represented by course outcomes or a degree. These smaller achievements can represent incremental learning and progress toward more significant goals” (p.1). These definitions cement several of the most important characteristics for micro-credentials: specific, competency-based, and dynamic. These studies also show that micro-credentials can, more simply put, build into a portfolio of everything educators know and are able to do, “effectively collecting a currency to support their professional identities” (Center for Teaching Quality & Digital Promise, 2016, p. 9). Micro-credentials, too, are shareable and traceable. Each micro-credential contains valuable data about the organization or the individual that granted it, and how it was earned (Center for Teaching Quality & Digital Promise, 2016).

For the purpose of study and the policy recommendations to Kansas State Department of Education: Teacher Licensure and Accreditation, micro-credentials are defined as:

“personalized professional units of study that result in which a specific competency is earned and/or recognized through a tangible credential” (Professional Standards Board, 2018).

“Micro” within this definition references the specificity and “credential” references the tangible evidence/representation of the competency (Professional Standards Board, 2018).

It is important to note that this definition, while created by members of the Professional Standards Board, is grounded in and guided by the work of other researchers including Ady, Kinsella, and Paynter, A. (2015), Diaz (2013) and the Center for Teaching Quality (2016).

Real-World Examples

Micro-credentials are also performance and evidence-based, vetted by real-world practitioners who head partnerships with schools or are teachers who work collaboratively with each other in their home districts. Three school districts that are considered established examples of leveraging micro-credentials for professional learning are Kettle Moraine School District in Wisconsin, Baltimore County Schools in Maryland, and school districts across the state of Maine.

Maine

Micro-credentials are used comprehensively in Maine to support all public K-12 educators' attainment of specific instructional technology skills (Priest, 2015). "Micro-credentials support our fulfillment of the (statewide) Maine Learning Technology Initiative. Our micro-credentials are built to help teachers develop competencies in the 12 Buckets of Curriculum for Teaching and Learning with Technology" (Muir, personal communication, January 11th, 2017). Maine is using micro-credentials as a method for implementing initiatives of the Maine State Department of Education with the Association of Computer Technology Educators of Maine as collaborative partners (Priest, 2015). This effort has been intended to reframe professional development related to making "educational technology 'more verbs'-what teachers do with technology and 'fewer nouns'-the specific tools used or the computer teacher" (Maine Department of Education Newsroom, 2015). An interesting feature of Maine's model for micro-credentialing is that the state department itself has been the issuer of micro-credentials, specific to the 12 Buckets of Curriculum for Teaching and Learning with Technology via the MLTI (Priest, 2015).

There are no connections to re-licensure with Maine's model of micro-credentialing. However, Muir (2017) envisions Maine re-thinking teacher certification and recertification with micro-credentialing being a part of these pathways. Muir (2017) cautions, though, that Maine needs more examples before it heavily promotes micro-credentials as an alternative pathway to re-licensure. Nevertheless, Maine's approach to micro-credentialing demonstrates the far-reaching impact micro-credentials can have on professional learning related to significant state-wide initiatives.

Baltimore County Public Schools

In Baltimore County Public Schools, micro-credentials became a focal point of the Students and Teachers Accessing Tomorrow (S.T.A.T) initiative. The mission of S.T.A.T. is to “transform Baltimore County Public Schools into a learning-centered, personalized 21st Century learning environment through technology” (Lanza & Snell, personal communication, March 2nd, 2018). S.T.A.T. is designed to encourage student choice and learning autonomy, in addition to mastery of district technology standards (Lanza & Snell, personal communication, March 2nd, 2018). In order to accomplish this goal for students, BCPS realized that the role of the teacher must represent a shift to more job-embedded, personalized professional learning (Lanza & Snell, personal communication, March 2nd, 2018). This required a more competency-based model, which micro-credentials fit ideally. The BCPS Office of Digital Learning, which manages S.T.A.T, partnered with Digital Promise to roll out a micro-credential pilot during the 2015-2016 school year (Lanza & Snell, personal communication, March 2nd, 2018). District leadership within the BCPS Office of Digital Learning created a catalog of 24 micro-credentials that aligned with S.T.A.T’s vision for BCPS as a 21st Century, learner-centered environment (Lanza & Snell, 2018). According to Lanza and Snell (2018), the “micro-credentials selected expanded professional development offerings around district initiatives where growth is taking place and filled gaps not covered by other, more traditional district-led workshops for S.T.A.T. The power of the micro-credentials lies in how specific they can be to a particular competency.” A central component of BCPS’s effort with micro-credentialing is creating learning environments where teachers are active participants in their own learning, through customized educational experiences, which is the same shift S.T.A.T is aiming to create for students (Lanza & Snell, 2018). BCPS is admirable in this effort to match what’s beneficial for students as learners, can and should be the same for adult as learners.

Beyond this effort, micro-credentials, in BCPS, also convert to professional development credits (CPDs). CPDs can count toward teacher certification renewal; this takes place via a point conversion, with a certain number of points being assigned to particular micro-credentials. Every two micro-credentials earned equates to one CPD, with six CPD’s being the benchmark for teacher re-licensure in Maryland (Lanza & Snell, 2018). Six CPD’s must also be complemented by graduate credits via an accredited university/college program (Lanza & Snell, 2018). This incentive does make BCPS a pioneer in the micro-credentialing in that they are

seeking connections between micro-credentialing and educator re-licensure. This is closer to the model sought by the central researcher and the Kansas State Department of Education/Teacher Licensure and Accreditation, but it is not as clear and clean of an equivalency as desired by the central researcher and KSDE TLA. The central researcher and KSDE TLA are working on a policy that translates micro-credentials, directly and standing alone, to teacher re-licensure, bypassing the traditional combination of points and graduate credits (Miller, personal communication, 2018). Nevertheless, it is encouraging to note that BCPS sees the possibility of re-licensure as a powerful incentive for educators willing to engage in micro-credentialing for their professional learning needs.

Kettle Moraine Public Schools

Kettle Moraine School District in Wisconsin has implemented a system that embraces micro-credentials as a means toward making professional learning “not a fixed script” by administration but “an ever-changing dynamic” meeting the needs of teachers (Center for Teaching Quality & Digital Promise, p. 13). The central researcher, as well as Dr. Debbie Mercer (Professional Standards Board Chairperson) and Susan Helbert (Assistant Director of Teacher Licensure and Accreditation) participated in a field study on May 22nd and May 23rd, 2017, where they had an opportunity to visit KMSD interview Kettle Moraine Schools Superintendent, Pat Deklotz and a variety of her leadership and teaching staff. Deklotz shared (personal communication, May 23rd, 2017) a real-life picture of how micro-credentials are teacher-led, collaboratively designed and vetted, and performance-based:

“Gone for the most part are many of the traditional district professional development days. Instead, teachers can apply to earn micro-credentials by submitting proposals to a district team. The teacher or teachers working collaboratively can decide where and how they earn a micro-credential--via a workshop offered by a provider, online course, self-directed research project or classroom-based inquiry, professional learning community, etc., and they must provide evidence that shows how what they learned directly affects classroom practice.”

This model is the most diverse of those analyzed in this study. Kettle Moraine School District works closely with Digital Promise in providing educators micro-credentials in a variety of areas, but the district also works with KMSD teacher leaders as thought partners in creating micro-credentials, providing a rationale for their use in the district, and putting them through the district's approval process monitored by the KMSD Office of Teaching and Learning. This teacher leadership model of collaboratively "creating unique, individualized" with district leadership makes KMSD unique in their framework for providing personalized learning opportunities via micro-credentials. Whether provided by Digital Promise or collaboratively and creatively composed in-house, at the heart of micro-credentials in KMSD is an effort to support the mission of personalizing student learning: "Our teacher professional development mirrors much of what is taking place in our classrooms. We realize that through personalized, more organic learning many of our top educators are engaging in the same platform for learning as our students" (Deklotz, 2017).

Kettle Moraine School District has also developed a salary schedule for teachers that is primarily based on the earning of micro-credentials. In revamping their traditional salary schedule, KMSD wanted to develop a compensation model that recognizes teachers committed to ongoing professional development related to skills that directly create more engaging and individualized learning for students. The initial challenge for KMSD was finding the right vehicle to be at the foundation of this new model that would communicate the district's investment in personalized, competency-based learning for teachers and compensate them accordingly. Micro-credentials became that foundation.

KMSD utilizes a compensation model that awards a permanent base salary increase, ranging from \$200-\$600 depending on the complexity, rigor and impact for each earned micro-credential. A review team of KMSD teachers and administrators review each micro-credential and assign a monetary value to it that teachers can earn upon their successful completion of a said micro-credential. KMSD educators can and do earn multiple micro-credentials throughout the school year, enhancing their salary at a level that is incentivizing for them as a professionally hungry learner and as a career educator in KMSD. KMSD initially considered a stipend model, but for Deklotz (2017), "stipends are for completed work; the potential of micro-credentials for our district's students and teachers is worthy of more than one-time work—that

job is never finished.” This compensation model utilizing micro-credentials pays dividends when attracting and landing talented teachers, says Deklotz (2017).

We have had the experience where multiple districts are talking to the same candidate about a position and the micro-credential salary system tipped the scale in our favor. I think it reflects our value for teacher voice in shaping their professional role. Forgive the cliché, but a lot of other districts haven’t put their money where their mouths are.

Micro-credentials do not directly translate to re-licensure in Wisconsin, but knowing that districts are matching compensation with the achievement of micro-credentials adds value to the argument for micro-credentials as an emergent and transformational force in professional learning and educator re-licensure. Kettle Moraine School District is a flagship district for micro-credentialing and its game-changing potential for professional learning, compensation, recruitment, and retention.

Micro-credentialing and Connection to Professional Learning Standards

Micro-credentialing, while unique and innovative, does not exist in a vacuum. Micro-credentialing, much like any other form of professional learning, exists under an umbrella of factors that impact professional learning—needs and interests of educators, available resources, district and building expectations and goals, and, of course, professional learning standards. It is important that micro-credentialing is leveraged in way that connects and maximizes all these aforementioned factors, especially professional learning standards. Educators do experience the research-based elements of professional learning when engaging micro-credentials (Crow and Pipkin, 2017), especially those subscribed to in Kansas.

In April 2012, the Kansas State Board of Education adopted the Learning Forward Standards for Professional Learning (“Kansas State Department of Education,” n.d.). These standards are the guidelines around which all Kansas school districts should craft professional learning experiences for educators. As micro-credentialing is explored as both a pathway to high-level learning and educator re-licensure, it is worthwhile to compare its scope and structure with the Learning Forward Standards. Figure 2.1 below illustrates the seven Standards for Professional Learning as outlined by Learning Forward (“Kansas State Department of Education,” n.d.).

Figure 2.1 Standards for Professional Learning

STANDARDS FOR PROFESSIONAL LEARNING			
<i>Professional learning that increases educator effectiveness and results for all students ...</i>	<p>LEARNING COMMUNITIES: Professional learning that increases educator effectiveness and results for all students occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment.</p>	<p>LEADERSHIP: Professional learning that increases educator effectiveness and results for all students requires skillful leaders who develop capacity, advocate, and create support systems for professional learning.</p>	<p>RESOURCES: Professional learning that increases educator effectiveness and results for all students requires prioritizing, monitoring, and coordinating resources for educator learning.</p>
<p>DATA: Professional learning that increases educator effectiveness and results for all students uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning.</p>	<p>LEARNING DESIGNS: Professional learning that increases educator effectiveness and results for all students integrates theories, research, and models of human learning to achieve its intended outcomes.</p>	<p>IMPLEMENTATION: Professional learning that increases educator effectiveness and results for all students applies research on change and sustains support for implementation of professional learning for long-term change.</p>	<p>OUTCOMES: Professional learning that increases educator effectiveness and results for all students aligns its outcomes with educator performance and student curriculum standards.</p>

Micro-credentialing has positive attributes and design components that align with all seven of the Learning Forward Standards for Professional Learning, most notably Learning Designs in that theory, research and different models of andragogy are integrated into the personalized learning experience (Crow & Pipkin, 2017). Educators also consider, prioritize and eventually select micro-credentials personalized to their interests, needs, and learning styles, all of which falls within the standard of Learning Designs (Crow & Pipkin, 2017). Learning Communities is another learning standard that is plainly exhibited by educators when they engage in micro-credentials (Crow & Pipkin, 2017) A team approach, often in the form of a Professional Learning Network, is often employed when educators engage in micro-credentialing (Trust, Krutka, and Carpenter, 2016). Through a “group micro” like this, collective responsibility is taken and built (Deklotz, 2017), which is a key component of the Learning Communities standard (Crow & Pipkin, 2017). Implementation is also evinced in micro-credentialing due to the action research aspect of the learning experience wherein learning is implemented via a unit of study facilitated with students and then later reflected on as a worthwhile/not-so-worthwhile method to systematized (Cator, Schneider & Vander Ark, 2014). The Implementation standard also helps educators move toward learning that is sustainable as a professional lifestyle practice,

not one-time or episodic (Crow & Pipkin, 2017). Micro-credentialing, because it involves validation of a competency (Ady, Kinsella, & Paynter, 2015) and bestows educators with a sense of “professional identity (Trust, Krutka, & Carpenter, 2016), becomes more of a lifestyle practice.

It is important for reviewers of the study, especially those connected with redesign efforts in Kansas public education, to see the connection between micro-credentialing and the Learning Forward Standards for Professional Learning, as all seven are present in the micro-credentialing as a personalized professional learning experience.

Efficacy Matters

Efficacy beliefs are important because they are paramount in guiding educators’ decisions and actions. Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) define educator self-efficacy as an educator’s “belief in his/her capability to organize and execute the courses of action required to successfully accomplish a specific teaching task in a particular context” (p. 232). Efficacy beliefs are connected to greater job satisfaction (Stephanou, Gkavras, & Doulkeridou, 2013) and more positive emotions related to their work (Muthuvelayutham & Mohanasundaram, 2012). Efficacious educators are also more open to new ideas and thus more likely test various teaching methods to satisfy the present needs of their students (Allinder, 1994; Ross & Gray, 2006).

Goddard, Hoy, and Woolfolk (2004) assert that efficacy “directly affects the diligence and resolve with which groups chose to pursue goals” (p.8). Efficacious educators demonstrate a stronger persistency in the face of difficulties and greater resilience (Klassen & Chius, 2010). If an educator (self-efficacy) or better yet a team of educators (collective-efficacy) filter their realities through the belief that what they learn can and does impact student achievement, it is very likely that these beliefs will manifest in their instructional decisions and practice.

The body of work related to self-efficacy, collective efficacy and educators also extends to its impact on student learning (Hattie, 2016). Collective efficacy, with an effect size of 1.57, is ranked as one of the highest factors influencing student achievement (Hattie, 2016). For a comparison, student-teacher relationships have an effect size of .72 (Hattie, 2012). Hattie’s work is abundantly clear: Efficacy matters and any professional learning that leads to it should be maximized.

Both self-efficacy and collective efficacy are enhanced when educators experience more autonomy and associate more positive emotions (such as confidence, competence, enthusiasm, hope, pleasure) with their work (Stephanou, Gkavras, and Doulkeridou, 2013). It is safe to presume when educators engage in professional learning experiences that provide more autonomy and satisfaction, they become more efficacious. What professional learning opportunities provide more autonomy, and therefore, trigger more positive emotions such as confidence, competence, pleasure, hope, etc.? Personalized professional learning is synonymous with autonomy and relevance, which leads to greater satisfaction/positive emotions (Boston Consulting Group, 2014). Three out of four teachers report participating in personalized professional learning because these experiences are specific to their needs and relevant to the challenges they are presently facing in their schools and classrooms (Grunwald Associates & Digital Promise, 2015). Educators engaging in micro-credentials, specifically, feel an element of control of time, place, path and pace of their learning, which is in contrast to the lack of agency they experience during more traditional professional learning experiences (Cator, Schneider, & Vander Ark, 2014).

If personalized learning experiences can trigger greater feelings of efficacy among educators, then exploring and establishing a connection between the two could be instrumental in the establishment of it as a transformative model for professional learning and re-licensure.

Questions, Criticisms, and Opportunities

Because micro-credentialing is fresh to the field of professional learning and re-licensure, questions should be asked and critiques will be made. It is important to consider the aforementioned questions and potential criticisms, as this consideration will lead to deeper analysis of what works and what may not. The goal is to explore micro-credentialing with the belief that it can become a legitimate pathway to professional learning and as a model for re-licensure. To create and sustain this belief, questions and criticisms will need to be addressed.

In terms of design and implementation, DiSalvio (2016) shares numerous questions that will need to be addressed.

- “What does the recipient of the micro-credential have to do to establish a claim of learning?”
- What evidence will be used to substantiate learning claims?

- Can the micro-credential exist with the institution’s learning management system or can it exist within any learning management system?
- Is the learning evidenced in the micro-credential context-specific and not subject to expiration or valid for a limited amount of time until more training is required?” (p. 2).

If states are exploring micro-credentialing as a comprehensive approach to reforming professional learning and/or re-licensure, the following questions posed by Grant (2014) will need to be addressed.

- “What kind of trust frameworks must be in place before organizational microcredentials have value?
- How do we create value for micro-credentials outside the learning environments in which they were earned?
- How do we design micro-credential systems across institutions and programs with optimal interdependence?
- How many people does it take to build a micro-credentialing system, and what roles are necessary for effective collaboration?
- What existing attitudes toward learning, assessment, and credentials should be examined before building micro-credentialing systems?
- Is it optimal to start from scratch, or is it better to build on existing resources?” (p. 9)

These questions will have to be fully analyzed and responses formulated in order to establish micro-credentials as pathway to teacher re-licensure.

Conclusion

Educators are becoming increasingly dissatisfied with conventional professional learning and increasingly interested in personalized professional learning in the form of micro-credentials. The tangible and intangible benefits of personalized professional learning are replete and are becoming recognized by not only individual educators, but by school districts and states as well. Many systems are already in place to help launch micro-credentials as a vehicle for professional learning, for example, many states, including Kansas, integrate seat-time and competency-based learning in their models for professional development and re-licensure. The gap between where states are now and where they would need to be in order to fully establish micro-credentialing as a pathway to re-licensure lies in the lack of policy. The goal of this work is to recommend a policy in Kansas that recognizes micro-credentialing as a pathway to re-licensure. This policy

would define a number of micro-credentials that would equate to re-licensure, including those that reflect both state priorities and individual teacher interests. The rationale behind the creation of the policy will be grounded in the relationship between micro-credentialing and the significance of educator self-efficacy and teacher collective efficacy. While much work lies ahead and many questions/criticisms will need to be addressed, the landscape is primed for a new brand of professional learning and re-licensure

Chapter 3: Methodology

Participants engaged in a study exploring micro-credentialing as both a personalized professional learning experience and a potential pathway to teacher re-licensure in Kansas. Participants selected from a menu of micro-credentials provided by Bloomboard, an on-line platform and provider of a variety of micro-credentials or create their own micro-credentials. Whether the micro-credential was provided by Bloomboard or created by the participant himself/herself, the micro-credential's content connected to a Kansas State Department of Education Board Outcome (for example, Social Emotional Learning or Individual Plans of Study) and included the following design components—Research and Plan, Implement, Analyze, Share and Reflect. In order to achieve re-licensure, participants completed two micro-credentials over the course of two semesters, Spring 2018 and Fall 2018.

This exploration of personalized professional learning and its relationship with educators' sense of self-efficacy and collective efficacy was situated within a mixed-methods approach. In this particular study, it was important to employ multiple tools, surveys (quantitative), interviews and artifacts (qualitative), to connect with participants in a manner that was manageable for them in terms of time, energy, and effort devoted to the micro-credentialing initiative. All participants completed a digital survey of Likert-response items, as they consumed very little time, energy and effort of participants and provided a clear, specific illustration of each participant's sense of self-efficacy and collective efficacy during their micro-credentialing experience. All participants formally submitted their work toward earning micro-credentials through the Bloomboard platform or through the Google form created and evaluated by the central researcher and two other evaluators from the Professional Standards Board. The submissions were used as artifacts through which the connection between personalized professional learning and participants' sense of self-efficacy and collective efficacy could be explored. The use of artifacts as a qualitative source of data was a natural by-product of the study, as submitting "your work" was a requirement for participants in the study and a requirement for earning a micro-credential. It was also important in this work to employ interviews that could more openly and more deeply inquire into participants' sense of self-efficacy and collective efficacy. Interviews were facilitated among groups of participants who volunteered their time, energy, and effort

Employing both the surveys and the interviews allowed the researcher to respect the participants' time and efforts. Employing both the surveys and interviews also allowed the

researcher to assess efficacy on a broad level with all participants while at the same time evaluate efficacy more deeply through interviews. Employing just one of these tools would have produced a study of lesser value (McKim, 2017).

Furthermore, by utilizing multiple methods and data sources, the opportunity arose wherein one data source could inform the other data source. When one data source informs the other, value is added by increasing the validity of the overall findings and assisting in knowledge creation (Hurmerinta-Peltomaki & Nummela, 2006). In this case, the artifacts and interviews added value to the surveys. Knowledge creation is at the heart of practitioner inquiry (Lewis, 2011) thus making a mixed-methods approach effectively aligned with the methodological framework of the study. Another value of a mixed methods approach that was considered by the researcher was the integration component that naturally comes with mixed methods. Integrating two methods and presenting data in two different ways can give readers more confidence in the results and the conclusions they draw from the study (O’Cathain, Murphy, & Nicholl, 2007). Integration has also shown to help both researchers and readers cultivate ideas for future exploration (O’Cathain, Murphy, & Nicholl, 2010). This was an important consideration for the researcher, as micro-credentialing is in its infancy as a pathway to professional learning and educator re-licensure. Approaches that promote, inspire, and guide future work in the areas of micro-credentialing should be utilized to further build on the knowledge base and potential applications for personalized professional learning. For these reasons, it was concluded that a mixed methods approach best suited the needs of this practitioner inquiry into micro-credentialing and its relationship with efficacy.

The following components of this study are summarized in this section: (1) research questions (2) research design (3) means of data gathering and analysis and (4) reliability and validity of the study.

Research Questions

Questions	Data Sources
What examples of self-efficacy do educators evince after completing micro-credentials as a part of a re-licensure pathway?	<ul style="list-style-type: none"> • Self-Efficacy Post-Survey responses, • Focus Group Interviews • Artifacts (submissions to Bloomboard and Create-Your-Own)
What examples of collective-efficacy do educators evince prior to completing micro-credentials as part of a re-licensure pathway?	<ul style="list-style-type: none"> • Collective-Efficacy Post-Survey responses, • Focus Group Interviews • Artifacts (submissions to Bloomboard and Create-Your-Own)
What relationship exists between micro-credentialing as a personalized professional learning experience and educator efficacy?	<ul style="list-style-type: none"> • Efficacy Survey Responses • Focus Group Interviews • Artifacts (submissions to Bloomboard and Create Your Own) • Reflection

These questions helped the researcher explore the connection between a personalized learning experience like micro-credentialing and educators’ sense of both self-efficacy and collective efficacy.

Research Design

The theoretical framework guiding this study is symbolic interactionism. Symbolic interactionism explains how interactions with tangible and intangible symbols or experiences make meaning in people’s lived experiences (Bhattacharya, 2017; Blumer 1969; Carter & Fuller, 2015). In this study, participants interacted with micro-credentials as personalized learning experiences, which, in turn, influenced the meaning they made of their lived experience as a professionally hungry educator. Symbolic interactionism also allows a researcher to inquire into how “people see themselves, others, and how they think others perceive them” (Kant, 2018). Efficacy was explored both through the administration of digital surveys as well as through the

facilitation of interviews. In both, there was an inquiry into how participants perceived themselves and others as competent, capable educators.

Methodologically, this study was situated within the practitioner inquiry framework (Cochran-Smith & Lytle, 2009). Practitioner inquiry can be explained as research that is conducted by practitioners (individuals practicing in the field/context) for the purpose of advancing their individual practice or body of knowledge (McLeod, 1999). Practitioner inquiry is built on the premise that those who work or exist in a particular field have a knowledge base and skill set related to problems and questions that exist in that space and thus can address them effectively through research, data collection, analysis, and well-constructed recommendations (Cochran-Smith, Barnatt, Friendman, & Pine, 2009). The study was facilitated to build not only the central researcher's knowledge base related to personalized professional learning and efficacy, but also that of the Kansas State Department of Education, with Teacher Licensure and Accreditation/Professional Standards Board being the peer group of practitioners to whom he reported. In order to enhance the general knowledge base related to personalized professional learning and efficacy, both quantitative and qualitative methods were employed, with both situating participants in a particular context, in this case the micro-credentialing experience, and gauging their sense of efficacy. Practitioner inquiry, traditionally, within the realm of education, speaks to an educator who participates in the inquiry process as a researcher while working from the inside of a school (Cochran-Smith & Lytle, 2009).

This practitioner inquiry into personalized professional learning and its relationship with educator efficacy began with an application to the Internal Review Board at Kansas State University. A comprehensive description of the purpose of the study, any risk to the prospective participants and institution, research questions, and methods for studying human participants was provided. Once approval was secured from the IRB, the selection of participants was initiated.

Criteria for participant selection included—(1) participants had to be practicing educators in Kansas and (2) they had to be seeking renewal of his/her professional teaching license. The process of selecting participants was more multifaceted. Due to the unique nature of this study, a sample of convenience was employed.

An invitation was made to all members of the Professional Standards Board via KSDE/Teacher Licensure and Accreditation. PSB members were invited as they were the source of the study's initial creation and promotion as a method of redesigning teacher re-licensure.

PSB members were also quality candidates as all members are practicing educators in Kansas and might be in need of license renewal. Many members expressed interest and four participants began and completed the requirements of the study.

An invitation to educators at Briarwood Elementary School was also extended. Briarwood Elementary School educators were invited as they are educators at the school the central researcher leads as a building principal. The learning opportunity via micro-credentialing and potential re-licensure were both very attractive to this particular group of teachers.

An invitation to educators in Countryside Elementary School was also extended. Countryside is a smaller school, rural district 15 miles in proximity to Briarwood. Due to their physical proximity and reputation as an innovative school district, Countryside teachers were quality candidates for this study. The learning opportunity via micro-credentialing and potential re-licensure were both very attractive to this particular group of educators.

An invitation to educators at Kisiwa Elementary School was also extended. Invitations to this school and district was made due to educators being exposed to the study from their work with Kansas State University, Teacher Education and from their own experience with micro-credentialing as a personalized learning pathway. At the time of the invitation, all certified staff member at the school were actively engaging in a micro-credential of their personal choice.

Table 3.1 summarizes important demographic information related to each of these participant groups.

Table 3.1 Participant Information

Participant Group	Number of Participants Who Completed All Requirements	Demographics	Content Areas Represented
Professional Standards Board	4	One male, three females, ranging from 10-30 years of experience	Library Media Specialist, University Professor, Higher Education Administration, Intermediate Grades
Countryside Elementary School	6	Two males, four females, 11 years of experience to 30 years of experience	Primary Grades, Intermediate Grades
Briarwood Elementary School	9	One male, eight females, 6 years to 22 years of experience	Primary Grades, Intermediate Grades, Music, Counseling, Reading Interventionists
Kisiwa Elementary School	3	Three females, 7 years to 30 years of experience	ESOL, Primary Grades, Intermediate Grades

Orientation to the pilot (for an overview of pilot see Appendix B), its components, timeline, and requirements, was provided via face-to-face presentations by the central researcher. In these presentations, participants learned about the different micro-credentials they have access to via Bloomboard. Bloomboard is an online provider of micro-credentials and Bloomboard's leadership team collaborated with the central researcher and the Kansas State Department of Education/Teaching Licensure and Accreditation in offering micro-credentials as a part of the pilot.

The alignment process and ultimate selection of the micro-credentials to be offered was conducted by the central researcher, two professors from Kansas State University, two members of the Professional Standards Board, as well as an additional building principal. The micro-credentials offered by Bloomboard and ultimately selected by the aforementioned team in areas that complemented the Kansas State Board of Education Outcomes—Social-Emotional Learning and Individual Plans of Study. Participants also learned about a Create-Your-Own option for creating and completing micro-credentials specific to their own unique interests and needs within the realm of Social-Emotional Learning and Individual Plans of Study

In the orientation presentations, requirements for submission of their micro-credentials and corresponding due dates were shared.

Informed consent documents were completed by the participants that explained their rights and responsibilities (see Appendix C).

For each semester of the pilot, participants were expected to select or design a micro-credential and submit their work toward earning said micro-credential by the due date shared in the orientation. In addition to the micro-credential work itself, all participants completed surveys exploring their sense of efficacy throughout the micro-credentialing experience. The surveys were taken as a pre-survey and a post-survey, completed at the start and end of each semester. In the second semester, Fall of 2018, participants had the option to participate in focus group interviews with the central researcher. Interviews were facilitated via Zoom (a digital video-conferencing tool) or via face-to-face meetings at the participants' schools and were at a time that was convenient for each group. Each semi-structured interview was conversational in nature and required no prior preparation on part of the participants. Each group interview lasted approximately 60 minutes, with each interview being recorded and transcribed via Rev Voice, an

iPad application that records and transcribes interviews. Coding was utilized as a method for grouping participants' responses into categories and themes post-transcription (Flick, 2009). At the end of each semester, the submissions for earning micro-credentials were collected by the central researcher. The submissions for the micro-credentials provided by Bloomboard had to be requested by the central researcher from the Bloomboard leadership team. The submissions were reviewed and analyzed according to the aforementioned codes. These codes led to the creation of thematic categories, leading to themes from the codes and categories for each participant. The practitioner inquiry process of coding, categorizing and thematic development is described in Chapter Four.

Data Gathering—Tools and Processes

This mixed methods research utilized three tools as means to gather data related to participants' sense of efficacy and its relationship with a personalized professional learning experience, in this case, the micro-credentialing pilot. The three tools used were Likert-type surveys, focus group interviews, and artifacts.

Efficacy was at the core of this study as a variable worth exploring due to its significant impact on student achievement (Hattie, 2015). Self-efficacy—one's confidence in one's competence—has an effect size of 1.33 (Hattie, 2016). Collective efficacy—the group's confidence in the group's competence—has an effect size of 1.57 (Hattie, 2016). Hattie uses .40 as a benchmark for factors that are statistically worthwhile in terms of their positive impact on learning (Hattie, 2008). Factors such as classroom management and student teacher relationships are traditionally viewed as "impactful" and Hattie's work supports that in that these factors have effect sizes of .52 and .72, respectively (Hattie, 2008). These factors are above the .40 benchmark and are statistically worthwhile, however, they are dwarfed by the effect sizes of both self-efficacy and collective efficacy. Efficacy was assessed via surveys completed by all pilot participants. The survey questions were designed to assess an important component of efficacy as delineated in the Operational Definitions for Self-Efficacy and Collective Efficacy.

Self-Efficacy—One's confidence in one's competence--Themes consistent with self-efficacy will be evaluated in both the Likert-type survey items and the interviews (both individual and group). Themes may include but will not be limited to an educator's perception of confidence to successfully apply a particular competency, an educator's perception of himself/herself as an expert with a particular competency, an educator's

belief in his/her ability to teach his/her peers a particular competency, an educator's sense of empowerment, or an educator's belief that his/her profession is respected by stakeholders outside of his/her peers.

Collective Efficacy—Teammates' confidence in the team's competence--Themes consistent with collective efficacy will be evaluated in both the Likert-type survey items and the interviews (both individual and group). Themes may include but will not be limited to educators' shared belief that through their collective action, they can positively influence student achievement, educators' willingness to learn a new idea/skill with their team, educators' belief that they can teach other teams of educators a particular competency, a team's sense of empowerment, or a team's belief that their profession is respected by stakeholders outside of their peers.

These Operational Definitions were collaboratively created by the researcher with his dissertation committee and the Professional Standards Board and are supported by efficacy themes in the work of Goddard, Hoy, and Woolfolk (2004), Hattie (2008), and Hattie (2015).

Surveys

The survey questions used in this study assessed key components of these Operational Definitions such as “confidence” or “empowerment” or “the ability to teach others.”

The survey questions were Likert-type in their design. Likert-type surveys are frequency or intensity scales that use fixed choice response options, designed to measure attitudes or opinions toward a particular topic/experience (Burns & Grove, 1997). Likert-type surveys utilize ordinal scales that often are in five-point or seven-point increments measuring the level of agreement or disagreement with a particular statement about a topic/experience (Bowling, 1997). Likert-type scales also assume that the strength/intensity of an experience is linear from strongly agree to strongly disagree, making the assumption that attitude/opinion/feeling can be measured (McLeod, 2008). In this study, Likert-type surveys utilized a five-point intensity scale that measured participants' level of agreement/disagreement with statements related to their sense of self-efficacy and collective efficacy.

Likert-type surveys are beneficial to researchers because they are economical, efficient and the results are easy to analyze (Ho, 2016). In this study, the use of Likert-type surveys as Google Forms were free and efficiently distributed to all participants via the One-Stop-Shop Google Sheet that was created as the platform from which all participants gathered information about the pilot. The results were also easy to analyze, as each form could be accessed via Google Forms and statistical analyses (mean and mode) and visual representations (pie charts) to illustrate

themes were naturally built into the tool. Another advantage to using Likert-type surveys is that an all or nothing answer from participants is not expected or obtained; instead they allow for degrees of attitude/opinion/feeling can be selected (Ho, 2016). A disadvantage to the validity of a Likert-type survey is the potential presence of social desirability (Ho, 2016). Social desirability is the tendency of participants to report an answer in a way that is more socially acceptable than offering a response that is a more true reflection of their opinion/attitude/feeling about a particular topic (Lavrakas, 2008). Participants may succumb to this bias in an effort to project a more favorable image of themselves or to avoid judgment (Ho, 2016). This certainly could have been the case in this study, as participants were often colleagues and even subordinates of the central researcher. To combat this bias anonymity was utilized, as participants did not report their name or any other identifying characteristic when completing the surveys.

The use of Likert-type surveys in this study helps reveal connections between the participants' sense of efficacy (both self-efficacy and collective efficacy) with a particular competency before and after the micro-credentialing experience.

Likert-type surveys were completed by all participants at two points in each semester of the micro-credentialing pilot. They were completed after participants had selected or designed a micro-credential for a particular competency and then again after the micro-credential was submitted for evaluation. The intent was to analyze the participant's sense of efficacy before the micro-credentialing experience and after the experience. The series of survey items are illustrated in: Table 3.2 KSDE Micro-credential Pilot: Self-Efficacy Pre-Survey, Table 3.3 KSDE Micro-credential Pilot: Collective Efficacy Pre-Survey, Table 3.4 KSDE Micro-credential Pilot: Self Efficacy Post-Survey, Table 3.5 KSDE Micro-credential Pilot: Collective Efficacy Post-Survey.

Table 3.2, The Self-Efficacy Pre-Survey, gauged the participants' sense of self-efficacy prior to their active participation in the micro-credential study.

Table 3.2 KSDE Micro-credential Study: Self Efficacy Pre-Survey

KSDE Micro-credential Study: Self-Efficacy Pre-Survey SA = Strongly Agree, A = Agree, NA/ND =Neither Agree/Nor Disagree, D = Disagree, SD = Strongly Disagree					
Statements	SA	A	NA/ND	D	SD
I have a strong knowledge base for this competency due to prior formal professional development.	SA	A	NA/ND	D	SD
I am enthusiastic and willing to learn new competences as a professionally hungry educator.	SA	A	NA/ND	D	SD
I can presently teach students effectively as a result of this competency.	SA	A	NA/ND	D	SD
I already consider myself an expert in this area of competency.	SA	A	NA/ND	D	SD
I feel that I can teach other educators this particular competency.	SA	A	NA/ND	D	SD
I feel empowered based on this competency to make change in my classroom or school.	SA	A	NA/ND	D	SD
I feel that I am respected by my peers based on my competency.	SA	A	NA/ND	D	SD
I feel that I am respected by stakeholders outside of my peers based on my competency.	SA	A	NA/ND	D	SD

Table 3.3, The Collective Efficacy Pre-Survey, gauged the participants' sense of collective efficacy before their active participation in the micro-credential study.

Table 3.3 KSDE Micro-credential Study: Collective Efficacy Pre-Survey

KSDE Micro-credential Study: Collective Efficacy Pre-Survey SA = Strongly Agree, A = Agree, NA/ND =Neither Agree/Nor Disagree, D = Disagree, SD = Strongly Disagree					
Statements	SA	A	NA/ND	D	SD
My teammates have a strong knowledge base for this competency due to prior formal professional development.	SA	A	NA/ND	D	SD
My teammates are as enthusiastic and willing to learn new competencies as I am.	SA	A	NA/ND	D	SD
My teammates can presently teach students effectively as a result of this competency.	SA	A	NA/ND	D	SD
My teammates are experts in this area of competency.	SA	A	NA/ND	D	SD
I feel that my teammates can teach other educators this particular competency.	SA	A	NA/ND	D	SD
Based on their competence in this area, my teammates are empowered to make change in our classrooms and school(s).	SA	A	NA/ND	D	SD
My teammates are respected by their peers based on their competence.	SA	A	NA/ND	D	SD
My teammates are respected by our stakeholders outside of peers based on our competence.	SA	A	NA/ND	D	SD

Table 3.4., The Self-Efficacy Post-Survey, gauged the participants' sense of self-efficacy after their active participation in the micro-credential study.

Table 3.4 KSDE Micro-credential Study: Self-Efficacy Post-Survey

KSDE Micro-credential Study: Self-Efficacy Post-Survey SA = Strongly Agree, A = Agree, NA/ND =Neither Agree/Nor Disagree, D = Disagree, SD = Strongly Disagree					
Statements	SA	A	NA/ND	D	SD
I have a strong knowledge base for this competency due to my micro-credentialing experience.	SA	A	NA/ND	D	SD
I am enthusiastic and willing to learn new competencies as a professionally hungry educator.	SA	A	NA/ND	D	SD
I can now teach students effectively as a result of learning this new competency via micro-credentialing.	SA	A	NA/ND	D	SD
I now consider myself an expert in this area of competency.	SA	A	NA/ND	D	SD
I feel that I can now teach other educators this particular competency.	SA	A	NA/ND	D	SD
I feel empowered based on this competency to make change in my classroom or school.	SA	A	NA/ND	D	SD
I feel that I am respected by my peers based on this particular competency.	SA	A	NA/ND	D	SD
I feel that I am respected by stakeholders outside of my peers based on my competency.	SA	A	NA/ND	D	SD

Table 3.5, The Collective Efficacy Post-Survey, gauged the participants' sense of collective efficacy after their active participation in the micro-credential study.

Table 3.5 KSDE Micro-credential Study: Collective Efficacy Post-Survey

KSDE Micro-credential Study: Collective Efficacy Post-Survey					
SA = Strongly Agree, A = Agree, NA/ND =Neither Agree/Nor Disagree, D = Disagree, SD = Strongly Disagree					
Statements	SA	A	NA/ND	D	SD
My teammates have a strong knowledge base for this competency due their micro-credentialing experience.	SA	A	NA/ND	D	SD
My teammates are as enthusiastic and willing to learn new competencies as I am.	SA	A	NA/ND	D	SD
My teammates can now teach students effectively as a result of this competency.	SA	A	NA/ND	D	SD
My teammates are now experts in this area of competency.	SA	A	NA/ND	D	SD
I feel that my teammates can teach other educators this particular competency.	SA	A	NA/ND	D	SD
Based on their competence in this area, my teammates are empowered to make change in our classrooms and school(s).	SA	A	NA/ND	D	SD
My teammates are respected by their peers based on their competence.	SA	A	NA/ND	D	SD
My teammates are respected by our stakeholders outside of peers based on our competence.	SA	A	NA/ND	D	SD

Interviews

Focus group interviews were also utilized in this study as a means to illustrate a potential relationship with participants' sense of efficacy (both self-efficacy and collective efficacy) and the personalized professional learning experience they shared while engaging in the micro-credentialing study.

Focus group interviews are beneficial in a mixed-methods study such as this because they can serve to verify or clarify the results of previously given questionnaires and/or surveys, and potentially add a human dimension to the impersonal data of questionnaires and/or surveys (Creswell & Plano-Clark, 2007). Focus group interviews pose an advantage over individual interviews as the group itself can spike synergy and spontaneity by encouraging the participants share their perspectives, more deeply explain their feelings, and even disagree with the viewpoints of others, all of which can be revealing to the researcher inquiring into a relationship between participants' personalized learning experience and their sense of efficacy (Carey, 1994; Stewart, Shamdasani, & Rook, 2007). Another advantageous aspect of focus group interviews is that they are useful in obtaining detailed information about personal and group feelings, perceptions, and opinions (Wilkinson, 1998). This is important to this particular study because both personal and group feelings, perceptions, and opinions are consistent with dynamics of both self-efficacy and collective efficacy (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998).

While formally structured questions could illustrate potential relationships between efficacy and micro-credentialing, a semi-structured questioning was the primary methodology for this study as semi-structured questioning is more closely aligned with a practitioner inquiry framework. Semi-structured interviews allow for more candid sharing of experiences as the researcher guiding the conversation becomes an insider, a fellow practitioner who is equally vested in the experience (Kvale, 2007), but at the same time, the researcher can maintain moderate control of the experience and help guide the interview in directions that best support the purpose—inquiring into the personalized professional learning experience and its relationship with educator self-efficacy and educator collective efficacy.

Interviews were facilitated with three different groups of participants. Participants were invited from all aforementioned groups. Volunteers from each of the three groups—Briarwood Elementary School, Countryside Elementary School, Kisiwa Elementary School—were selected to formally participate in the focus group interviews. All volunteers were actively engaged in the

study and seeking re-licensure through this alternative pathway. They consisted of three teachers from Briarwood Elementary School, three teachers from Countrywide Elementary School, and three teachers from Kisiwa Elementary School. All interviews were conducted via Zoom (a digital video-conferencing tool) or via face-to-face meetings and were at a time that was convenient for each group. Each group interview lasted approximately 60 minutes, with each interview being recorded and transcribed via Rev Voice, an iPad application that records and transcribes interviews. Coding was utilized as a method for grouping participants' responses into categories and themes post-transcription (Flick, 2009)

Prior to facilitating the actual interviews, an interview protocol was developed, including a limited number of conversation-sparking questions, which made the interviews semi-structured in their design. Interviews began with a restatement of the purpose of the study and followed up by general questions, promoting discussion about the participants' experience during the micro-credentialing study. Questions can be found in Appendix A. The questions were developed and facilitated in semi-structured manner. Questions probed into the participants feelings of "confidence, trust, and empowerment," all of which are criteria associated with efficacy (Tschannen-Moran, Woolfolk Hoy & Hoy 1998). Questions were framed around participants' feelings before and after the micro-credentialing experience, as according to Bandura (1994), the most effective way of creating a strong sense of efficacy is through mastery experiences. Micro-credentialing aims at building one's mastery of a particular pedagogical competency through job-embedded practice (DiSalvio, 2016). Bandura (1994) asserts that an additional avenue for creating and strengthening efficacy beliefs is through the vicarious experiences provided by social models. "Seeing people similar to oneself succeed by sustained effort" spikes teammates' belief that they, too, possess the capability of mastering comparable competencies (Bandura, 1994, p 72). This finding led to the creation of several questions that related to the "group micro" experience, as the majority of participants completed their micro-credentials in teams and followed by contributions in small group discussions both face-to-face at staff meetings and through digital platforms.

Artifacts

As a part of the study, each participant was required to submit their work at the end of each semester/completion of the micro-credential. The expectations for the submissions were that they included the components are detailed below in Table 3.1. The components read as

directions to the participant. The components are similar for participants who submitted micro-credentials via Bloomboard and via the Create-Your-Own model

Table 3.6 Create-Your-Own Submission Criteria

Overview	Please summarize the project you facilitated with staff or students. Include details related to rationale, teammates (who and why), timeline for completion, and the vision statement supporting the work. “If I/we successfully _____, then students will _____.”
Research/Professional Literature	What research/professional literature guided your work? Please cite resources and explain their significance in guiding your work. For each resource, list it as a citation and describe its importance to your work in two-three sentences.
The Work	Please further detail the action steps for the completion of the project. How was the project introduced to students and/or staff? How was it implemented/facilitated?
Limitations/Obstacles	Were there any unavoidable obstacles that limited the integrity of the project?
Artifacts Supporting the Work	Please upload lesson plans, examples of communication, pictures or video of students or staff actively engaging in the project. Please submit three or more artifacts.
Reflection	Was the project’s vision realized? Yes? Why and what evidence supports that? No? Why and what evidence supports that conclusion? Please indicate your individual perceptions, your teammates’ perceptions, and that of students if applicable.
Reflection	What is key to sustaining this project’s impact? What must be done differently to enhance this project’s impact?
Share and Connect	What are TWO ways in which you can share this project and influence others? Please detail what, why, and how.

Means of Data Analysis

Through mixed methods research multiple data were gathered as a reflection of participants' feelings of efficacy while engaged in the micro-credentialing study. The data included responses to Likert-type surveys, focus group interviews and artifacts in the form of the micro-credential submissions.

For each of these methods, certain processes and techniques were implemented. These processes and techniques were chosen based on the work of Burton and Mazerolle (2011) deMarrais (2004), Potter and Hepburn (2012), Moustakas (1994), and Flick (2009).

Surveys: Survey research can be very helpful in that it assists the researcher in a generalization of results as well as providing respondents the freedom to complete the instrument at a time that is convenient for them (Burton a& Mazerolle 2011). An additional and more significant benefit to survey research is the ability to measure latent constructs, variables that cannot be directly observed, for example, an educator's sense of efficacy. When facilitating surveys, it is important to follow particular guidelines and processes. The following guidelines were utilized in this study.

1. Define constructs, for example, self-efficacy and collective efficacy, that will be measured by the survey. In this study, these constructs were collaboratively defined by the researcher with his dissertation committee and the Professional Standards Board
2. After definitions are established for constructs, item generation begins. In the case of this study, an appropriate scale did not previously exist, as the survey items needed to pertain uniquely to the participants' micro-credentialing experience and their sense of efficacy before and after the experience. When an appropriate scale does not exist, it is best practice to use a panel of practitioners (in this case, the central researcher's dissertation committee and the Professional Standards Board) to assist in developing and, at minimum reviewing the items to ensure that they measure each construct that the researcher plans to investigate.

3. Researchers utilizing surveys must take into consideration data analysis when developing items. Because this is a mixed methods study and interviews and artifact analysis lent the gathering of open-ended responses and interpretive evidence, the survey items were written using a five-point Likert-type scale.
4. Survey items need to be logically sequenced, framed using neutral language, non-leading, and not an underestimation of the participant's knowledge.

A statistical analysis of percentage of respondents for each category was calculated for each survey: Self-Efficacy Pre Survey, Self-Efficacy Post-Survey, Collective Efficacy Pre-Survey, Collective Efficacy Post-Survey. A comparison of these percentages pre-survey data versus the post-survey data was made for both Self-Efficacy and Collective Efficacy. The comparison of the percentages was used as a pathway to exploring the relationship between efficacy and a personalized learning experience like micro-credentialing.

Interviews: The purpose of qualitative interviews is to uncover ambiguities and resolve them through a social construction of meaning (deMarrais, 2004). The researcher and the researched are actively involved with each other, naturally creating a inter-subjective process. When engaging in qualitative interviews it is important that the following components are in place:

1. An understanding that the relationships with the participants is important to the process.
2. Selecting participants is crucial and the process should have set steps/criteria.
3. Semi-structured but conversational interviews are beneficial to the revelation of authentic thoughts and feelings. Likewise, questions should be open-ended, allowing for discourse, including both real-time follow-up questions by the interviewer as well as flexibility for the interview to organically elaborate.

4. Bracketing improves the validity of the process. Bracketing involves the researcher identifying subjectivity and consciously setting it aside.

Potter and Hepburn (2012). Just as important to the facilitation of an interview is the reporting of the data gleaned from the interview. Certain criteria must be embraced and certain challenges must be anticipated. Some of these challenges include:

1. Flooding: The analysis process must not be flooded by a hidden agenda, whether it is a personal agenda of the researcher or a transcending social agenda.
2. Footing: Certain structures or positioning should be eliminated from the process. When structures or power positioning are in play, it prevents the respondents from being open and honest.
3. Stake or Interest: It is natural for a researcher to care deeply about the topic that he/she is researching. It is also natural that the respondent cares very little about the same topic. In both cases, the researcher and the respondents must be aware of the other's passion for/interest in the topic. An overabundance of enthusiasm or the lack thereof can discourage discourse.
4. Assumptions: Much like the facilitation of interviews, bracketing is an essential process to interview reporting. Assumptions and perceptions must be bracketed and statements such as "I feel" must be framed differently in order to maintain objectivity.

Artifacts: Moustakas (1994) contends that the following processes are crucial to interpreting data gleaned from journals. These same recommendations can be made for the analysis of artifacts like the micro-credential submissions in this study.

1. Themes and groupings should be listed early in the process and adapted as new findings are uncovered.

2. Reduction and elimination are two helpful processes when sifting through literal details.
3. Clusters and themes will show commonalities.
4. Use “individual” structural descriptions first; then use textual structural descriptions to find deeper meaning.
5. Personal experience can be incorporated when appropriate but must be monitored for subjectivity.
6. Horizontalization helps the researcher understand and leverage the fact that each statement holds equal value and contributes to the meaning of the data.

Coding is an efficient data analysis method because it can be used for both interviews and artifacts, offering the researcher a more systematic approach to gathering data (Flick 2009). Here are the guiding processes to coding:

1. Artifacts and interview transcripts are first highlighted with *codes*. Each code provides a meaning specific to an aspect of the study, that is what the study has uncovered. An example might be if a respondent frequently mentioned the word “confident.” “Confident” would become a code, one that would be highlighted throughout.
2. Codes are grouped according to *categories*. For example, the “confident” code may be grouped together when the word was used when describing the respondent’s individual practice of a new skill and again when reflecting on his/her perception of his colleagues. “Self-Confidence” and “Confidence in Others” would become *categories*. A diverse assortment of multiple *categories* emerges in data analysis process.
3. *Categories* are next grouped into *themes*. If a category reveals that the respondent was experiencing an increase of confidence in his/her Professional Learning Community when analyzing formative assessment data at the end of the unit designed during the micro-credential process, the theme may be: *The group micro-credential experience impacted the confidence Respondent A had in his/her PLC teammates.*
4. Once an adequate number of themes are gathered, a framework is created for writing, in detail, about the experience and the findings it has uncovered. This writing becomes the heart of a journal article or, in this case, Chapter 4 of a dissertation.

Chapter 4: Analysis of Data/Findings

Introduction and Purpose

The Kansas State Department of Education has rebranded our educational system with the Kansans Can vision of “leading the world in the success of each student” (Kansas State Department of Education, 2015). At the core of the Kansans Can vision is the challenge for Kansas educators, administrators, policy-makers and citizens, in general, to redesign how our schools operate, analyzing every requirement to determine if it is a support or impediment to our schools’ ability to address the needs of each student (Kansans Can: Talking Points, 2017). The same challenge, this same decry to redesign how we go about the business of school, should be made for Kansas educators. Every requirement (for example, educator re-licensure) should be analyzed to determine if it is a support or impediment to our schools’ ability to address the professional learning needs of each educator. If educators are expected to redesign the way they conduct business as professionals in the classroom, then the way they are credentialed should also reflect redesign. At the heart of this study is an examination of an alternative re-licensure pathway, which leverages personalized professional learning in the form of micro-credentials. If personalized professional learning is going to establish itself as an alternative pathway to re-licensure, then it must be substantiated as an impactful learning experience. To examine the impact personalized learning has on educators, the central researcher explored the relationship between micro-credentialing and educator efficacy.

Research Questions and Hypotheses

The relationship between personalized professional learning and educator efficacy was explored through a mixed-methods study, employing surveys, interviews, and artifact analysis. The mixed-methods study was designed around the following questions and research instruments/data sources:

Questions	Data Sources
<p>What examples of self-efficacy do educators evince after completing micro-credentials as a part of a re-licensure pathway?</p>	<ul style="list-style-type: none"> • Self-Efficacy Post-Survey responses, • Focus Group Interviews • Artifacts (submissions to Bloomboard and Create-Your-Own)
<p>What examples of collective-efficacy do educators evince after completing micro-credentials as part of a re-licensure pathway?</p>	<ul style="list-style-type: none"> • Collective-Efficacy Post-Survey responses, • Focus Group Interviews • Artifacts (submissions to Bloomboard and Create-Your-Own)
<p>What relationship exists between micro-credentialing as a personalized professional learning experience and educator efficacy?</p>	<ul style="list-style-type: none"> • Efficacy Survey Responses • Focus Group Interviews • Artifacts (submissions to Bloomboard and Create Your Own) • Reflection

The hypothesis at the core of the study was that educator efficacy—both self-efficacy and collective efficacy—is connected to personalized professional learning. An additional hypothesis is that the aforementioned positive attributes of personalized professional learning will be shared by the participants and micro-credentials will be recommended as a worthwhile learning experience, one that should/could equate to educator re-licensure.

Rationale for Methods

It was important to leverage multiple measures that were convenient for participants, yet provided the necessary depth to uncover potential connections between educator efficacy and personalized professional learning. The surveys indicated changes in both self-efficacy and collective efficacy after the personalized professional learning experience in the form of a micro-credentialing study. The surveys were convenient for participants to complete, as they were available via digital tools and accessible at any time during their participation, thus making this

measure, not only beneficial in the data it produced, but also respectful of the participants' time and efforts. The interviews and artifact analysis allowed for a deeper, richer, more personalized examination of the participants' perceptions of the personalized professional learning experience. While these measures were more time-intensive and energy-demanding, the results were robust and revealed themes connected to the original research hypotheses.

Quantitative Findings

Forty-four participants completed the Self-Efficacy surveys and 41 participants completed the Collective Efficacy surveys. The discrepancy in number of completed surveys is not objectively known, however, the central researcher surmises that a few participants, within the KSDE Micro-credentialing One-Stop-Shop Google sheet, simply overlooked the Collective Efficacy links.

Percentages for each Likert-type category were calculated for each survey item. The statistical tools within Google forms computed these percentages. Below are tables reflecting these percentages for each of the following surveys: Self-Efficacy Pre-Survey (4.1), Self-Efficacy Post-Survey (4.2), Collective Efficacy Pre-Survey (4.3), and Collective Efficacy Post-Survey (4.4).

Table 4.1 illustrates participants' responses to the self-efficacy survey items prior to their micro-credentialing experience.

Table 4.1 Self-Efficacy Pre-Survey Results (n = 44)

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I have a strong knowledge base for this competency due to prior formal professional development.	2.3%	38.6%	13.6%	43.2%	2.3%
I am enthusiastic and willing to learn new competencies as a professionally hungry educator.	2.3%	0%	4.5%	56.8%	36.4%
I can presently teach students effectively as a result of this competency.	2.3%	2.3%	45.5%	45.5%	4.5%
I already consider myself an expert in this area of competency.	0%	68.2%	18.2%	13.6%	0%
I feel that I can teach other educators this particular competency.	4.5%	52.3%	18.0%	25.0%	0%
I feel empowered based on this competency to make change in my classroom or school.	0%	6.8%	9.1%	54.5%	29.5%
I feel that I am respected by my peers based on my competency.	0%	6.8%	27.3%	63.6%	2.3%
I feel that I am respected by stakeholders outside of my peers based on my competency.	0%	11.4%	34.1%	52.3%	2.3%

Table 4.2 illustrates participants' responses to the self-efficacy survey items after their micro-credentialing experience.

Table 4.2 Self-Efficacy Post-Survey (n = 44)

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I have a strong knowledge base for this competency due to my micro-credentialing experience	0%	0%	12.5%	62.5%	25.0%
I am enthusiastic and willing to learn new competencies as a professionally hungry educator.	0%	0%	0%	54.2%	35.8%
I can now teach students effectively as a result of learning this competency via micro-credentialing.	0%	0%	8.3%	54.2%	37.5%
I now consider myself an expert in this area of competency.	0%	12.5%	25.0%	50.0%	12.5%
I feel that I can now teach other educators this particular competency.	0%	0%	25.0%	45.8%	29.2%
I feel empowered based on this competency to make change in my classroom or school.	0%	0%	0%	62.5%	37.5%
I feel that I am respected by my peers based on my competency.	0%	0%	29.2%	45.8%	25.0%
I feel that I am respected by stakeholders outside of my peers based on my competency.	0%	4.2%	33.3%	37.5%	25.0%

Table 4.3 illustrates participants' responses to the collective-efficacy survey items prior to their micro-credentialing experience.

Table 4.3 Collective Efficacy Pre-Survey Results (n = 41)

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
My teammates have a strong knowledge base for this competency due to prior formal professional development.	5.0%	27.5%	30.0%	30.0%	5.0%
My teammates are as enthusiastic and willing to learn new competencies as I am.	0%	2.5%	15.0%	52.5%	30.0%
My teammates can presently teach students effectively as a result of this competency.	0%	5.0%	60.0%	32.5%	2.5%
My teammates are experts in this area of competency.	2.5%	40.0%	37.5%	17.5%	2.5%
I feel that my teammates can teach other educators this particular competency.	0%	25.0%	45.0%	25.0%	5.0%
Based on this competency, my teammates are empowered to make change in their classrooms or school.	0%	5.0%	25.0%	45.0%	25.0%
My teammates are respected by their peers based on this competency.	0%	5.0%	20.0%	57.5%	17.5%
My teammates are respected by their stakeholders outside of peers based on their competence.	0%	7.5%	25.0%	55.0%	12.0%

Table 4.4 illustrates participants’ responses to the collective-efficacy survey items after their micro-credentialing experience.

Table 4.4 Collective Efficacy Post-Survey Results (n = 41)

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
My teammates have a strong knowledge base for this competency due to their micro-credentialing experience.	0%	0%	33.3%	52.4%	14.3%
My teammates are as enthusiastic and willing to learn new competencies as I am.	0%	4.7%	14.3%	66.7%	14.3%
My teammates can presently teach students effectively as a result of this competency.	0%	0%	19%	61.9%	19%
My teammates are experts in this area of competency.	0%	9.1%	22.7%	54.5%	13.6%
I feel that my teammates can teach other educators this particular competency.	0%	4.8%	23.8%	33.3%	38.1%
Based on this competency, my teammates are empowered to make change in their classrooms or school.	0%	0%	14.3%	52.4%	33.3%
My teammates are respected by their peers based on this competency.	0%	0%	28.6%	47.6%	23.8%
My teammates are respected by their stakeholders outside of peers based on their competence.	0%	0%	42.9%	42.9%	14.3%

These tables provide a holistic look at perceptions participants had of their self-efficacy and their teams’ collective efficacy. The tables show a sizeable shift toward “agree” and “strongly agree” from “disagree” and “strongly disagree” for a number of items, all of which are representative of dynamics related to efficacy—confidence, enthusiasm, perceived expertise, et cetera.

An in-depth examination of each item—pre and post—is shared below. The purpose of examining each item is to illustrate the changes in educators’ feelings of efficacy and which dynamics of efficacy were most impacted by the personalized professional learning experience of micro-credentialing

Self-Efficacy: Statement-by-Statement Analysis

Table 4.5 Self-Efficacy Item #1

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey I have a strong knowledge base for this competency due to prior formal professional development.	40.9%	45.5%
Post-Survey I have a strong knowledge base for this competency due to my micro-credentialing experience	0.0%	87.5%
Change in SD and D Pre and Post	-40.9%	
Change in SA and A Pre and Post		+42.0%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect a significant shift in perception as it pertains to “knowledge base” as an element of educator self-efficacy. No participants disagreed with the statement “I have a strong knowledge base for this competency due to my micro-credentialing experience” and 42% more participants agreed to the statement post micro-credentialing experience. This data indicates that a personalized professional learning experience like micro-credentialing is connected to one’s perception of a strengthening knowledge base, a key ingredient to educator efficacy, as stated in the previously shared operational definition for self-efficacy.

Table 4.6 Self-Efficacy Item #2

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey I am enthusiastic and willing to learn new competencies as a professionally hungry educator.	2.3%	93.2%
Post-Survey I am enthusiastic and willing to learn new competencies as a professionally hungry educator.	0.0%	90.0%
Change in SD and D Pre and Post	-2.3%	
Change in SA and A Pre and Post		-3.2%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect an insignificant shift in perception as it pertains to “enthusiasm” and “willingness to learn” as elements of educator self-efficacy. There was a slight decrease in the percentage of educators who agreed to the statement of “I am enthusiastic and willing to learn new competencies as a professional hungry educator.” The researcher is not surmising that micro-credentialing negatively impacts “enthusiasm” and “willingness to learn,” but the data gleaned does show that there is little to no connection between personalized learning and enhancing “enthusiasm” and “willingness to learn,” two components of educator self-efficacy as stated in the previously shared operational definition.

Table 4.7 Self-Efficacy Item #3

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey I can presently teach students effectively as a result of this competency.	4.6%	50.0%
Post-Survey I can now teach students effectively as a result of learning this competency via micro-credentialing.	0.0%	91.7%
Change in SD and D Pre and Post	-4.6%	
Change in SA and A Pre and Post		+41.7%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect a significant shift in perception as it pertains to one’s ability to “teach students effectively as a result of learning this competency via micro-credentialing.” No participants disagreed with the statement “I can now teach students effectively as a result of learning this competency via micro-credentialing” and 41.7% more participants agreed to the statement post experience. This data indicates that a personalized professional learning experience like micro-credentialing is connected to one’s perception of his/her ability to teach students effectively, a key ingredient to educator self-efficacy, as stated in the previously shared operational definition.

Table 4.8 Self-Efficacy Item #4

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey I already consider myself an expert in this area of competency.	72.	13.6%
Post-Survey I now consider myself an expert in this area of competency.	12.5%	72.5%
Change in SD and D Pre and Post	-55.7%	
Change in SA and A Pre and Post		+58.9

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect a significant shift in perception as it pertains to one's perception of himself/herself as "an expert" in the area of competency that he/she focused on in the micro-credentialing experience. Nearly 59% more educators felt that they were "experts in this area of competency" post-experience. This data indicates that a personalized professional learning experience like micro-credentialing is connected to one's perception of "expertise," which is a key component of educator self-efficacy, as delineated in the previously shared operational definition.

Table 4.9 Self-Efficacy Item #5

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey I feel like I can teach others this particular competency.	56.8%	25.0%
Post-Survey I feel like I can now teach others this particular competency.	0.0%	75.0%
Change in SD and D Pre and Post	-56.8%	
Change in SA and A Pre and Post		+50.0%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect a significant shift in perception as it pertains to one’s belief that he/she can now “teach others this particular competency.” No participants disagreed with the statement “I can now teach others this particular competency” as a result of the micro-credentialing experience and 50.0% more participants agreed to the statement post experience. This data indicates that a personalized professional learning experience like micro-credentialing is connected to one’s belief that he/she can teach other educators, a key ingredient to educator self-efficacy, as stated in the previously shared operational definition.

Table 4.10 Self-Efficacy Item #6

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey I feel empowered based on this competency to make change in my classroom or school.	6.8%	84.0%
Post-Survey I feel empowered based on this competency to make change in my classroom or school.	0.0%	100.0%
Change in SD and D Pre and Post	-6.8%	
Change in SA and A Pre and Post		+16%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect an insignificant shift in perception as it pertains educators' sense of "empowerment to make change." While there were zero educators that disagreed with the statement "I feel empowered based on this competency to make change in my classroom or school," there was only a small increase of 16% more educators who changed from disagreeing to agreeing, as in feeling more empowered to make change after their micro-credentialing experience. The data gleaned shows little to no connection between personalized learning and enhancing educator's sense of "empowerment to make change," a component of educator self-efficacy as stated in the previously shared operational definition.

Table 4.11 Self-Efficacy Item #7

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey I feel that I am respected by my peers based on my competency.	6.8%	65.9%
Post-Survey I feel that I am respected by my peers based on this particular competency.	0.0%	70.8%
Change in SD and D Pre and Post	-6.8%	
Change in SA and A Pre and Post		+4.9%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect an insignificant shift in perception as it pertains to an educator's perception of being "respected by his/her peers." After the micro-credentialing experience, there was a slight decrease in the percentage of educators who agreed to the statement of "I feel that I am respected by my peers based on my competency" The researcher is not surmising that micro-credentialing negatively impacts one's feeling of being respected by his/her peers, but the data gleaned does show that there is little to no connection between personalized professional learning and enhancing one's sense of "being respected" by peers, another component of educator self-efficacy as stated in the previously shared operational definition.

Table 4.12 Self-Efficacy Item #8

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey I feel that I am respected by stakeholders outside of my peers based on my competency.	11.4%	54.6%
Post-Survey I feel that I am respected by stakeholders outside of my peers based on my competency.	4.2%	62.5%
Change in SD and D Pre and Post	-7.2%	
Change in SA and A Pre and Post		+7.9%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect an insignificant shift in perception as it pertains to an educator’s perception of being “respected by stakeholders outside of his/her peers.” After the micro-credentialing experience, there was only a slight increase in the percentage of educators who agreed to the statement of “I feel that I am respected by my stakeholders outside of my peers.” The data gleaned show that there is little to no connection between personalized learning and enhancing one’s sense of being “respected by stakeholders outside of his/her peers,” another component of educator self-efficacy as stated in the previously shared operational definition.

Summary

The survey data indicated a significant positive relationship between personalized professional learning (in the form of micro-credentialing) and the following elements of educator self-efficacy:

- Enhanced knowledge base
- Ability to more effectively teach students
- Sense of expertise in an area of competency
- Ability to teach peers a newly learned competency

The survey data indicated little to no relationship between personalized professional learning (in the form of micro-credentialing) and the following elements of educator self-efficacy:

- Enthusiasm and willingness to learn
- Empowerment to make change
- Belief that peers respect you
- Belief that stakeholders outside of peers respect you

Collective Efficacy: Statement Analysis

Table 4.13 Collective Efficacy Item #1

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey My teammates have a strong knowledge base for this competency due to prior formal professional development.	32.5%	35.0%
Post-Survey My teammates have a strong knowledge base for this competency due to their micro-credentialing experience.	0.0%	66.7%
Change in SD and D Pre and Post	-32.5%	
Change in SA and A Pre and Post		+31.7%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect a significant shift in perception as it pertains to “teammates’ knowledge base” as an element of educator collective efficacy. No participants disagreed with the statement “My teammates have a strong knowledge for this competency due to their micro-credentialing experience” and 31.7% more participants agreed to the statement post experience. This data indicates that a personalized professional learning experience like micro-credentialing is connected to one’s perception of a strengthening knowledge base among his/her teammates, a key ingredient to educator collective efficacy, as stated in the previously shared operational definition for collective efficacy.

Table 4.14 Collective Efficacy Item #2

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey My teammates are as enthusiastic and willing to learn new competencies as I am.	2.5%	82.5%
Post-Survey My teammates are as enthusiastic and willing to learn new competencies as I am.	4.7%	81.0%
Change in SD and D Pre and Post	+2.2%	
Change in SA and A Pre and Post		-1.5%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect an insignificant shift in perception as it pertains to one’s sense of his/her teammates’ “enthusiasm” and “willingness to learn” as elements of educator collective efficacy. There was a slight decrease in the percentage of educators who agreed to the statement of “My teammates are as enthusiastic and willing to learn new competencies as I am” after the micro-credentialing experience. The researcher is not surmising that micro-credentialing negatively impacts one’s perception of his/her teammates’ “enthusiasm” and “willingness to learn,” but the data gleaned does show that there is little to no connection between personalized professional learning and enhancing one’s perception of his/her teammates’ “enthusiasm” and “willingness to learn,” two components of educator collective efficacy as stated in the previously shared operational definition.

Table 4.15 Collective Efficacy Item #3

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey My teammates can presently teach students effectively as a result of this competency.	5.0%	35.0%
Post-Survey My teammates can now teach students effectively as a result of this competency.	0.0%	80.9%
Change in SD and D Pre and Post	-5.0%	
Change in SA and A Pre and Post		+45.9%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect a significant shift in perception as it pertains to one’s perception of his/her teammates’ ability to “teach students effectively as a result of learning this competency via micro-credentialing.” No participants disagreed that with the statement “my teammates can now teach students effectively as a result of this competency” and 45.9% more participants agreed to the statement post experience. This data indicates that a personalized professional learning experience like micro-credentialing is connected to one’s perception of his/her teammates’ ability teach students effectively, a key ingredient to educator collective efficacy, as stated in the previously shared operational definition.

Table 4.16 Collective Efficacy Item #4

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey My teammates are experts in this area of competency.	42.5%	19.7%
Post-Survey My teammates are experts in this area of competency.	9.1%	68.1%
Change in SD and D Pre and Post	-33.4%	
Change in SA and A Pre and Post		+48.4%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect a significant shift in perception as it pertains to one’s perception of his/her teammates as “experts” in the area of competency that they focused on in the micro-credentialing experience. More educators, 48.4% more educators, felt that their teammates were “experts in this area of competency” post experience. This data indicates that a personalized professional learning experience like micro-credentialing is connected to one’s perception of his/her teammates as “experts,” which is a key component of educator collective efficacy, as delineated in the previously shared operational definition.

Table 4.17 Collective Efficacy Item #5

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey I feel like my teammates can teach other educators this particular competency.	25.0%	30.0%
Post-Survey I feel like my teammates can teach other educators this particular competency.	4.8%	71.4%
Change in SD and D Pre and Post	-20.2%	
Change in SA and A Pre and Post		+41.4%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect a significant shift in perception as it pertains to one’s belief that his/her “teammates can teach other educators.” More participants, 41.4% more participants, agreed to the statement “I feel like my teammates can teach other educators this particular competency” post experience. This data indicates that a personalized professional learning experience like micro-credentialing is connected to one’s belief his/her teammates can teach other educators, a key ingredient to educator collective efficacy, as stated in the previously shared operational definition.

Table 4.18 Collective Efficacy Item #6

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey Based on this competency, my teammates are empowered to make change in their classrooms or school.	5.0%	70.0%
Post-Survey Based on this competency, my teammates are empowered to make change in their classrooms or school.	0.0%	85.7%
Change in SD and D Pre and Post	-5.0%	
Change in SA and A Pre and Post		+15.7%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect an insignificant shift in perception as it pertains educators sense of collective “empowerment to make change.” While there were zero educators that disagreed with the statement “Based on this competency, my teammates are empowered to make change in their classrooms or school” there was only a small increase of 15.7% more educators who changed from disagreeing to agreeing, as in feeling a heightened sense of collective empowerment to make change after their micro-credentialing experience. The data gleaned shows little to no connection between personalized learning and enhancing educator’s sense of collective “empowerment to make change,” a component of educator collective efficacy as stated in the previously shared operational definition.

Table 4.19 Collective Efficacy Item #7

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey My teammates are respected by their peers based on this competency.	5.0%	75.0%
Post-Survey My teammates are respected by their peers based on this competency.	0.0%	71.4%
Change in SD and D Pre and Post	-5.0%	
Change in SA and A Pre and Post		-3.6%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect an insignificant shift in perception as it pertains to an educator’s perception of teammates being “respected by their peers.” After the micro-credentialing experience, there was a slight decrease in the percentage of educators who agreed to the statement of “My teammates are respected by their peers based on this competency.” The researcher is not surmising that micro-credentialing leads to educators believing that their teammates are less respected by their peers, but the data gleaned does show that there is little to no connection between personalized professional learning and enhancing one’s sense of “being respected by peers,” another component of educator collective efficacy as stated in the previously shared operational definition.

Table 4.20 Collective Efficacy Item #8

Statement	Percentage of SD and D	Percentage of A and SA
Pre-Survey My teammates are respected by stakeholders outside of peers based on this competency.	7.5%	67.0%
Post-Survey My teammates are respected by stakeholders outside of peers based on this competency.	0.0%	57.2%
Change in SD and D Pre and Post	-7.5%	
Change in SA and A Pre and Post		-9.8%

Statement Analysis

The changes in the categories of strongly disagree/disagree and strongly agree/agree reflect an insignificant shift in perception as it pertains to an educator’s perception of his/her teammates being “respected by stakeholders outside of his/her peers.” After the micro-credentialing experience, there was a slight decline in the percentage of educators who agreed to the statement of “my teammates are respected by stakeholders outside of peers based on this competency.” The researcher is not surmising that micro-credentialing leads to educators believing that their teammates are less respected by stakeholders outside of peers, but the data gleaned does show that there is little to no connection between personalized learning and “being

respected by stakeholders outside of peers,” another component of educator collective efficacy as stated in the previously shared operational definition.

Summary

The survey data indicated a significant positive relationship between personalized professional learning (in the form of micro-credentialing) and the following elements of educator collective-efficacy:

- Enhanced knowledge base of teammates
- Teammates’ ability to more effectively teach students
- Sense of teammates’ expertise in an area of competency
- Ability of teammates to teach peers a newly learned competency

The survey data indicated little to no relationship between personalized professional learning (in the form of micro-credentialing) and the following elements of educator collective-efficacy:

- Teammates’ enthusiasm and willingness to learn
- Teammates’ empowerment to make change
- Teammates’ respect among their peers
- Teammates’ respect among stakeholders outside of other educators

Overall Summary of Quantitative Results

Interestingly, the findings from all surveys yielded similar results. The surveys indicate a relationship between personalized professional learning (in the form of micro-credentialing) and educator efficacy, both self-efficacy and collective efficacy. This relationship is specific to particular elements of educator efficacy, as shared in the operational definitions in Chapter 1.

Hattie (2016) and Moran, Hoy, and Hoy (1998) explain efficacy through the lens of competence, confidence, and the belief that one can execute specific the responsibilities that pertain to effective teaching. Allinder (1994) expands the idea of educator efficacy to include the belief that his/her teaching competence in teaching methods will invariably lead to

successfully meeting the needs of students. As it pertains to these elements of educator efficacy, personalized professional learning, in this study, shows a positive relationship. Participants shared an increased belief in their strengthening knowledge base and that of their peers after their micro-credentialing experience. Participants shared a greater feeling of expertise—both their own and that of their peers—after their micro-credentialing experience. Feeling a greater sense of expertise for themselves and for their peers directly related to their increased belief in their ability to both teach students and each other more effectively after their micro-credentialing experience. Growth in these elements of efficacy—confidence, competence, expertise, more effective teaching of students, and increased ability to teach peers—was apparent in both sets of surveys.

Stephanou, Gkavras, and Doulkeridou (2013) relate efficacy to positive feelings about one's work like empowerment, hope, and pleasure. Ross and Gray (2006) contend that efficacious educators are more enthusiastic and willing to learn new skills. Within these elements of efficacy, personalized professional learning showed little to no connection. Participants did not share a significant change in perceptions of empowerment or greater feelings of respect, nor did they share any growth in their enthusiasm and willingness to learn new ideas. This lack of growth was consistent in all surveys.

Based on the data collected in the surveys, efficacy is connected to personalized professional learning, as it pertains to specific elements of both self-efficacy and collective efficacy. Personalized professional learning could be leveraged to enhance educators' knowledge base as it relates to a specific competency, spike teachers' confidence in their ability to effectively meet the needs of students, as well as generate teacher leaders, capable of teaching their peers new competencies. Based on the findings of this study, personalized professional learning might not be an effective tool in enhancing educators' feelings of empowerment, respect, and enthusiasm and willingness to learn new ideas.

In Chapter 5, these findings will be explored more comprehensively as it relates to the immediate and long-term implications personalized professional learning has for both professional development of educators, as well as educator re-licensure.

Qualitative Findings

Focus Group Interviews

Three different groups of participants were selected for three different focus group interviews. Each group consisted of three participants. The groups were Briarwood Elementary School, Countryside Elementary School, and Kisiwa Elementary School. The participants taught grade levels ranging from Kindergarten to Fourth Grade or were specialists like English as a Second Language (ESOL) teachers or Guidance Counselors. Participants ranged from educators in their first 5-10 years in the profession to educators with 25 or more years of experience. Each interview was conducted either in-person or digitally through Zoom, a digital tool for video-conferencing, and lasted approximately one-hour in length. Questions were semi-structured and the interview was recorded and transcribed through Rev, a recording application for Apple iPad.

For each focus group interview, the transcripts were reviewed by the researcher and coded for examples of efficacy via the first cycle of coding. The first cycle of coding while important and helpful was not sufficient. Coding is rarely successful in a singular attempt and often requires multiple cycles for themes to emerge (Saldana, 2016). This was accurate in this study, thus the central researcher engaged in a second cycle of coding to generate categories and themes. Through this second cycle of coding, categories were revealed and then analyzed based on their connection to the elements of educator efficacy as delineated in the previously shared operational definitions. The categories were grouped and depicted in charts and color-coded for an additional layer of classification. Through these categories, themes were revealed, which will be at the basis of theories supporting the original hypotheses. Saldana's (2016) streamlined codes-to-theory model was helpful as the researcher moved from codes to categories to themes to theories.

In this section, each group interview will be explained through a within-case analysis revealing themes that emerged during each interview, followed by a cross-case analysis where similarities and differences in the findings among the three different interviews will be explored. Themes most consistent with the operational definitions for educator efficacy included:

- Competence—one's knowledge base and skill set related to the particular focus of the micro-credential

- Confidence to Impact Students—one’s belief that he/she can effectively teach students, influence their learning
- Confidence to Impact Teammates—one’s belief that he/she can effectively teach others, influence their practice
- Empowerment—one’s belief that he/she can make change and inspire it in his/her team or school

Briarwood Elementary: Focus Group Interview

In an effort to organize and effectively illustrate participants’ responses in connection to the aforementioned themes, a table was created with the themes as categories and then coded as SE (as well as highlighted green) for an element consistent with self-efficacy and CE (as well as highlighted yellow) for an element consistent with collective efficacy. The participants interviewed engaged in three separate micro-credentials. A school counselor completed a Bloomboard micro-credential on mindfulness. A kindergarten teacher created her own micro-credential for the implementation of morning meetings. A fourth grade teacher created a micro-credential with her grade level peers around their development and facilitation of a summer literacy program where they opened up their classroom libraries to students over the summer.

Table 4.21 delineates the Briarwood Elementary School participants’ responses according to efficacy themes.

Table 4.21 Participants’ Responses Coded in Efficacy Themes for Briarwood Elementary School Participants

Competence	Confidence to Impact Students	Confidence to Impact Teammates	Empowerment
I was going through the motions of morning meetings pre-micro. Now I really know how important each component is and what I can adapt to maximize learning for my students. (SE)	I know I’m confident in mindfulness because I am always so excited to work with kids on it. (SE)	I can definitely teach others the competency of mindfulness. (SE)	I feel more empowered to try new tools even if my initial comfort level is not there. (SE)
	During my micro, I was constantly talking to my peers and with my students about my learning. (SE)	I have presented a state conference on how to develop a summer literacy program that involves opening up my classroom library. (SE)	I have influenced grade teammates to do morning meetings. We are now doing them at the same time each day and all our kids are benefitting. (CE)
	I already have a second summer literacy program planned for this summer. (SE)	I have taught teammates at my building and outside my building, mindfulness techniques. (SE)	Post-micro, I am a better role model for literacy. (SE)
	Morning meetings are my secret weapon! (SE)		I no longer feel overshadowed by my co-teacher who is a reading teacher powerhouse. (SE)
			Kids connect my mindfulness chime with me. It has become a part of my identity in their eyes. I’m a calm presence in their eyes and have that reputation in the building. (SE)

In analyzing these results, it is apparent that a consistent connection between micro-credentialing as a personalized professional learning experience and educator self-efficacy exists, especially within the themes of “confidence to impact students” and “confidence to impact teammates.” A connection to collective efficacy manifested in pockets with strong statements about influencing teammates to implement strategies and feeling confident in their effectiveness, however, overall, it was not significantly apparent according to the participants’ responses. A

hypothesis related to why self-efficacy was more strongly apparent than collective efficacy is that self-efficacy is enhanced at a greater level when participants engage in micro-credentialing as individuals as opposed to engaging in micro-credentialing in teams. All three of the participants engaged in separate micro-credentials, two by themselves and one with just one grade level peer.

The comments related to participants seeing themselves as “role models” for their learning and connecting their learning with their “identity” are fascinating and unplanned discoveries. When one is feeling like a role model or connects his/her learning with his/her identity, it is a strong indication that self-efficacy has spiked.

Countryside Elementary School: Focus Group Interview

The participants interviewed from Countrywide Elementary School engaged in a group micro-credential, meaning that they completed the same micro-credential as a team. The micro-credential was a Bloomboard micro-credential: Enhancing Instruction through Rigor. The participants included two fourth grade teachers and a kindergarten teacher. Similar to the analysis conducted for the previous interview, a table was created with the aforementioned themes as categories and then coded as SE (as well as highlighted green) for an element consistent with self-efficacy and CE (as well as highlighted yellow) for an element consistent with collective efficacy.

Table 4.22 delineates the Countryside Elementary School participants' responses according to efficacy themes.

Table 4.22 Participants Responses Coded in Efficacy Themes for Countryside Elementary School Participants

Competence	Confidence to Impact Students	Confidence to Impact Teammates	Empowerment
I know standards better now and how to teach them rigorously with either new units of study or previously used ones I can tweak. (SE)	I feel more effective now in meeting the needs of diverse learners, especially those in need of enrichment. (SE)	I am always look for rigor now in my lessons, in my peers' lessons, in potential textbook series. Looking for rigor will help us make better instructional decisions as a team. (CE)	I feel more empowered to connect better as a PLC; the micro has lead to new conversations about alignment among our teams. (CE)
I have greater self-awareness of strengths and areas of improvement within the competency of "rigor." (SE)	I feel more motivated to plan lessons with rigor because I feel successful with it, before I even try. (SE)	I have presented a state conference on how to develop a summer literacy program that involves opening up my classroom library. (SE)	I feel better connected with my peers now, professionally and personally. (CE)
We have more common language for rigorous content among our teams now. (CE)		I feel more confident in teaching, sharing, and motivating our staff as a teacher leader. I have many non-participants in our building curious and excited about micro-credentials, both in an out of our school. (CE)	Post-micro, I am a better role model for literacy. (SE)
I can prioritize standards more effectively now. (SE)	Morning meetings are my secret weapon! (SE)	I can and have driven change with our team and the same is true for my teammates who also completed this micro. Some of us are now planning lessons with our teammates with rigor now at the forefront. (CE)	We have learned to trust and rely on each other more than we used to. (CE)
I have noticed more rigor in the most recently planned units. These have been units I have planned after my micro experience. (SE)		We learned to learn on each other through this micro; we needed each other. (CE)	We are empowered to make curriculum decisions as a staff. These decisions will partly be based on how rigorous curricular choices are. (CE) We feel safer with teammates during collaboration now. (CE) We have higher expectations for each other now. (CE)

An analysis of these results shows a consistent connection between micro-credentialing as a personalized professional learning experience and educator efficacy, both self-efficacy and collective efficacy. Self-efficacy manifested most commonly in the themes of “competence” and “confidence to impact students.” “Knowing and prioritizing standards,” “developing a common language among teammates,” and “planning for rigor” were all competencies that were developed through the micro-credentialing experience according to the participants. Collective efficacy manifested most commonly in the themes of “confidence to impact my teammates” and “empowerment.” In this interview, remarks consistent with elements of collective efficacy were more common than remarks consistent with elements of self-efficacy. A hypothesis related to why collective efficacy was more strongly apparent than self-efficacy: Collective efficacy is enhanced at a greater level than self-efficacy when participants engage in a “group micro-credential,” where the content is the same and planning and analysis are facilitated collaboratively.

Most pronounced were findings related to teammates learning to “trust each other,” “rely on each other” and “connect better with each other.” Trust, reliance on others, and connection are all elements consistent with collective efficacy (Muthuvelayutham & Mohanasundaram, 2012; Goddard, Hoy, & Woolfolk 2004). Another significant observation during this interview was the heightened level of positive morale among the teachers interviewed. Trust, Krutka, and Carpenter (2016) found that educators view personalized learning experiences with teammates as a “professional refuge” that gives them “energy,” “consistent positivity,” and makes them “excited about teaching again.” That was certainly the vibe detected in the Countryside Elementary School participants’ responses. One could tell by both words and body language that they were excited about the experience, but more so, about the connections that had been sparked with each other.

Kisiwa Elementary: Focus Group Interview

The participants interviewed from Kisiwa Elementary School engaged in a three different micro-credentials, some of which were self-created and others were offered by Kansas State University. All the micro-credentials were self-selected by the participants in that they had full autonomy over the topic. The participants included an ESOL teacher, a first grade teacher, and a second grade teacher. Similar to the analysis conducted for the previous interview, a table was created with the aforementioned themes as categories and then coded as SE (as well as

highlighted green) for an element consistent with self-efficacy and CE (as well as highlighted yellow) for an element consistent with collective efficacy.

Table 4.23 delineates the Kisiwa Elementary School participants’ responses according to efficacy themes.

Table 4.23 Participants Responses Coded in Efficacy Themes for Kisiwa Elementary Participants

Competence	Confidence to Impact Students	Confidence to Impact Teammates	Empowerment
My competence was enhanced during my micro and certainly after in the area of ESOL. I know what I need to know to succeed as an ESOL teacher. (SE)		I am more confident in my team now. Not only specific to our competency in our micro areas but in our overall ability to learn and grow as a team(CE)	I feel more empowered as a learner because I am more excited and enthusiastic about PD now that we are doing micro’s. I look forward to PD now.(SE)
My competence in how to implement 4:1’s enhanced during my micro and certainly after in the area of 4:1’s. (SE)		I feel like I can teach others about 4:1’s as a method of positively reinforcing student behavior. (SE) I don’t feel like I’d be comfortable teaching others my topic if I just had normal PD. The micro made me go in-depth and increased my confidence. (SE)	I am more empowered to do more with my teammates now. I have an enhanced appreciation for my teammates. I have more trust for them. We worked through something tough together (CE)
			We are more empowered as a staff because we now have more pride in our school, in each other as learners. (CE)

An analysis of these results shows a mild connection between micro-credentialing as a personalized professional learning experience and educator efficacy, both self-efficacy and collective efficacy. Self-efficacy manifested most commonly in the themes of “competence” and “confidence to impact others.” However, the participants were vague in their remarks, sharing generalizations like “I felt more competent after my micro-credential” and “I feel like I can teach others my topic.” Collective efficacy manifested most commonly in the theme of

“empowerment.” Remarks related to “trust and pride” in teammates support this finding. “Pride” while only coded twice in its relationship to collective efficacy was a predominant undertone in this interview. For research purposes, this dynamic was too bound in body language and comments outside of the micro-credential study to code and include here; however, the Kisiwa teachers obviously take pride in their school and are proud of their participation in a professional development experience as innovative as micro-credentialing.

Summary and Cross-Case Analysis

As previously shared, symbolic interactionism was a guiding theoretical framework for this study. Symbolic interactionism also allows a researcher to inquire into how “people see themselves, others, and how they think others perceive them” (Kant, 2018). In each interview, participants were asked questions that purposefully elicited responses that were self-reflective as well as reflective of one’s perception of how others view him/her. Participants were encouraged to share their feelings and perceptions on their own growth, that of their teammates, and their teammates perceptions of them as professionally hungry educators. From these responses, the central researcher could see evidence of the meaning the participants gathered from the symbolism of the “micro-credentialing experience.” This meaning was further analyzed according to how it related to each participant’s self-perception, as well as their beliefs about how others viewed them.

Findings supporting the connection between personalized professional learning and educator efficacy emanated from participants in each interview. In some cases, self-efficacy was predominant. In other cases, collective efficacy was predominant. Similarities among the three interviews included enhancements in “competence” and the “confidence to impact teammates.” In all three interviews, participants’ responses were coded in these areas, indicating a relationship between personalized professional learning and efficacy in the form of dynamics like competence and the ability to teacher or impact others. It is important to note these similarities and their strong appearance in the interviews, as they were two dynamics that were illustrated at a significant level in the Likert-type surveys shared in earlier in this chapter. “Empowerment” was a theme that emerged in all three interviews as well, as participants from each school felt empowered to learn, change, and impact their school. “Empowerment” was more pronounced in the interviews than the quantitative findings via Likert-type surveys.

There were also differences among the responses that shed light on how particular types of micro-credentialing impact efficacy. The Briarwood Elementary School participants all completed individual micro-credentials, tailored to their unique interests and needs. This form of micro-credentialing yielded many coded responses for self-efficacy and few coded responses for collective efficacy. In contrast, the Countryside Elementary School participants all completed the same micro-credential in the form of group micro-credential. This form of micro-credentialing yielded many coded responses for collective efficacy and a fewer number of coded responses for self-efficacy. The Kisiwa Elementary participants yielded a more balance split between responses that could be coded for self-efficacy and those that could be coded for collective efficacy. However, the coded responses, in general, were fewer and weaker in substance than those shared by the Briarwood Elementary School and Countryside Elementary School participants. Another difference detected was the theme that emerged with each group. The Briarwood Elementary School participants felt that the micro-credential experience helped a competency become more synonymous with their educator identities. Remarks supporting that claim include: “morning meetings are my secret weapon” and “I am now a better role model for literacy.” “Identity” was not an intended theme, but one that can be connected with educator efficacy. The Countryside Elementary School participants felt that the micro-credential experience led them to be better “connected” as a team of learners and it provided them with a tool to which they will apply in school-wide decision-making like adopting a new textbook for teaching mathematics. “Pride” was the predominant tone in the responses from the Kisiwa Elementary teachers.

Qualitative Findings

Artifacts: Micro-credential Submissions

All participants completed a submission for their micro-credentials, whether they completed a Create-Your-Own micro-credential or a micro-credential via Bloomboard. Each submission included an overview of the personalized professional learning project, including a hypothesis as to how the personalized professional learning would impact student performance. The submissions also included a research/literature review section where participants backed their personalized learning with already existing research connected with their given topic. Lastly, the submissions included descriptions of implementation plans, evidence and artifacts to

support student learning, as well as a series of reflective questions where participants processed the success of their personalized learning, shared adaptations they would make if they were to replicate the project, and presented their plan to share with peers, enhancing the efficacy of others.

For this section, the central researcher has selected two exemplary artifacts to analyze and present as evidentiary to the central inquiry of his study—personalized professional learning is connected to educator efficacy. These two artifacts will be explained through a case-by-case analysis revealing themes that emerged while coding each submission. Similar to the aforementioned focus group interviews, themes most consistent with the operational definitions for educator efficacy included:

- Competence—one’s knowledge base and skill set related to the particular focus of the micro-credential
- Confidence to Impact Students—one’s belief that he/she can effectively teach students, influence their learning
- Confidence to Impact Teammates—one’s belief that he/she can effectively teach others, influence their practice
- Empowerment—one’s belief that he/she can make change and inspire it in his/her team or school

Artifact 1: Mindfulness Skills and Strategies via the Five Senses (Bloomboard example)

Description of Micro-credential: In this micro-credential, an elementary school counselor facilitated bi-weekly mindfulness lessons with small groups of students over the course of five weeks. In these lessons, students learned mindfulness skills and strategies pertaining to their five senses. Students, using a 10-point rating scale, assessed themselves on their “mindfulness.”

Examples of Competence: In different components of the submission, the participant describes the work as “effective” and the skills and strategies as content he could “implement again successfully through the Bloomboard micro-credential or through a self-designed format with my own twist.” Feelings of “effectiveness” and the ability to implement again are both considered examples of competence and are elements associated with self-efficacy.

Examples of Confidence to Impact Students: The participant shared numerous examples of student feedback in the submission, including student quotes like “I am more calm in class now,” “I am not as fidgety,” “I slow down when I work, am more focused and listen better to my teacher.” The inclusion of these quotes shows that the participant has confidence in his teaching of mindfulness and its impact on the students with whom he worked. Additional comments like “Other people don’t get on my nerves as much,” “I am nicer to people” and “I am able to get my stress out more quickly” are other evidentiary examples of the participant’s confidence in his learning and how it has impacted students. Quantitative results, such as the rating scales, added to the participant’s confidence, as each student rated himself or herself three-four points higher on the mindfulness scale after completing the five weeks of mindfulness lessons with the participant. These comments are considered examples of confidence to impact students and are most closely associated with the elements of self-efficacy.

Examples of Confidence to Impact Teammates: The participant shared numerous examples of his confidence to teach teammates mindfulness skills and strategies. He shared plans to teach mindfulness activities to staff via the school’s morning assembly routine, staff meetings, in-service days and presentations. He shared plans to integrate mindfulness in the whole school’s

approach to addressing the social-emotional learning needs of students. He felt that “all teachers can be teachers of mindfulness and I can help with that.” These comments are considered examples of the ability to confidently impact teammates and, again, are mostly closely associated with the elements of self-efficacy.

Empowerment: The participant shared that “one huge impact of the mindfulness training was that I become more aware, mindful, and calm” and “I am communicating better as I choose my words, actions more carefully as I interact with others. This internalization of the personalized professional learning is evidentiary of empowerment. He feels empowered by his learning experience to be more mindful. The participant also shared that his mindfulness chime has become a part of his educator identity. Students see it in his office and when he joins them in their classrooms for guidance lessons. They are beginning to see him as a mindfulness role model, which has made mindfulness a part of his educator identity. “Identity” and “internalization” and “role modeling” are strong examples of empowerment as an element associated with educator self-efficacy.

Artifact 2: Morning Meetings as an Approach to Social-Emotional Learning (A Create-Your-Own example)

Description of Micro-credential: In this micro-credential, a kindergarten teacher facilitated daily morning meetings with her class over the course of six weeks. In these morning meetings, students learned a variety of social skills including—greeting others, active listening, solving problems with friends, and how to effectively share a story or message with others. The teacher measured the effectiveness of morning meetings on her students’ social-emotional learning through qualitative feedback from students and the tracking of social skills infractions that resulted in teacher intervention

Examples of Competence: In different components of the submission, the participant describes the work as “more successful and an improvement from” her previous use of morning meetings. She felt the new structure of the meetings allowed her to more explicitly teach specific steps to particular social skills. She shared that the new structure made the meetings more instructional

and there was better carryover of skills due to the consistent routine. The most telling statement of her increased competence was the following comment: “I know my students better than I ever have because of morning meetings, and while I have always done them, I can now do morning meetings to a much, much deeper capacity.” The detail in her descriptions of each component of the morning meeting is also an example of her depth of knowledge of the structure and is indicative of an enhanced competency, an element of self-efficacy.

Examples of Confidence to Impact Students: The participant shared numerous examples of decreasing incidents among students that required her intervention, as well as observations of the social skills in action, as evidence of the impact of morning meetings on students. She also cited students’ gaining important practice with academic skills during the morning message component in the area of sight words and phonics. Because students eventually took turns leading particular parts of the meeting, the participant also cited a spike in student leadership among the children in her class. She stated that “many students could fully run morning meetings if there were other students I needed to touch base with or assist first thing.” All of these results are considered examples of confidence to impact students and are most closely associated with the elements of self-efficacy.

Examples of Confidence to Impact Teammates: The participant shared numerous examples of her confidence to teach teammates how to facilitate morning meetings. She shared that she already has presented morning meetings to her teammates and they are also experimenting with morning meetings in their classrooms. She also shared intentions of presenting at staff meetings as well as our district Edcamp to all district staff. The most interesting example of the impact her personalized learning had on teammates comes from an observation that morning meetings allowed her students and her to get to know support staff more deeply. Support staff here refers to paraeducators, Horizon’s school support case workers, and instructional aides. Due to the special needs of a few of her students, there are sometimes five other adults in her classroom in the morning, the time when she facilitates morning meetings. She noticed that as the students became more successful with morning meetings and the support staff became more active participants in morning meetings, they, the adults, reported feeling more welcomed and respected by both her students and her as the teacher. In turn, she trusted and respected the

support staff more. When teammates start to trust and respect each other, collective efficacy begins to manifest. That was the case with this micro-credential.

Empowerment: The participant shared that through morning meetings she “learned more about her students than ever” and that the climate in her room was one of “safety, trust, and respect.” She felt that, through morning meetings, she and her students were able to collaboratively “set the tone for respectful day of learning,” wherein each student has a voice and feels “significant each and every day.” From these strong descriptions, there is evidence of the pride the participant has taken in her work with morning meetings. One could extend that pride into “sense of identity” because she and her students “can’t start the day without morning meetings.” It is a structure that is fundamental to their success, not something that “they do,” but more something “they are.” “Pride” and “identity” are dynamics that have been coded as examples of empowerment and are closely associated with the elements of self-efficacy.

Cross-Case Analysis

Findings supporting the connection between personalized professional learning and educator efficacy emanated from each artifact analyzed here. In both cases, self-efficacy was predominant. Similarities among the three interviews included several strong examples of “confidence to impact students,” “confidence to impact teammates” and “empowerment.” In both artifacts, participants shared a wealth of examples of the micro-credential’s impact on student learning. In both artifacts, participants shared an interest and confidence in teaching others what they have learned through their micro-credentials. In both artifacts, participants also shared a “sense of identity” with their newfound learning, which is an element closely linked to “empowerment.” Most examples of these elements in the artifacts were more closely linked to the dynamics of self-efficacy as opposed to collective efficacy. However, the one example of collective efficacy that was revealed was a participant’s feeling of mutual trust and respect developed between her and support staff due to her implementation of morning meetings.

Chapter Summary

For personalized professional learning to be recognized as an alternative route to educator re-licensure, then it must be substantiated as an impactful learning experience. This mixed methods study examined personalized professional learning in the form of micro-credentialing as a potentially impactful learning experience. The data gleaned in this study supports micro-credentialing (personalized professional learning) as an impactful learning experience due to its connection with educator efficacy. Through surveys, interviews, and artifact submissions, participants shared enhanced feelings of educator efficacy, both self-efficacy and collective efficacy. They consistently shared a spike in existing and newly developed competencies and a confidence in their ability to both teach students and their peers. They consistently shared emerging feelings of expertise, as well as feelings of empowerment to create change in their classrooms and schools. Most interesting was that they even reported a new sense of identity based on their personalized professional learning and increased pride in their teams and schools.

While these findings strongly support a connection between personalized professional learning and educator efficacy, it should be noted that personalized professional learning in the form of micro-credentialing is not necessarily a silver bullet for all educators. While not specifically reported in these findings, micro-credentialing is complex, effort-intensive work and was found to be too demanding for many participants. Many participants dropped out of the study in that first semester. Personalized professional learning also had little impact on one's enthusiasm and willingness to learn. This could be due to the fact that participants are already professional hungry and enthusiastic, as educators would need to be to commit themselves to a study that extends two full semesters of school. Micro-credentialing requires self-discipline as well as an innovative mindset, thus making it a form of personalized professional learning that is simply not the best fit for some educators. With that in mind, the next step in this work is to focus on the successful structures and features of personalized professional learning, specifically in the form of micro-credentials, and how it can be employed as a worthwhile means of professional development as well as a legitimate pathway to educator re-licensure. In Chapter Five, these next steps will be comprehensively explored.

Chapter 5: Implications, Additional Findings, and Recommendations

Introduction

A core expectation for educators is that they learn, grow, and enhance their competencies throughout their careers. To support educators in meeting this expectation, state departments and individual school districts have invested substantially in professional development (Jacob, 2015). According to The New Teacher Project (2015), school districts spend an average of \$18,000 per teacher annually on professional development. TNTP estimates that the 50 largest U.S. school districts spend an estimated \$8 billion on professional development annually. Time is also a significant investment, as TNTP data shows that teachers spend an average of 19 school days per year engaged in professional learning and training. While not as easily quantified, educators also invest substantially in their own learning outside of required professional development by their districts and on their own time, specific to their own interests and passions (Cator, Schneider, & Vander Ark, 2014). This form of professional learning, which is completed on an educator's own time and customized to his/her personal interests, is defined as "personalized professional learning" (Cator, Schneider, & Vander Ark, 2014) and often comes in non-conventional forms of social media, Professional Learning Networks, peer observations, Masterminds, and professional units of study known as micro-credentials (Ady, Kinella, & Paynter, 2015). Because personalized professional learning is such a common choice and preference of educators (Grunwald Associates and Digital Promise, 2015), it is worthwhile to explore it as an impactful form of professional learning, perhaps one that enhances educator efficacy and could even be considered worthy of educator re-licensure.

The study facilitated in this dissertation explored the relationship between personalized professional learning and educator efficacy. This relationship was explored through a mixed-methods study, employing surveys, interviews, and artifact analysis, investigating the learning experience of participants who completed two micro-credentials (a form of personalized professional learning) over the course of two semesters of school. The theory guiding the study was that if a relationship between personalized professional learning and educator efficacy could be substantiated, then it could be viewed as a legitimate pathway for educator re-licensure. As detailed in Chapter Four, on a small scale (44 participants), efficacy did increase as a result of educators' personalized professional learning experiences. This finding leads the central

researcher to consider a diverse range of recommendations for academia, for in-the-trenches practitioners, for school leaders, for district leaders, and for state level leaders. These recommendations will be comprehensively illustrated here.

Recommendations for Academia and Preparation Programs

If personalized professional learning were further studied as an efficacy building experience and eventually substantiated as a high-leverage method of building educators' confidence, competence, and potential impact, then teacher preparation programs would need to be designed in a way that assists pre-service teachers to identify their own learning needs and diligently plan and/or select personalized professional learning experiences that satisfy these needs. Pre-service teachers would need support in identifying different sources of personalized professional learning and vetting those that are legitimate and those that are not. For example, while Pinterest may be a commonly visited and harmless source of ideas for lesson planning, it is not a substantiated source of personalized professional learning that would result in the same efficacy building that was demonstrated in this study. Perhaps built into each methods course, professors could lead pre-service teachers in experiences where different personalized professional learning resources are studied, compared and contrasted for their impact, and eventually selected as a part of an action research project? Perhaps each methods course could include a micro-credential that pre-service teachers would complete with students as a part of their practicum hours?

Of course, pre-service teachers would first need to understand the importance of efficacy, both self-efficacy and collective efficacy. Preparation programs would need to include components that make pre-service teachers aware of the importance of efficacy and the impact it has on their success as an educator as compared to other variables. For example, self-efficacy— one's confidence in one's competence—has an effect size of 1.33 (Hattie, 2016). Compare that to classroom management (.52) and student-teacher relationships (.72) (Hattie, 2008). Self-efficacy has a stronger impact on student learning than classroom management and student-teacher relationships combined, however, which is currently more emphasized in teacher preparation programs? Pre-service teachers need to know that the skills and qualities they are developing are only as effective as their confidence in themselves, their belief that they are a powerful determinant in a student's success as a learner. Beyond that, pre-service teachers need

to understand that collective efficacy—the team’s confidence in the team’s competence—according to Hattie (2016) is pre-eminently impactful on student learning. It is of the utmost importance that pre-service teachers early on understand that their success with impacting student learning is powerfully influence by the trust and confidence they have in their teammates.

Personalized professional learning experiences can and will assist preparation programs emphasize the importance and impact of educator efficacy. If a pre-service teacher engages in a micro-credential as part of a methods course or an action research course, it is likely that his/her self-efficacy will be enhanced. Better yet, if a team of pre-service teachers engage in a “group micro” as part of a methods course or an action research course, it is likely that their collective efficacy will be enhanced. These experiences will help future teachers habituate themselves to personalized learning and doing so in teams, which may be a more realistic representation of the professional learning they will engage in as practicing professional educators.

A connection between micro-credentialing/personalized professional learning and action research has been made multiple times in these recommendations. The central researcher, in both presentations at conferences and to the participants in the study, often frames micro-credentialing as “action research 2.0.” This has helped practitioners find comfort and confidence in this new and different approach to professional learning and, for the purposes of the study, relicensure. If micro-credentials can be legitimately viewed as “action research 2.0,” then action research, the integral parts and process, will need to continue to be a component of preparation programs. The definition of action research will need to be understood. For example, action research is “a disciplined process of inquiry conducted *by* and *for* those taking the action. The primary reason for engaging in action research is to assist the ‘actor’ in improving and/or refining his or her actions” (Sagor, 2000). This definition is akin to the practitioner inquiry approach utilized by the central researcher as well as the approach leveraged by the participants themselves. It is also important for pre-service teachers to understand the integral components of action research and how they are reflected in legitimate personalized professional learning experiences. Sagor (2000) shares the following components as integral to the action research progress: selecting a focus, clarifying theories, identifying research questions, collecting data, analyzing data, reporting results, and taking informed action. These components are very similar to those that characterized the micro-credentialing experience of participants in the study and

those that are representative of legitimate personalized professional learning experiences. Preparation programs will begin embracing modernized, impactful practices when this connection between what is known as quality action research and what could be involved in personalized professional learning is firmly cemented.

Just as preparation programs for future teachers need to recognize personalized professional learning as efficacy-building experiences, so do preparation programs for school leaders. If future school leaders are to be considered the “lead learners,” then they need to recognize and understand the importance of personalized professional learning. This understanding can and should be built through school leadership preparation programs. Additionally, future school leaders will need to have experiences in leading teachers in personalized professional learning experiences. The same process for vetting sources of personalized professional learning experiences that is important for teachers is just as important for future school leaders. Future school leaders also need to understand, make, and further enhance the connection between action research and personalized professional learning.

Recommendations for Practitioners

Schools and districts do not need to wait for the next generation of educators in order to fully embrace and benefit from the powerful impact that personalized professional learning has on educator efficacy. They can start right now with practicing professionals in their schools and districts.

In Chapter Two, literature supporting the positive attributes that educators find in personalized professional learning was thoroughly reviewed. For example, autonomy over time, place, pacing and path (Cator, Schneider, & Vander Ark, 2014), as well as the “professional refuge” that comes with having a personalized professional learning network (Krutka & Carpenter, 2016) are positive attributes that make personalized professional learning highly desirable to and impactful for educators.

These findings were cemented by the comments made by participants in this study. The following presents a list of remarks made by the focus group interview participants that reflect the previously established positive attributes and even bring to light new positive attributes that serve to strengthen the case for personalized professional learning as a highly satisfactory method of professional development and training.

Positive Attributes Cited by Participants

- “This micro-credential was a game-changer for me; learning about mindfulness has become an addiction.”
- “The balance of micro-credentialing is appealing. It provides structure; but not too much. It provides freedom, but not too much.”
- “Micro-credentialing isn’t just spit and get. I chose what got spat at me and when I would spend my time on it. I utilized a PD day for part of my work, I spent time with my teammates after school on it, and much of it was done in the friendly confines of my house.”
- “We naturally learn, do research on our own—blogs, articles, etc. Micro-credentialing is the first professional development that I feel recognizes these efforts made by educators. I felt valued while completing my micro-credential. I felt like my professional hunger was being recognized and validated through a tangible benefit—re-licensure.”
- “Confidence and competence both come through practice, practice, practice and time and effort spent on documentation of results, reflection.”
- “Micro-credentials demand action and practice with content. It is not a book collecting dust on my shelf. It is not something I listened to a speaker share or I read about. It’s something I actually something I did with kids, did a lot with kids, actually, and I have something to show for it—re-licensure.”
- “Choice is driven by passion and time/place in your career. You are a new secondary teacher curious about innovative classroom management? There’s a micro-credential for you! You have been teaching second grade for 10 years and are revamping your implementation of narrative writing units? You may as well make your own micro out of that effort!”
- “In relation to a specific competency like planning rigorous lessons, I’ve never had a PD activity give me more focus, more structure. There was organization and structure from the beginning to the end.”
- “While we were all individually planning for our own classes and individually submitting our work, we had a team feel/systemness for our work. More so than other PD we have had recently.”

- “Relationships, enhancing them, is a benefit that we didn’t necessarily expect to get when we engaged in our micro. We are so ready to do another together because we truly enjoy learning together!”
- “Shouldn’t this be an administrator’s dream come true? People get to CHOOSE PD that motivates them as individuals and makes the team better at the same time?”
- “Finally as an outlier I have PD that applies to me and only me, because I control it!”
- District and building professional development isn’t always suited for me as a counselor. I like micro-credentialing because it allows me to pick the suit.”
- Don’t feel stuck with whatever my admin or district have decided. Feel more flexible in my learning, more adaptable to my needs, my students’ needs.”

Many of these remarks correlate with the positive attributes shared in the existing literature, however, there are a few new positive attributes that have emerged from this study. Several times the participants remarked that their personalized professional learning experience was both highly satisfactory and efficacy building due to the amount of practice they had with the competency. This practice was considered more valuable than past professional learning due to the fact that it is practice facilitated with students and it is learning that results in a tangible credential—re-licensure. The following remark sums this attribute up best:

“Micro-credentials demand action and practice with content. It is not a book collecting dust on my shelf. It is not something I listened to a speaker share or I read about. It’s something I actually did with kids, did a lot with kids, actually, and I have something to show for it—re-licensure.”

Another theme detected in the study but not as evident in the existing literature is the positive impact micro-credentialing had on teams of educators and their relationships. The participants cited a “systemness with each other” that resulted as a product of their participation as well as an eagerness to “do another [micro-credential] together because we truly enjoy learning together.” The data supports personalized professional learning as a means to enhance collective efficacy. In addition, it is a way to build rapport with teammates in an infectious energizing and enjoyable manner. Educators, much like their students, like and need to enjoy the learning process for it to deeply impact them. Micro-credentialing can meet that need, making it

a highly desirable learning pathway. These sentiments should be powerfully motivating to practicing educators, hungry for new and different ways of building their efficacy.

For practitioners who need more than “positive attributes,” this study demonstrates a clear connection between personalized professional learning and the development of new competencies for educators, as well as strengthening those competencies that already exist. The aforementioned surveys indicated sizable increases in participants’ feelings of competence after completing a micro-credential. Likewise, they strongly felt that their teammates became more competent as a result of the micro-credential. Thus, for the educator strictly interested in learning a new skill or enhancing an existing skill, micro-credentialing can be a suitable fit.

As shared in Chapter One, micro-credentialing and other forms of personalized learning also closely align with the Kansas State Board Outcome of Individual Plans of Study. As a review, Individual Plans of Study are:

- Cooperatively developed between the student, the student’s school and family members
- Based on the student’s interests and talents
- Reviewed and updated at least twice per year (Kansans Can: Talking Points, 2017)

Micro-credentials could be Individual Plans of Study for Kansas teachers. They could be cooperatively designed between the teacher, his/her team of grade level or department peers, and the building administrator. Micro-credentials are naturally based on the teacher’s interests and talents, and they could be reviewed, evaluated and tracked on bi-yearly basis and recognized by Teacher Licensure and Accreditation as credentials worthy of re-licensure.

Kansas teachers understand that Individual Plans of Study are “best for students.” They want the same personalized learning experience for themselves as they continue their journey as professionally hungry educators. Micro-credentials can be just that: Individual Plans of Study for Kansas teachers.

Recommendations for School Leaders

If micro-credentials are used as Individual Plans of Study, then school leaders might see an increase in the purpose and relevance for their supervision and evaluation of teachers.

Supervision and evaluation would become, simultaneously, both more collaborative for the leader and the individual teacher, and more respectful and relevant of the teacher's unique learning needs. Evaluations, such as the Kansas Educator Evaluations Protocol (KEEP), are "designed to espouse support and acknowledge of critical components of professional practice that ensure valid outcomes" (Kansas Educator Evaluations Systems Handbook, 2018). They are not currently designed to embrace teachers' curiosities as learners, nor do they pave a pathway to job-embedded practice with new or existing skills. If evaluations became connected to Individual Plans of Study for teachers and included micro-credentials as action steps for one's learning goals, then evaluations would become more authentic and relevant to teachers' genuine learning needs. A principal's supervision of a teacher, in relation to their Individual Plan of Study, becomes less of an evaluation of his/her performance toward a set of teaching and learning standards, but more of a coaching experience where they help the teacher choose or design a micro-credential, observe it in action, and nurture growth through ongoing reflective conversations and the provision of immediate and additional professional learning. Evaluating and assuring teacher quality is important, as, according to Robinson (2011), it has an effect size of .42. However, leading learning and development of teaching is significantly more impactful, ringing in with an effect size of .84 (Robinson, 2011). When evaluations become connected to Individual Plans of Study for teachers and micro-credentials make up the pathway for professional learning within the IPS, then we are shifting the role of the building leader. Then we are doing more than ensuring more than quality teaching. Instead we are enhancing educator efficacy through personalized learning experiences that are relevant, sustainable, and more impactful than we have traditionally done as supervisors and evaluators of teachers.

Micro-credentialing, as a systemic way to enhance educator efficacy, also helps school leaders embrace a tight-loose orientation that is essential to building a culture of learning that lasts (DuFour & Fullan, 2013). Micro-credentialing can allow school leaders to be tight about the outcomes or competencies related to professional learning. For example, school leaders can provide micro-credentials that emphasize Kansas State Board Outcomes or particular school or district initiatives. However, the nature of the micro-credentials themselves will allow them to leverage "looseness," as educators have autonomy over the time and pacing of their learning and ultimately how they facilitate "practice" with students. Tightness will come in the form of clarity of outcomes, which is an impactful leadership strategy (Hattie, 2016), and the looseness

will come in the form of teacher autonomy and social capital, two natural by-products of micro-credentialing and highly effective drivers of successful change (DuFour & Fullan, 2013).

Micro-credentials can also be the resources and learning experiences at the heart of effective school improvement models. The “school redesign” process in Kansas is “messy” and requires teams of educators to experiment with ideas and learn from failures before creating any resemblance of sustainable change (Neuenswander, 2018). Micro-credentials related to the key aspects of “redesign” could be crucial to the experimentation that is occurring in Kansas public schools. For now, these micro-credentials could be resources and learning experiences that do lead to failing forward, however, the hope would be that micro-credentials leading to successful redesign could be packaged, shared, and replicated by other schools and districts, becoming a sustainable model toward redesign and long-lasting positive change.

For school leaders to understand and leverage the efficacy-building, school-redesigning impact that personalized learning can have, they will need school leadership preparation programs that introduce the concept of personalized professional learning and provide experience and support with leading personalized professional learning with teams of teachers. Where and when does this occur in preparation programs? Is it worthy of separate course of study within a school leadership preparation program or is it important enough, influential enough to include in multiple, if not all, courses within a program? Those questions will need to be asked of and answered by the providers of school leadership preparation programs, and their responsiveness, at this time, is unknown. What is known, though, is that personalized professional learning, in the form of micro-credentials, presents a unique opportunity for school leaders to become lead learners who attend to the authentic learning needs of their staff and provide efficacy-building experiences that leave their teachers with confidence and competence, both in themselves and in their peers.

Recommendations for District Leaders

In its most practical and immediately impactful form, personalized professional learning, especially in the form of micro-credentials, offers districts a way to package and streamline professional learning. This professional learning could be used to meet district-specific goals. For example, participants in this study completed a variety of micro-credentials related to Trauma Responsiveness, which is a local Board of Education supported goal for their district. This professional learning could also be used to meet state goals. The micro-credentials offered to participants were selected because of their connection to Kansas State Board of Education Outcomes like Social Emotional Learning and Individual Plans of Study. This was an intentional effort to build participants' capacity around these two outcomes. This was done with participants who represented a variety of school districts, but the potential is there for districts to purchase and select micro-credentials or create micro-credentials that support teachers' understanding of and skill with particular state initiatives like Kindergarten Readiness, Social Emotional Learning, Individual Plans of Study, and Post-Secondary Success. Connecting micro-credentials back to state outcomes could be a powerful component of a district's accreditation plan, one that an Outside Visitation Team could recognize as a systemic model toward realizing the state's vision. The same could be said of a Professional Development Council or Board of Education at the local level as it relates to making a systemic connection between professional learning efforts and realizing a district's mission and vision.

If micro-credentials became more prevalent and practicing and pre-service educators began commonly completing micro-credentials as a means to enhance their competence, then districts could also leverage micro-credentials as a part of the screening and hiring process. For example, if a district values Growth Mindset and Professional Learning Communities as worthwhile competencies and is making an effort to systematize these competencies among their staff, then they could strategically seek out candidates with micro-credentials in these distinct areas. District leaders are already operating in this fashion, yet they only have workshops and activities cited on a resume as evidence of competence, which can be risky, as attending a workshop or professional development activity in no way qualifies one as competent in a given area. Riskier yet, district leaders are taking a candidate's "word" that he or she is competent in a given area based on what the candidate shares in an interview or through a cover letter or application. Candidates credential themselves all the time through these existing methods—

resumes, cover letters, applications—and often times secure positions based on what they share as their self-perceptions of competence. This has been acceptable because, until now, there has not been a way to qualify competence—outside of advanced degrees and certification tests. Advanced degrees and certification testing data do carry weight and are more legitimate than one’s word, however, earning an additional degree or passing a certification test rarely involves job-embedded practice. Micro-credentials always involve job-embedded practice and result in tangible evidence of a new or strengthened competency. If district leaders had a pool of candidates whom had completed micro-credentials in areas that are essential to their mission, vision, and core values, then they are in a better position to hire qualified candidates who have competencies they want and need to achieve success.

As cited earlier, educators are relatively dissatisfied with the traditional professional learning experiences. Rationale for this dissatisfaction varies from educators reporting that the trajectory of their professional learning is dictated by others, therefore, feeling as though they have limited voice and choice in their professional learning (Boston Consulting Group, 2014) to educators revealing that they experience little support post-professional development, nor sufficient time to learn from and with their teammates (Center for Public Education and National School Boards Association, 2013). This lack of autonomy and culture of professional isolation can severely impact a district’s morale as a community of learners. Districts should take note of this and strategically develop an infrastructure of professional learning experiences that provide educators with choice, voice, and opportunities to learn together. Micro-credentials can be at the heart of this voice/choice-driven infrastructure.

The last and perhaps the loftiest recommendation for district-level leaders is to leverage micro-credentials as a means to compensating educators’ for their professional hunger. Yes, traditional salary schedules include compensation for graduate credit hours and advanced degrees. However, as it has been redundantly shared in this study, there are substantial informal, personalized pathways to learning and growing as a professional educator, and these efforts can be more satisfactory to educators and more connected with educator efficacy than traditional means. These efforts are often hard to materialize concretely in a way that can justify increased compensation. For example, it is hard to materialize the effort one puts into his/her professional learning efforts on Twitter, Facebook, or Pinterest. However, some educators are being compensated for these efforts (a prime example is Teachers Pay Teachers) but they are doing so

with entities outside of their own districts/employers. One can quickly see how cloudy and complicated compensating personalized methods of professional learning can become. Micro-credentialing, though, presents a clearer pathway toward packaging personalized professional learning in a way that can be systematically compensated.

Kettle Moraine School District, in Kettle Moraine, Wisconsin, provides a model that can successfully be replicated by other districts considering the compensation of personalized professional learning efforts. KMSD utilizes a compensation model that awards a permanent base salary increase, ranging from \$200-\$600 depending on the complexity, rigor and impact for each earned micro-credential. A review team of KMSD teachers and administrators review each micro-credential and assign a monetary value to it that teachers can earn upon their successful completion of a said micro-credential. KMSD educators can and do earn multiple micro-credentials throughout the school year, enhancing their salary at a level that is incentivizing for them as a professionally hungry learner and as a career educator in KMSD. KMSD initially considered a stipend model, but for Deklotz (2017), “stipends are for completed work; the potential of micro-credentials for our district’s students and teachers is worthy of more than one-time work—that job is never finished.” One could contend, though, that a stipend model would be a worthwhile starting point to compensating educators’ personalized professional learning efforts in the form of micro-credentials. The central researcher and his own school district are brainstorming a “compensation pool” model for compensating teachers who complete micro-credentials. For example, a pool of \$2,000 would be available to “pay out” to educators who complete micro-credentials and submit to a review team, perhaps the local professional development council. Micro-credentials must meet pre-determined criteria for both submission and completion and pay would be based on the number of micro-credentials submitted to the review team. For the first year, it’s estimated, due to the small size of the district and the novelty of micro-credentials as a personalized professional learning pathway, that 10 micro-credentials might be submitted to the team and paid out at \$200 per micro-credential to the educators requesting compensation.

A much bigger dream would be for the state to have a compensation pool for micro-credentials where a broader, more diverse review team of educators—teachers, principals, superintendents, coordinators, higher education representatives—from across the state teamed together to review, analyze, and recognize educators’ micro-credentialing via compensation.

Perhaps districts could band together to “pay into” the pool so that it could be more lucrative for educators seeking compensation and more sustainable for smaller, less affluent districts. When leaders across the state can rally around personalized learning as a recognizable and worthwhile means to professional development, dreams like micro-credentialing for re-licensure and/or salary enhancement can become reality. The higher and wider the reach, the more significant the outcomes!

Recommendation for State Leaders

Exploring the potential re-organization of educator re-licensure around individual educators, their professional learning interests and needs, is a significant purpose of this study. This re-organization could be accomplished through the establishment of a personalized learning pathway like micro-credentialing that leads to re-licensure.

The vision of Kansans Can is leading the world in the success of each student. How can Kansas lead the world in the success of each student? Kansas can lead the world in success of each student by first leading the world in the success of each educator. How can Kansas lead the world in the success of each educator? Kansas could do so via a new brand of teacher-led learning and re-licensure—micro-credentials.

With any vision, there must be a structure, a model, for it to become a reality. In collaboration with the KSDE Professional Standards Board via Teacher Licensure and Accreditation, a model for instituting policy related to micro-credentialing equating to re-licensure has been discussed and drafted. Based on the findings in this study, the Professional Standards Board has reached consensus on the belief that personalized professional learning is a significant pathway toward building educator efficacy and should be considered as work/evidence toward educator re-licensure. For the study, participants, as an incentive, were/will be (based on the expiration of their existing license) granted re-licensure based on their completion of two approved micro-credentials. The participants had a choice among 25-40 different micro-credentials within Bloomboard and/or they could create their own micro-credential. The criterion guiding either their selection or creation of micro-credentials was that the micro-credentials related to a Kansas State Board Outcome such as Social Emotional Learning or Individual Plans of Study. This criterion supported the Professional Standards Board’s vision that if micro-credentialing were to become an actual pathway toward re-licensure

it would require a micro-credential or multiple micro-credentials to relate back to Kansas State Board Outcomes.

In many conversations with the Professional Standards Board, the central researcher and the Assistant Director of Teacher Licensure and Accreditation have proposed a model that states five micro-credentials corresponds to re-licensure. This is a clean correspondence that would not require any additional graduate credit or professional development points. This is an important feature to the proposed model, as many states recognize micro-credentials for professional development points (Priest, 2015), however, no state currently recognizes micro-credentials as a stand-alone pathway toward educator re-licensure. That feature is important to the PSB and the central researcher because, if this pathway were to become policy, Kansas would be become the first state to recognize personalized professional learning (more specifically, micro-credentialing) as a clean-cut, stand-alone pathway to re-licensure.

PSB has settled on five micro-credentials (over a five-year cycle) corresponding to re-licensure and those five micro-credentials originating from defined buckets of professional learning. The buckets of professional learning that have been proposed have been Kansas State Board Outcomes and Individual Professional Learning Outcomes. While consensus has not been reached yet on the set number of micro-credentials per bucket, the recommendation has been a ratio of three micro-credentials falling in the bucket of Kansas State Board Outcomes and two micro-credentials falling in the bucket of Individual Professional Learning Outcomes. The Kansas State Board Outcomes bucket would include, and this is assuming that the Kansas State Department of Education would become a creator and conduit of micro-credentials, a menu of micro-credentials that emphasize the five Kansas State Board Outcomes—Social Emotional Learning, Kindergarten Readiness, Individual Plans of Study, Graduation Rates, and Post-Secondary Success—as the central subject matter for the educator’s personalized professional learning. The Individual Professional Learning Outcomes bucket would be much more diverse and would emphasize district, school, or individual personalized professional learning interests that the educator and his/her school’s or school district’s Professional Development Council would approve.

This model, while in need of much refinement, does embrace the tight-loose orientation (DuFour & Fullan, 2013) that is essential to innovative policy and its success. The model is tight in that it is a set number of micro-credentials over a five-year re-licensure cycle and it is tight in

its connection back to Kansas State Board Outcomes. One could argue that it would have a significantly more relevant connection to Kansas State Board Outcomes than any current re-licensure pathway, as those are open to any professional learning topics so long as they as equate to PDC points and graduate credit. The model is loose in that it allows the individual learner significant voice and choice within the recommended parameters. While the bucket is defined, one can still choose which Kansas State Board Outcome on which to focus and which micro-credential on the menu in which he/she would engage his/her learning efforts. In addition, two of the five required micro-credentials would still be specific to one's individual learning curiosities and/or needs.

This pathway would also best resemble the Individual Plans of Study (IPS) for educators model that was previously mentioned. Principals and/or Professional Development Councils would work with each teacher to choose/develop micro-credentials that fall within the parameters of these buckets and then systematically track and support his/her progress each year. Goals, timelines, and supporting evidence would be both part of the educator's micro-credentials and the educator's IPS. These micro-credentials and the artifacts that would naturally become by-products of the work could also be linked back to the educator's evaluation via Kansas Educator Evaluation Protocol (KEEP). With a futuristic mindset, one could even picture the micro-credentials supporting the Kansas State Board Outcomes being a natural part of KEEP, which would be a substantive effort to link professional learning and evaluation.

Systems and the individuals within systems both crave and need continuity if both are to be optimally effective. For educators in Kansas, that continuity encompasses professional learning, evaluation, and state initiatives. All three of these crucial elements currently exist in relative isolation. Micro-credentials could be the variable that welds them together, providing an unprecedented level of continuity among state and district systems and the individuals that work and thrive within them.

Recommendations for Future Research

An immediate and obvious recommendation for future research would include a similar study with secondary teachers. Only elementary school teachers were participants in this study. Yes, their participation led to theorized outcomes like a connection to educator efficacy as well as proposed pathway to educator re-licensure, however, one could contend that these results would be/could be different with educators at the secondary level. The inclusion of participants

in specialized areas like Health and Physical Education, Music, Art, etc, would also be interesting and beneficial, as the preliminary survey results and interview findings, if traced back to individual participants, show strong support among educators in “outlier” groups. More diversity among participants is a must for these results to be extrapolated.

Specific to the methods used, it would be worthwhile to facilitate several interviews with each group throughout the study. Perhaps one during the first micro-credential, one after the first and one after completion of the study requirements. This variety would help researchers explore the sustainability of the work as efficacy building.

Another recommendation for future research would be extend the participation from two micro-credentials to five micro-credentials to see if the evidence of educator efficacy would last the course of the proposed timeline for the re-licensure pathway previously recommended. Within that study, it would be interesting to explore if educator’s interest in and stamina for personalized professional learning efforts would sustain. Anecdotally, the central researcher observed participants’ stamina wane over the course of two micro-credentials. One wonders about the impact of a participant engaging in five micro-credentials over the course of a re-licensure cycle.

A final recommendation for future research would be linking student learning outcomes to the performance of educators completing micro-credentials. For personalized professional learning to truly establish itself as impactful it would need to be linked to high or higher student learning outcomes than traditional methods of professional learning. Yes, efficacy is dominant among other variables as it relates to its impact on student learning (Hattie 2015), but a comparative study involving the variable of participants engaging in personalized professional learning and the control group of participants engaging in traditional professional learning would perhaps lead to some insight into personalized professional learning as a more direct influence on student learning outcomes. For a state to redesign its pathways to re-licensure, enhanced student learning outcomes must be the goal. A thorough exploration of micro-credentialing versus more traditional competency-based professional development would provide some insight into the impact of personalized learning on student learning, negative, positive, or indifferent.

Limitations of the Study

Limitations of the study included the central researcher's connection to two of the districts from which participants were solicited. One district is home to the school where the central researcher is a principal. Several participants from the school that the central researcher leads as principal completed surveys and participated in focus group interviews. Participants from a school that the central researcher led four years ago also completed surveys and participated in focus group interviews. These participants, because they are colleagues, and in several cases supervised by the central researcher, and have a personal relationship (which varies widely among the different participants) with the central researcher may have been more eager to respond to questions in a way that supports the goals of the study. One could also contend that because they have an honest, mutually respectful relationship with the central researcher that they were more or just as objective as any random participants.

The size and scope of the study are also obvious limitations. For the Kansas State Department of Education to redesign re-licensure requirements and include a pathway like micro-credentialing for educator re-licensure, more than 42 participants, all of who are elementary educators, are needed. Secondary educators, technical educators, special educators, and administrators would all be worthwhile participants and their experiences would further build the case (or refute the case) for micro-credentialing as a potential pathway to both professional learning and educator re-licensure.

Conclusion

The chance to study how personalized professional learning in the form of micro-credentials relates to educator efficacy provided me the opportunity to explore an area of leadership, learning and innovation about which I am passionate as a researcher, but more importantly, as a practicing lead learner. This natural affinity toward personalized learning and its potential implications to redesigning how a state might go about re-licensure made this subject matter and this methodological approach—practitioner inquiry—an ideal exploration for the me.

Data collected in this study supports the hypothesis that micro-credentialing is an efficacy-building professional learning experience. There is potential in micro-credentialing as a tool to build both self-efficacy and collective efficacy. Micro-credentials, according to the

research gathered as a part of the literature review, had rarely been analyzed as a means to build educators sense of efficacy. Thus, to learn that micro-credentialing leads educators to feel more confident in their own newly developed competence (self-efficacy), and, more importantly, more confident in their teammates' competence (collective efficacy) is both reassuring and exciting. It is reassuring in that I believed and dedicated a significant amount of time, energy, and effort to micro-credentialing as a pathway to educator efficacy. It is exciting in that now I have results that might encourage other lead learners to leverage the efficacy-building influence of micro-credentials with their own teams of educators.

To dream, design, and deliver on a pathway for micro-credentialing to be formally considered as a pathway to educator re-licensure was equally as reassuring and exciting. It was reassuring because significant time, energy, and effort by the Professional Standards Board had been devoted to considering micro-credentials as worthy of re-licensure, yet now, because of this study, PSB teammates have evidence that demonstrates the rigor and impact micro-credentialing can have on educator efficacy. We, in Kansas, can be pioneers in the area of educator re-licensure by valuing personalizing learning and cementing micro-credentialing as a pathway to re-licensure! This is exciting!

Nevertheless, a discovery unintentionally made during the study was more significant than both of these original aspirations. Through the analysis of interviews and artifacts, presentations at state and national conferences, and countless informal conversations with participants and personalized learning enthusiasts, I made a more important discovery. Yes, micro-credentialing is efficacy building and, yes, it can be a pathway to re-licensure, but at the very heart of this personalized learning were experiences that sparked and deepened relationships among participants. Teams of educators who rallied together to complete a "group micro-credential" shared feelings of community with each other, building deep levels of respect, trust, and adoration for each other. These same educators shared feelings of pride in each other and their schools. The optimism they now had about each other as learners and teammates was unmistakable. Many times, I caught myself thinking: "Wow! These people genuinely like each other, respect each other and want the best for each other. I want to be on their team!"

Several other educators reported intrapersonal growth, sharing that micro-credentialing and the specific competencies they built are now part of their "educator identities." We all have identities as educators, whether we are classroom teachers or building principals. It is these

identities that guide our actions, invariably impacting both the students we serve and the teammates with whom we connect. I never would have expected micro-credentialing to impact one's identity.

These findings have challenged me to broaden my definition for any professional learning experience, as it seems that for an experience to take deep roots with an individual or a team of individuals, it must resonate on a personal level. Micro-credentialing did just that—it resonated with individuals on a personal level.

In the end, it is clear that personalized learning is more than a fad and cannot be stereotyped as something millennial educators do. It can serve as an impetus for a meaningful learning experience that can enhance one's sense of efficacy, become a pathway to re-licensure, and, most significantly, impact educators on a personal level, transforming their professional identities and/or bringing them closer as a team that trusts, respects, and believes in their collective ability to serve students.

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Appendix A: Focus Group Interview Questions

1. As you know, the purpose of this study is to gain insight into your personalized professional learning experience and its connection to your sense of efficacy. (Efficacy, both self-efficacy and collective efficacy, was always defined as a part of each interview)
2. Please describe your personalized professional learning experience in this study.
3. Please describe your perception of your emerging competency prior to your micro-credentialing experience.
4. Please describe your perception of your competency after your micro-credentialing experience.
5. Please describe the level of empowerment you felt after this learning experience. With this new learning, are you empowered to make change as a practitioner?
6. Please describe your confidence in teaching others this learned competency.
7. Overall, has your trust/confidence in your own effectiveness changed as a result of this learning experience?
8. How did you feel about your teammates' competency prior to the micro-credentialing experience?
9. How did you feel about your teammates' competency after your micro-credentialing experience?
10. Please describe the level of empowerment you have observed/have not observed in your teammates after this learning experience. With this new learning, are your teammates empowered to make change as practitioners?

11. Please describe your confidence in your teammates in teaching others this learned competency.

12. Overall, has your trust/confidence in your teammates' effectiveness changed as a result of this learning experience?

Appendix B: Snapshot of Study and Promotional Material



Purpose

To explore micro-credentialing as a pathway for redesigning both professional learning and teacher re-licensure.

Micro-credential: A personalized professional unity of study in which a specific competency is earned and/or recognized through a tangible credential.

Key Players	Rationale and Driving Questions	Leadership Practices
<ul style="list-style-type: none"> ➤ Kansas State Department of Education, Teacher Licensure and Accreditation ➤ Kansas State University, College of Education, Educational Leadership (Ed.D.) ➤ Practicing Professionals—Buhler Schools, Inman Schools, Manhattan Schools ➤ Professional Standards Board, KS TLA ➤ Micro-credentialing Pilot Admin Team: Paul Erickson (doctoral candidate), Dr. Debbie Mercer (doctoral advisor, PSB Chair), Susan Helbert (Asst TLA Director), Mischel Miller (TLA Director) 	<ul style="list-style-type: none"> • The need for competency based-learning among teachers—Can micro-credentialing evince what teachers know and can do as professional educators? Can micro-credentialing effectively recognize both existing and emerging competencies? • The need for professional learning opportunities that provide agency and autonomy—Do teachers feel empowered as professional learners as a result of micro-credentialing? • The need for more diverse learning opportunities—Can micro-credentialing save teachers from the bane of “one-size fits all” PD and meet the needs of teachers in a diversity of fields? • The need for more cost-effective professional learning opportunities—Can micro-credentialing support professional learning at high level when resources are scarce? • The need for enhancing efficacy among teachers—Can micro-credentialing impact both self-efficacy and collective efficacy, two of the most influential factors on student learning? • The need for meaningful, relevant learning to match re-licensure systems and practices—Micro-credentialing CAN do this! 	<ul style="list-style-type: none"> ➤ Inspire a Vision for Personalized Learning ➤ Model the Way for Personalized Learning as an Individual Plan for Professional Learning ➤ Empower Others to Lead their own Learning ➤ Connect and Share Our Story
<h3>Methodology and Actions Steps</h3>		

1. Present the concept of micro-credentialing as a alternative pathway to professional learning and teacher re-licensure to the Professional Standards Board. (Fall, 2016)
2. Earn approval for a micro-credentialing pilot in which educators earn micro-credentials, equating to re-licensure. Approval earned via Kansas State University (as a doctoral study) and Professional Standards Board/Teacher Licensure and Accreditation. (Spring, 2017)
3. Field studies, visiting school districts that have established micro-credentialing as vehicles for professional learning, re-licensure, and/or salary enhancement (Kettle Moraine Public Schools, WI, Summer 2017; Baltimore County Public Schools, MD, Spring 2018).
4. Launch Micro-credentialing Pilot with 60 practicing Kansas educators. (Fall 2018).
 - a. Participants complete two micro-credentials (each over the course of one school semester) in order to earn re-licensure. Expectations are that participants complete their first micro-credential in Spring 2018 and the second in Fall 2018.
 - b. Micro-credentials can be Create-Your-Own, in which participants design their own personalized professional unit of study. The Create-Your-Own micro-credentials are vetted by main researcher, Paul Erickson, and his pilot administration team—Dr. Debbie Mercer, Andrea Tiedke, Susan Helbert, and Mischel Miller. Micro-credentials can also be selected from a catalog of micro-credentials provided by Digital Promise/Bloomboard. These micro-credentials have been vetted by Bloomboard’s team of assessors, as well as the pilot administration team, as to how well they fit the goals and objectives of the pilot.
 - c. Participants complete surveys before and after their completion of each micro-credential, assessing their sense of teacher self-efficacy and teacher collective efficacy. Surveys are in the form of eight Likert-type items and are accessed via Google forms. Participants also complete surveys from Digital Promise, assessing their level of satisfaction with/attitudes toward this personalized professional learning experience.
 - d. Participants also participate in focus group interviews, which are qualitative inquiries into their sense of self-efficacy and collective efficacy. Interviews will be facilitated by main researcher, Paul Erickson.
 - e. Participants participated in orientation sessions led by both Paul Erickson and Bloomboard. Participants also were monitored via online platforms like discussions boards as well as check-in meetings.
 - f. Here is a link to [Micro-credentialing Pilot: One-Stop-Shop](#). Here one can find requirements, timelines, snapshots of the micro-credentials participants are presently engaging in, etc.
 - g. Results in the form of realized participation, realized completion, efficacy survey data, efficacy interview data are presently being collected and will be assimilated and share in Winter 2018.
5. Post pilot summary of findings and proposal to establish micro-credentialing as an approved pathway to teacher-relicensure. (Spring 2019)

Appendix C: Participant Consent

Dear Participant,

I sincerely appreciate your willingness to participate in this dissertation study. This type of study requires an exploration of the relationship that personalized learning in the form of micro-credentialing can have with an educator's sense of efficacy, both self efficacy and collective efficacy. In Kansas, we are seeking to create a state-wide model for micro-credentials as a pathway to professional learning and teacher re-licensure. As part of this pilot study, you will earn re-licensure upon the earning of two micro-credentials, as well as your completion of surveys and/or interviews that explore your sense of efficacy before and after the personalized learning experience.

Micro-credentials can be in the form of Create-Your-Own or those provided by Bloomboard. Participants will complete one micro-credential in the Spring 2018 and the second in Fall 2018. Surveys will be taken at the beginning and end of each semester. Interviews will be conducted on-site or via video-conference and recorded. These interviews will take place at an agreed upon date/time between for both parties. The interviews will be conversational in manner and will require no preparation on your part. Each interview will require no more than 60 minutes of your time.

Your participation in this study is totally voluntary and considered low-risk through Internal Review Board standards. While I foresee no risk or discomfort for yourself or others, your refusal to participate will involve no penalty or loss of benefits. You also will have the option to discontinue participation at any point during the pilot experience. While the referencing of school districts will be a part of this research, individual participants' names will not be used.

Should you choose to discontinue your participation in this study at any point in the pilot study, please inform me in writing as soon as possible. As the central researcher in this study, I also have the opportunity to discontinue your participation at any time without your consent. I foresee no circumstances that would require me to discontinue your participation at this time.

Finally, you will have full disclosure to all results collected in the study. You may also maintain the right to add, detract, or change any of your individual responses that you feel are not representative of your original statements.

Your signature represents acknowledgement that you have read and understand this consent form. Your signature also confirms your participation in the study. Should you have questions or concerns about this research presently or after the research is conducted, please utilize contact information for me as the researcher, as well as the Principle Investigator and the University Research Compliance Office.

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Participant's Name (Printed) and Signature of Consent
