INNOVATIVE LEADERSHIP IN EDUCATION:

THE CHARACTERISTICS AND PRACTICES OF THE

NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS

(NASSP) DIGITAL PRINCIPALS OF THE YEAR

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ABSTRACT

In the 21st century school leaders need to be innovative to help meet the needs of students and to prepare them for an ever-changing future. This study examines the characteristics and practices of the National Association of Secondary School Principals (NASSP) Digital Principals of the Year. The goal of this research was to explore the unique characteristics and practices of Digital Principals. It uses an explanatory sequential mixed-methods design to incorporate both qualitative and quantitative data to explore the backgrounds and stories of these innovative school leaders. Grit and mindset were assessed along with demographic information in the quantitative dimension. A case study of four digital principals allowed to delve deeper into the hearts and minds of school leaders. The findings suggest that Digital Principals have a passion to improve the educational experiences of students, promote the growth of faculty members, and use sound leadership strategies mixed with a bit of technology. Digital Principals are well-connected with other educators through social media where they learn, share, and borrow ideas. The needs of students, staff and parents also guide leadership-driven change processes. New ideas are grounded in creativity and the ability to persevere. The innovation that results is transformative and empowering.

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LIST OF ABBREVIATIONS

BYOD   Bring Your Own Device

ISTE   International Society of Technology Educators

NASSP   National Association of Secondary School Principals

NASBE   National Association of State Boards of Education

NSBA   National School Boards Association

NCTET   National Coalition for Technology in Education and Training

PLN   Professional /Personal Learning Network

CHAPTER 1. INTRODUCTION

The National Association of Secondary School Principals (NASSP) is the premier

educational organization for school leaders in the country. Founded in 1916, NASSP's mission is

to "connect and engage school leaders through advocacy, research, education, and student

programs" (NASSP, 2016, line 2). In 2011, NASSP created the Digital Principal Award to

recognize principals who harness technology to advance the educational mission of their schools.

These digital leaders successfully facilitate innovative digital or technological practices in the

school setting, first personally, and subsequently with their faculty, staff, and students. Key

resources for enhancing learning through technology may include, but are not limited to,

management tools and communication systems. These processes and practices occur in the

context of a digital principal's daily work and are part of the normal educational practices of

leading a school, particularly in an age where a large component of learning is grounded in the

use of technology.

Background

In 2007, a technology leadership strand was created at the NASSP Annual Conference

(B. Farrace, personal communication, April 21, 2016). During the first year, leading the session

were the most innovative technologically-minded principals; however, the group failed to

materialize as only a handful of principals attended. The following year saw a moderate increase

as a few more people attended the session, and over time, an increasing number of principals

were choosing to attend this session. By 2010, the technology leadership sessions were well-

attended and filled to capacity. This group gained a substantial following amongst conference

attendees as their reputation continued to grow. The rapid growth in interest and attendance

appeared to indicate that there was a need and demand for technology innovation and leadership in schools. Arising from the discussion in one of the sessions, the following question emerged: How could NASSP lead the way to provide leadership in the realm of technology utilization and implementation on a national level?

Earlier, NASSP developed a model of having "principals-in-residence," leading various topics such as literacy, school safety, assessment, and school-business partnerships. These principals would take a sabbatical and represent NASSP, traveling across the country to assist schools with their specific needs. In the words of Bob Farrace (2016), NASSP Public Relations Director, the following idea surfaced, "Wouldn't it be great to have a principal-in residence for technology?" As time progressed, despite the desire to lead the effort for innovative leadership, there were many principals across the country individually leveraging the power of technology in schools with little or no connection to the efforts of the national organization.

Concurrently, NASSP was supporting the National Education Technology Standards (NETS) but was not successful in bringing educational technology and school leadership together in a coordinated manner. The organization provided recognition for leaders across the nation, through the State and National Principal of the Year Award, Assistant Principal of the Year Award, and Breakthrough School Award for principals who were working in high-needs schools and making extraordinary progress in the improvement of student achievement. However, none of the awards recognized principals who were leveraging the power of technology in innovative ways.

What are principals doing to use technology to solve education's biggest problems? This is a question that the National Association of Secondary School Principals sought to address. In

2011, an award was proposed by Farrace to acknowledge leaders or principals who were specifically innovating through the use of technology. At the time this was a novel concept. While some principals were very innovative, technology leadership tended to be a term used in reference to a teacher or central office-driven system. NASSP sought to differentiate this award from the others which were already in place. Initially, the goal was to identify three school leaders who were leading the most interesting, creative work that was being done in educational technology across the country. The rationale for the Digital Principal Award was not to deter applicants by limiting the scope of creativity but to highlight a range of innovative ways technology was being used in schools. The documentation for the application process was atypical through the use of a portfolio system. Artifacts were submitted to demonstrate achievements and best practices in innovative schools. The portfolio would also highlight the applicant's goals and why it was essential to use technology to achieve these goals. The winners of the Digital Principal Award would be given a platform to showcase these practices through the national organization. The criteria for selection was a principal's achievement of the NETS-A standards, which was developed by the International Society of Technology Educators (ISTE).

Through this initiative, NASSP's primary goal was to identify truly effective and innovative practices and present these examples to school leaders across the nation. This initiative has given technologically-savvy principals a new platform and sense of credibility in effectively leading schools toward the goal of technology innovation. Over time, digital principals have continued to accomplish bigger and better things, including professional speaking engagements, leading school districts, consulting, and writing books, all while leading their own schools and serving the needs of their faculty, staff and school community. Since the

inception of the award in 2012, a total of 15 principals, three per year, have been selected to become members of this prestigious cohort of digital leaders.

In return, this focus has provided NASSP the ability to lead innovative learning communities and create a leadership presence within the technology community, including a seat on the National Coalition for Technology in Education and Training (NCTET), along with a larger presence at the ISTE National Conference. NASSP's role in supporting, recognizing and training innovative principals has been clearly cemented through the increased collaboration of the recipients of the Digital Principal Award. It allows NASSP to advocate on behalf of principals to let the education technology community be in touch with the needs of the key decision makers for schools and how school leaders may be better supported in the realm of technology utilization and innovation.

Purpose of the Study

In the 21st century it is difficult to separate technology from education the role of technology in education is continuously being redefined as the line begins to blur between the two. As such, there is a need to explore how successful school leaders are being innovative in utilizing technology to enhance educational outcomes at all levels of the educational system. According to Lehmann (2009), founding principal of Philadelphia's Science Leadership Academy, "Technology is as commonplace as oxygen. It is something that is ubiquitous." All school leaders need to find innovative ways to meet the needs of students in an ever-changing world. Students should be equipped for any challenge, including occupations that have not yet been created yet (Wagner, 2014).

As the world is changing, the demands on education are being altered. A focus is increasingly placed upon developing critical skills to ensure student success (Wagner, 2014) These include but are not limited to 21st Century Skills (DuFour & DuFour, 2010), growth mindset (Sparks, 2013), grit (Perkins-Gough, 2013), and other non-cognitive traits or soft skills (West, 2016). Additionally, research is continuing to reveal that there is a relationship between these traits and academic, career and life success (Lleras, 2008; Pellegrino & Hilton, 2013). Successful education leaders must now adapt to this shifting of emphasis away from testing success, which was advocated by the No Child Left Behind (NCLB) act and towards the development of skills that will allow students to successfully navigate college and work. In order for schools to change, it is important that educational leaders also acquire, develop, and apply these abilities (Reeves, 2009).

The examination of digital leaders; the qualities they possess, their ability to innovate, and their ability to leverage technology effectively as educational leaders, particularly in an age where only a portion of the school community are digital natives, is a complex undertaking. In considering Digital Principals background, training, personality traits, skills, and dispositions of these leaders of educational technology, I hope to gain a clearer understanding of how they developed their leadership style, how they lead, and other essential attributes of innovative digital educators. In short, what makes them tick? To this end, the purpose of this study was to describe the essential attributes (unique leadership style, use of technology,) of innovative Digital Principals.

Research Questions

This study was formulated from an initial question that asked, "What makes a successful digital principal or school leader?" This brought up additional questions, such as: How are principals utilizing technology to help teachers improve instruction for all students? How are students being supported by educational leaders to advance their learning in innovative schools? What challenges persist in helping teachers and students become effective users of technology?

Preliminary discussions with other Digital Principals appeared to indicate that knowledge of technology alone is not sufficient to be a successful digital leader. In the most successful schools, innovation, through out-of-the-box thinking have driven the use of technology. Derek McCoy, Digital Principal of the Year, 2014 offered the thought that there is something more in addition to digital leadership than just understanding how to use technology.

The following research questions will frame this study and will be addressed through this dissertation paper:

1. What characteristics do successful innovative school leaders possess?
    a. What are the demographic characteristics among the Digital Principals?
    b. What is the level of grit (passion and perseverance over time) of Digital Principals?
    c. What is the mindset (growth or fixed) of Digital Principals?
2. What professional practices do successful innovative school leaders engage in?
    a. How do Digital Principals lead innovative change in their schools?
    b. How do Digital Principals use technology to innovate at their school?
    c. How do the experiences of Digital Principals affect the way they innovate?

CHAPTER 2. LITERATURE REVIEW

This review of the literature is organized according to key concepts and ideas that frame the context of digital leadership. These include: The Disruptors—Creativity and Innovation in Education; The Why of Innovation: The Global Landscape; The What of Innovation: Innovation Defined; The How of Innovation: Where the Rubber Meets the Road; Leadership: Leading in a Digital Age; Connectivity: The Connected Educator in Our Connected World; Standards for Technology Leaders; Growth Mindset; Grit: Passion and Perseverance over Time. Additionally, the educational context of digital leadership and technological innovation in schools are also to be addressed.

The Disruptors: Creativity and Innovation in Education

In arguably one of the most effective advertising Super Bowl campaigns of all time, Apple debuted its revolutionary Macintosh personal computer in 1984 with an ad based upon George Orwell's novel, *1984* (1948). Amidst a sea of gray clad conformists succinctly and mindlessly marching to the sound of a talking head on a large screen, a lone woman carrying a sledgehammer bursts into the room. She wears a white tank top and bright orange shorts. With immense urgency and defiant strength, she hurls her sledgehammer into the screen, shattering it and breaking the stronghold of the totalitarian regime over the thoughts and minds of the masses. Reflecting George Orwell's dystopian novel in which a totalitarian society maintains complete control over critical thought, Apple revolutionized an industry.

Much in the spirit and fashion of technology's Apple's Macintosh and Orwell's societal commentary in "1984", today's educational leaders are breaking the educational thought mold through creativity and innovation. The sage on the stage, similar to the talking head big brother

in the Apple ad, approach to education is no longer the status quo. As the Apple Macintosh personal computer promised to shift power into a user's hands, educational disruptors are not only questioning the model of traditional education, they are completely bringing about an educational revolution.

In today's ever-changing, information-rich society, there are few things that remain constant. Aided by the development of mobile devices and the rise of social media, access to the wonders of four corners of the earth is now literally in the palm of your hands. Where content was once king in academia and considered the sure fire way to a person's success and achievement, today it is the ability to navigate through the often tumultuous waters of the real world by applying knowledge and experience to one's circumstances (Wagner & Compton, 2015; West, Kraft, Martin, Duckworth, Gabrieli, & Gabrieli, 2015).

Educational leaders are tasked with helping students to be successful not just in the context of school but also in the real world. School leaders have to be competent and capable individuals. Traditionally educational success has been judged based upon test scores based upon content. Wagner (2014) argues that we must help students to develop skills that will allow them to keep up with the exponential technological advancements that have established the information revolution. "21st Century Skills" will help students to be prepared for constantly changing demands of the world and for new occupations that have not even been created yet. Robinson (2006) contended that schools focus on the wrong things when they choose to deal strictly with academics. He says, "We have to rethink the fundamental principles on which we're educating our children" (p.1).

The Why of Innovation: The Global Landscape

According to Wagner (2014), there is a need for students to learn a new set of skills which would prepare students for college and careers beyond what was currently being taught in schools. Looking at the United States' economy and conferring with economists, business leaders, and policy makers, Wagner found that the one thing that everyone agreed upon that would allow for a reversal of the economic state was an increase in innovation. Friedmann and Mandelbaum (2012) state that the loss of jobs through outsourcing to other countries and automation can be overcome through increasing jobs in innovation and entrepreneurialism.

After the fallout from the Great Recession of 2008, our country was faced with many economic and social challenges. Among some of the challenges presenting itself in our country during this time included high unemployment or underemployment rates, numerous jobs being outsourced or automated, and growing income inequity. These factors lead to the consumer-driven economy of the United States proving to be an unsustainable model and the desperate need for a new archetype to repair our torn and tattered economy. To move forward in our twenty-first century, according to Wagner (2015, p. 2), "there is general agreement as to what that new economy must be based on. One word: innovation." He goes on to say that "if we are to remain globally competitive in today's world, we need to produce more than just a few entrepreneurial and innovators. We need to develop the creative and enterprising capacities for all our students" (p.4).

Simon Sinek (2009) encourages leaders to "start with the why." (p. 1) Couros takes a slightly different approach into the "why" of innovation by saying "When forward-thinking schools encourage today's learners to become creators and leaders, I believe they, in turn, will

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create a better world" (2015, p. 19). To develop an innovator's mindset, Couros believes that it is not a matter of compliance but empowering people and inspiring innovation.

The What of Innovation: Innovation Defined

Innovation is a word that we constantly hear in today's society. Business leaders call for a more innovative workforce, educational leaders look to be more innovative and teachers endeavor to educate students to become innovative. Numerous books are written about innovation and a Google search on the word "innovation" nets 567,000,000 results. What exactly *is* innovation? Wagner (2012) built upon his Seven Survival Skills outlined in *The Global Achievement Gap*. Wagner's original Seven Survival Skills were listed as:

1.   Critical thinking and problem solving
2.   Collaboration across networks and leading by influence
3.   Agility and adaptability
4.   Initiative and entrepreneurship
5.   Accessing and analyzing information
6.   Effective oral and written communication
7.   Curiosity and imagination (p. 12)

To his original list, Wagner ascertained later that in addition, innovators also would need:

8. Perseverance
9. Willingness to experiment and take calculated risks
10. Tolerate failure
11. Capacity for "design thinking"

Brown and Katz (2011) lists the five characteristics of design thinkers to be:

1.   Empathy
2.   Integrative thinking
3.   Optimism
4.   Experimentalism
5.   Collaborators

Dyer, Gregersen and Christensen (2011) indicate the five skills that they found to separate

innovative and non-innovative individuals. Those five skills include those that may be separated

into doing and thinking:

1. Associating
2. Questioning
3. Observing
4. Experimenting
5. Networking

Extrapolating the data from his research, Wagner (2015) concluded that the successful

innovators need to have these primary qualities:

- Curiosity – which he defines as "a habit of asking good questions and a desire to understand more deeply"
- Collaboration – which he says begins with "listening to and learning from others who have perspectives and expertise that are very different from your own"
- Associative or integrative thinking
- A bias toward action and experimentation

These qualities form the basis for innovative practices to develop in an individual.

To destigmatize the education buzzword status of the term "innovation," Couros

encourages people to understand what innovation looks like in schools. He defines innovation to

be "a way of thinking that creates something *new* or *better*" (2015, p.19). In addition to the

definition of innovation, Couros draws upon Carol Dweck's growth mindset and defines the

mindset of the innovator to be, "the belief that the abilities, intelligences, and talents are

developed so that they lead to the creation of new and better ideas" (p.33).

In innovation, Couros believes that people must be free to fail and to have both the qualities of resiliency and grit. The innovator mindset begins with empathy for our students. Couros identifies the eight characteristics of the innovator mindset to include:

1. Empathetic
2. Problem Finders/Solvers
3. Risk Takers
4. Networked
5. Observant
6. Creators
7. Resilient
8. Reflective

The How of Innovation: Where the Rubber Meets the Road

In Robinson's book *Creative Schools* (2015), he discusses the feedback from his TED Talk entitled, "Do schools kill creativity?" (2006). In his TED Talk, Robinson emphatically states, "we need to rethink the fundamental principles on which we're educating our children." According to Robinson, the main premise of this fundamental principle was how people are born with innate natural talent and are truly brilliant lose touch with this as they go through school because what they are good at is devalued or even stigmatized. Mistakes are stigmatized and by the time children become adults, they are afraid of being wrong. "And the result," Robinson pointedly adds in his TED Talk, "is that we are educating people out of their creative capacities." Noting the number of views he has received (44,257, 054 total views as of March 28, 2017), and the number of people who have contacted him saying that they have shown this TED Talk to their parents, principals, superintendents, and teachers from around the world, Robinson believes that he is not alone in his views and that his views have been around for a while.

Robinson (2015) noted that for schools to excel, beyond the teacher and the learner, there must be "an inspired school leader who bring vision, skill, and a keen understanding of the kinds of environments where learners can and want to learn" (p. 182). According to Robinson, all of the creative schools that he visited had in common a "visionary and passionate principal" (p, 182). Robinson says that the heart of a principal's role is "appreciating the individuality of the student body, seeking potential at every turn, and constantly striving to move the school forward in the face of constant change" (p. 186). Robinson takes note of NASSP's report Breaking Ranks: Changing an American Institution and the recent Breaking Ranks Framework that "provides a model that school leaders can follow to personalize a program specific to their school's needs" (1996, p. 201). These core areas provides a template which NASSP notes schools leaders should address—collaborative leadership, personalizing your school environment, and curriculum, instruction, and assessment to improve student performance.

Amabile (1998), who has spent over thirty-five years studying creativity says there are main three main components—expertise, creative-thinking skills and motivation, both extrinsic and intrinsic. She has found that the most important of those three is motivation, intrinsic being more important than extrinsic to promote creativity. "Expertise and creative thinking are an individual's raw materials—his or her natural resources, if you will. A third factor—motivation— determines what people will actually do." According to Amabile, "passion and interest—a person's internal desire to do something—are what intrinsic motivation is all about" (p. 79). Wagner adds to Amabile's ideas by stating that beyond just passion and interest, "there are three interrelated elements to intrinsic motivation—play, passion and purpose" (2015, p. 26). He concludes that the research states that we as humans have the innate need for exploration, experimentation, and envisioning new possibilities, in which we learn these skills through play.

Leadership: Leading in a Digital Age

Leadership is probably one of the most studied and discussed topics in the world, and probably remains the least understood. A simple Google search on the term "leadership" will yield over half a billion results. However, the key words of "digital leadership in education" will find about seven thousand results, many of them linked to Eric Sheninger, 2012 NASSP Digital Principal. Yet no other invention has given as much hope to the transformation of education as the use of technology to help students learn and achieve (Brockmeir, Sermon, & Hope 2005; Golden, 2004). Likewise, it is hoped that technology would create a disruption and change to the traditional culture of education, turning it into an inspiring, revolutionary discipline.

This type of educational change may be daunting as it creates a personal sense of loss for many educators who have worked so hard in a traditional model with much success (Reeves, 2009). However, this type of change may lead to amazing new opportunities and ways for students to learn (Couros, 2015). Sheninger (2014) has shared his perspective of digital leadership, which has become the foundation for transformation in many schools. A snippet of what it means to be 21st century school leader is listed as follows in his "7 Pillars of Digital Leadership in Education"

1. Communication: Leaders can now provide stakeholders with relevant information in real time through a variety of devices. No longer do static, one-way methods such as newsletters and websites suffice.

2. Public Relations: Leaders need to become storytellers-in-chief. We can now form the foundation of a positive public relations platform using free social media tools where we control the content.

3. Branding: Leaders can leverage social media tools to create a positive brand presence that emphasizes the positive aspects of school culture, increases community pride, and helps to attract/retain families when looking for a place to send their children to school.

4. Student Engagement/Learning: Students that are not engaged are not likely to be learning. Leaders need to understand that schools should reflect real life and allow students to apply what they have learned through the use of the tools they are using outside of school.

5. Professional Growth/Development: Leaders can form their own Personal Learning Network (PLN) to meet our diverse learning needs, acquire resources, access knowledge, receive feedback, connect with both experts in the field of education as well as practitioners, and discuss proven strategies to improve teaching, learning, and leadership.

6. Re-envisioning Learning Spaces and Environments: Leaders must begin to establish a vision and strategic plan to create an entire school building dedicated to learning in a more digital world.

7. Opportunity: It is important for leaders to consistently seek out ways to improve existing programs, resources, and professional development. Digital leaders leverage connections made through technology and increase opportunities to make improvements across multiple areas of school culture.

Digital leadership is not easy. Flannigan and Jacobson (2003) point out that traditionally, many principals are ill-equipped for their role as technology leaders because of a lack of experience in using computers with students in the classroom. They also observed that much time was spent on

acquiring hardware but very little time was spent to develop a vision of how it would be used and little professional development was provided to support the learning of administrators and teachers. Golden (2004) acknowledged that educational leaders don't yet understand how technology can be beneficial and that professional development is needed to make educators comfortable with its use. As such, a culture shift needs to take place in order to transform learning for students. There are many challenges, including the lack of monetary resources, traditional school cultures which are difficult to change, and fearful attitudes toward the use of new technologies (Hew & Brush, 2006).

Connectivity: The Connected Educator in Our Connected World

In today's advancing world of social media, there is little research and competing ideologies of the role of social media in the educational outcome of students. As technological leaders, one of the most valuable professional resources is the collective empowerment of the group for the positive progression of education. Twitter has become an invaluable resource for educators (Cassas, Zoul & Whittaker, 2016; Couros, 2015). According to Currie, Krackower and Rocco (2016, p. 4) in regards to Twitter, "no other resource that we have used has had such a positive and profound effect on us as educators in such a short time."

Leveraging technology through the use of social media, along with other innovative ways to remain connected, affords previously isolated educational leaders the ability to be part of a collective professional learning community. According to Facebook.com (2016, line 4) they have over one billion, seven hundred million accounts, making it the largest social media platform. Thus, technology creates the means through which educational best practices may be shared through instant feedback. At the same time, valuable communication with others may also occur. Social media creates connected, collaborative learning spaces to facilitate the sharing of best

practices (Cassas, Zoul & Whittaker, 2016). This allows educators to be less isolated in their

thinking and more global in their application of best practices.

Robinson (2015) states that "great schools are continuously creative in how they connect

to the wider communities of which they are part. They are not isolated ghettos; they are hubs of

learning for the whole community" (p.198). Couros (2015) touts the importance of both face-to-

face and social media networking. According to Couros, "the power of networking is sharing

ideas, clarifying our thinking, and developing new and better ideas" (p.52). Being on Twitter and

being connected through other social media, allows for continuous access to others and new

ideas which Couros calls, "Embracing an Open Culture". Pointing to Chris Anderson's idea of

"Crowd Accelerated Innovation," Couros mentions the three key elements of: 1) people who

share common interest, 2) visibility to see what others are doing, and 3) desire to change, grow,

and improve. Whitaker, Casas and Zoul (2015) mention that these things are what connected

educators do differently:

1. Invest in a personal and professional learning network
2. Learn what they want, when they want, how they want
3. Embrace the three C's: communication, collaboration, and community
4. Give and take…and give some more
5. Strive to be tomorrow…today
6. Know that it is still about the three R's: relationships, relationships, relationships
7. Model the way
8. Know when to unplug

Currie, Krakower and Rocco (2016) recommend that educators should start from the very basics

and progress to allow even non-digital natives the ability to connect through Twitter. In their

Twitter user manual for educators, the three stages that progress through the book from getting

started to taking Twitter to a higher level and then becoming a Twitter rock star, allow all levels

of Twitter users to become connected.

Standards for Technology Leaders

The International Society for Technology in Education (ISTE) Standards for

Administrators (ISTE-A) abound with the growth mindset framework and grit needed to create

technological reform in schools to bring about professional growth for teachers and digital

learning for students. As educational leaders in schools, the digital leaders who serve as school

administrators and hold to these standards endeavor to act upon key components necessary to

create professional practice in line with growth mindset thinking.

Digital leaders constantly forge ahead toward their goals to improve their staff

performance, which in turn, improves student learning. So what are school leaders supposed to

do and what are the benchmarks? In 2001 the International Society of Technology Educators

(ISTE) released the National Education Technology Standards - Administrators (NETS-A).

Criterion for students, teachers, coaches and computer science educators have also been

published. These standards provide a framework for the skills, mindsets and disposition of

school leaders as they support "digital age learning, create technology-rich learning

environments, and leading the transformation of the educational landscape (ISTE, 2016, p. 1).

These indicators would later be renamed the "ISTE Standards" in the latest revision, released in

2009. The standards for administrators are as follows:

1. Visionary leadership: Educational Administrators inspire and lead development and

   implementation of a shared vision for comprehensive integration of technology to

   promote excellence and support transformation throughout the organization.

2. Digital age learning culture: Educational Administrators create, promote, and sustain a dynamic, digital-age learning culture that provides a rigorous, relevant, and engaging education for all students.

3. Excellence in professional practice: Educational Administrators promote an environment of professional learning and innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources.

4. Systemic improvement: Educational Administrators provide digital age leadership and management to continuously improve the organization through the effective use of information and technology resources.

5. Digital citizenship: Educational Administrators model and facilitate understanding of social, ethical and legal issues and responsibilities related to an evolving digital culture.

A key component in the ISTE Standards for Administrators includes collaborative and teamwork- oriented visionary leadership. Being a visionary leader in administration as stated in the ISTE Standards requires educational administrators to "inspire and lead development and implementation of a shared vision for comprehensive integration of technology to promote excellence and support transformation throughout the organization." A component of the digital age learning culture of ISTE Standards requires educational administrators to "promote and participate in local, national, and global learning communities that stimulate innovation, creativity, and digital age collaboration. Educational administrators are also required to reflect excellence in professional practice by promoting "an environment of professional learning and

innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources" (ISTE, 2009).

These standards support the ISTE Essential Conditions, which are the "14 critical elements necessary to effectively leverage technology for learning." School administrators need to be aware and proactive in creating the right circumstances to create change (Reeves, 2009). Without the proper buy-in and support leader's efforts, no matter how ingenious, will fall short.

ISTE Essential Conditions

1. Shared Vision: Proactive leadership develops a shared vision for educational technology among all education stakeholders, including teachers and support staff, school and district administrators, teacher educators, students, parents and the community.

2. Empowered Leaders: Stakeholders at every level are empowered to be leaders in effecting change.

3. Implementation Planning: All stakeholders follow a systematic plan aligned with a shared vision for school effectiveness and student learning through the infusion of information and communication technology (ICT) and digital learning resources.

4. Consistent and Adequate Funding: Ongoing funding supports technology infrastructure, personnel, digital resources and staff development.

5. Equitable Access: All students, teachers, staff and school leaders have robust and reliable connectivity and access to current and emerging technologies and digital resources.

6. Skilled Personnel: Educators, support staff and other leaders are skilled in the selection and effective use of appropriate ICT resources.

7. Ongoing Professional Learning: Educators have ongoing access to technology-related professional learning plans and opportunities as well as dedicated time to practice and share ideas.

8. Technical Support: Educators and students have access to reliable assistance for maintaining, renewing and using ICT and digital learning resources.

9. Curriculum Framework: Content standards and related digital curriculum resources align with and support digital age learning and work.

10. Student-Centered Learning: Planning, teaching and assessment all center on the needs and abilities of the students.

11. Assessment and Evaluation: Teaching, learning, leadership and the use of ICT and digital resources are continually assessed and evaluated.

12. Engaged Communities: Leaders and educators develop and maintain partnerships and collaboration within the community to support and fund the use of ICT and digital learning resources.

13. Support Policies: Policies, financial plans, accountability measures and incentive structures support the use of ICT and other digital resources for both learning and district/school operations.

14. Supportive External Context: Policies and initiatives at the national, regional and local levels support schools and teacher preparation programs in the effective implementation of technology for achieving curriculum and learning technology (ICT) standards.

Grit: Passion and Perseverance over Time

Angela Lee Duckworth (2016) from the University of Pennsylvania refers to grit as passion and perseverance over long periods of time. Persevering through toward a distant goal and the factors which make some successful and others unsuccessful have been sought through numerous studies. Snipes, Fancsali and Stoker (2012, p.7) defined grit to be "the determination and drive to stay focused, persist in the face of adversity, and stick with difficult tasks in order to achieve goals." Digital Principals with technology-infused leadership styles consistently persevere through opposition to realize their vision for integrating technology into their educational leadership practices.

Duckworth's idea of grit (2016) originated as research into the psychology of success. In endeavoring to understand the etiology of what causes some individuals to give up on their goals and others to persevere through to success, she determined through extensively researching different groups that grit included the two critical components of both passion and perseverance. Through her research, she found that "the highly accomplished were paragons of perseverance" and they were "constantly driven to improve" (p.8).

Eskreis-Winkler, Shulman, Beal, & Duckworth, (2014) researched the association between grit in four different life contexts. In this study, the researchers investigated the role that grit played in accurately predicting: 1) individuals who would remain in an Army Special Operations Forces (ARSOF) selection course; 2) those who continued in a sales position for vacation ownerships; 3) students who graduated at a public Chicago high school on time; and 4) couples who remained in a marriage. The findings from this research revealed that individuals who were initially identified in preliminary questionnaires as being grittier were more likely to

succeed toward their long-term goals. Grittier soldiers were more likely to complete the 24-day ARSOF course and less likely to drop out. Grittier salesmen were more likely to be salesmen long-term. The students with higher levels of grit were more likely to graduate from high school on time. In the marriage study, grittier men were more likely to remain married, as opposed to grittier women.

Through these research projects, the presence of grit in individuals correlated with greater ability to complete long-term goals. The question of how this grit is obtained or developed was answered in Duckworth's book, *Grit: The Power of Passion and Perseverance* (2016). Duckworth stated that grit could be developed in two ways: intrinsically (p. 91) and extrinsically (p. 296). After numerous studies were conducted, Duckworth surmised that people with grit shared four common characteristics: interest, practice, purpose and hope. The extrinsic factors contributing to developing grit were termed: parenting for grit, the playing field of grit, and a culture of grit. These factors contributed to a person's ability to obtain grit.

According to Duckworth (2016) the intrinsic cultivation of grit begins with interest. Having interest is an aspect of the passion portion of grit. After interest is developed, this moves to practice. Practice is expending an extended amount of time, getting beyond the current skill level toward mastery, no matter where the person existed at their current skill level. Purpose sees passion toward maturity causing it to become important to oneself and is eventually developed further to include the well-being of others. Purpose sustains passion through seeing it as also benefitting others. Hope permeates every stage and drives each stage beyond any doubt or difficulties.

Duckworth's extrinsic factors toward the development of grit begins with Parenting for Grit. The best conditions for grit developed when parents, teachers, and mentors offered high expectations coupled with high support. This framework of self-worth came from supportive parents and the discipline of hope to carry one through difficult times. Through what Duckworth called "wise parenting" (Duckworth, 2016, p. 212), children both imitated and emulated their parents. Parents who demonstrated high levels of grit would have children who would be raised to follow suit.

The next extrinsic factor toward grit development was found in individuals with high levels of grit in what Duckworth referred to as the Playing Fields of Grit. Grit was developed as students involved in extracurricular activities continued to do so for over a year and across seasons. Extracurricular activities tend to be both intrinsically motivating and challenging at the same time and doing this over seasons allowed for the development of grit. Willingham's Personal Qualities Project (Duckworth, 2016) found that follow-through, where students showed longevity and progress in a particular area, was an important factor.

To round out the extrinsic development of grit, Duckworth (2016) indicated that individuals needed to live in a Culture of Grit. Demonstrated grit, as a culture, will, over time, become absorbed as an individual's own attitudes and behaviors. Being immersed in a specific way of thinking will cause one to identify with that group.

The connection between and growth mindset and grit is defined by the ability for an individual to pursue a long-term goals. (Duckworth, Peterson, Matthews, & Kelly, 2007). In studying West Point cadets, Duckworth (2016) found that ability did not correctly predict successful outcomes, but the level of grit more closely correlated to which candidates were more

likely to complete the program and less likely to drop out. Investigating the link that growth

mindset played in obtaining grit, Duckworth found that "children who have more of a growth

mindset tend to be grittier" (Perkins-Gough, 2013, p.14).

Growth Mindset

Through her research on success and achievement at Stanford University, Dweck (2006)

discovered that how people perceived their innate talent and intelligence (fixed mindset) or how

people perceived their ability to grow and develop their intelligence (growth mindset) played a

significant role on their motivation and actual achievements. For digital leaders who are

improving student outcomes through disrupting education with their innovative leadership,

growth mindset and digital leadership seem to go hand in hand (Dougherty, 2013).

According to Dweck, leaders with fixed mindsets believe that there are people who are

superior and others who are inferior. These fixed-mindset leaders endeavor to establish their

superiority sacrificing the development of their employees and the needs of their company.

These leaders create their own worlds where there is constant validation and no dissenting voices

which threaten the image of their perfection (Ilies, Morgeson & Nahrgang, 2005). This leads to

ignored warning signs and the squelching of critics which Dweck calls the "CEO disease".

Believing that they are already of invincible superior intelligence, those who fall into this

category ignore learning opportunities which would allow them to continue to succeed. Their

view of their superior intelligence causes an environment which values competitiveness and one-

up-man-ship. Subordinates fear them as their leadership styles are dictatorial. Leaders with fixed

mindsets kill creativity and stifle innovation as subordinates fear judgment and become primarily

concerned with pleasing the boss.

In contrast, growth mindset leaders believe in the possibilities of their own potential, as well as the potential of those around them (McCombs & Marzano, 1990). A growth mindset becomes the culture of the company as inclusivity and teamwork prevail. True growth mindset leaders guide and develop those around them and reward teamwork (Dweck, 2006). In looking at different CEO's who embodied a growth mindset, each shared a desire to grow, a passion for what they did, and a gratefulness for their workers.

Research studies conducted by Dweck (2006) and her team of researchers shows the importance of fostering a growth mindset in students. Students who had a growth mindset viewed challenges as an opportunity for learning and growth and took on more challenges. Students who had fixed mindsets believed more in innate ability and disliked effort. They were not able to handle setbacks and would find ways to avoid having their intelligence questioned. Teachers are encouraged to design classroom cultures that foster a growth mindset through meaningful learning tasks that encourage resilience and challenge, instead of focusing purely on success. Administrators are responsible for creating a culture in their schools that fosters learning; it starts begins with their mindset (Chase, 2010).

In studying growth mindset, Dweck (2006) discovered that many women and people who belong to an ethnic minority dropped out of college math and science courses. The reason identified for the increased rate of non-completion of these courses was due to feelings of not fitting in. Among the groups that were studied, the women who demonstrated growth mindset in feeling that their math abilities could improve were able to persevere, overcome negative stereotypes, and feel a sense of belonging. These women had the ability to overcome a negative stereotype and maintain their confidence in the face of adversity, by not allowing stereotypes to define them.

Key findings of this literature review found distinct similarities between innovative practitioners and from the researchers who studied innovation in leaders. Leaders who innovate through the use of technology were cited as having similar characteristics across different sources. Digital Principals are more than just knowledgeable in technology, they are effective leaders. Chapter Three will introduce the methodology used to draw out this data.

CHAPTER 3. METHODOLOGY

This chapter describes the research design, selection of case study participants, along with participant backgrounds, data sources, data collection, data analysis, and data presentation. Data collection for this study took place across the United States and virtually, through the internet using digital tools.

Research Design

This research was designed to use explanatory sequential mixed-methods to incorporate both qualitative and quantitative data about digital principals to explore the research questions. (Creswell, 2014). Mixed methods research is a relatively new and evolving field when compared to quantitative and qualitative research (Creswell & Plano Clark, 2011; Tashakkori & Teddlie, 2010). Because of this many different forms exist and are still being shaped. According to Creswell, explanatory sequential mixed-methods "is considered explanatory because the initial quantitative data results are explained further with the qualitative data. It is considered sequential because the initial quantitative phase is followed by the qualitative phase."

Figure 1: Explanatory Sequential Design

Explanatory Sequential Mixed-Method Process

The first phase of this research collected and analyzed quantitative data from an online questionnaire completed by all 15 Digital Principals. The second phase followed up with qualitative questions of four selected participants to provide context for the initial findings and to document the influences that drove them to become innovative technology leaders. Case study and the use of narrative analysis anchored the qualitative side. The findings were used to explain the factors that shaped their digital leadership and what "makes them visibly different" from other principals (Merriam & Caffarella, 1999).

Several key areas reflected in the research questions frame this study. First, the study will examine background, personality traits, training, and attitudes to gain a clearer understanding of how they developed into successful digital leaders. Second, the study explored how these leaders developed a culture of innovation and technology use in schools that is markedly different from the more traditional methods of teaching and learning. This included professional development in order to foster optimal levels of learning, engagement, and empowerment through the use of social media.

Quantitative Processes

The quantitative aspect of this research relied upon an online questionnaire developed by the researcher was given to all of the digital principals. The entire cohort of principals was included in this phase since the size of the population is relatively small, 15 total, and a list of participants was easy to compile. They were easily accessible through social media communication and there were multiple indicators that they would be willing to participate including previous participation in EdChats, podcasts and contributions to educational literature.

The advantage of this sample would be to provide a rich and deep understanding of who these leaders are (Creswell, 2014). A disadvantage would be if not everyone chose not to participate. Fortunately, all of the digital principals agreed to be part of the study.

The use of online data collection methods have become more prevalent recently because of the ease of gathering data and ability to export data into other computer programs (Sue & Ritter, 2012). The online data collection tool, Survey Monkey, was chosen because of the researcher's familiarity with the program, having used it multiple times for other projects. A link to the questionnaire was distributed through email to the participants with instructions on how to complete the form. Data was exported in pdf and Excel formats for analysis.

The online questionnaire had multiple parts. The researcher developed the demographics questionnaire by reflecting upon other studies and his research questions then choosing to collect data which might be beneficial to the study. Also included were the Mindset questionnaire (2005) developed by Carol Dweck at Stanford University and the 12 Point Grit Scale (2007) developed by Angela Duckworth at the University of Pennsylvania. Both of these instruments cited they may be used for educational purposes.

Qualitative Processes

The qualitative research aspect of this study utilized many different approaches to make meaning out of the data collected (Merriam, 2009; Creswell, 2007). A narrative analysis approach was used to examine the qualitative data. Narrative analysis relies upon the researcher's interpretation of stories and texts that tell the stories were used to make meaning of the participant's experiences, provide access to their understanding, and put behaviors in context (Merriam, 2009; Patton, 2002; Seidman, 2006). Case study data usually comes from interviews,

focus groups, documentation, archival records, observations, and physical artifacts (Creswell, 2017; Merriam, 1999; Yin, 1994).

Case Study Research

According to Creswell, "there is no lack for classification systems for qualitative research" (2007, p.7). Case study research is among the five types of qualitative research described by Creswell, which also includes narrative research, phenomenology, grounded theory, and ethnography. For this research, the case study approach was selected based upon its flexibility of using multiple sources of data (Stake, 2005) and the ability to study multiple subjects (Merriam, 1999). Case study also provides a good strategy in order to answer "how" and "why" research questions (Yin, 1994). In the end, case study research essentially enables the analysis of subjects within its specific context to gain a better understanding of the phenomena occurring.

The place of a case study in research studies is often discussed because of the unique way it handles both qualitative and quantitative data. Stake (2005) will go as far to say that it may not even fit within either branch of research, rather being its own strand. Creswell explains that "*case study* research involves the study of an issue explored through one or more cases within a bounded system" (2007, p. 73). The individual as a unit of analysis is often used to develop a generalized understanding about a group of people (Bromley, 1986; Creswell, 2007; Stake; 2005; Yin, 1994). A subject's past experiences plays an important role in considering how they act and react to current situations and can be useful in analyzing how people behave. Thus it is important that the researcher capture any information on past experiences that can be useful to make meaning out of a person's current thinking and actions. (Stake, 1995) In one sense, the research

data collected can become a biographical narrative of a person's life which can be applied as practitioners reflect on the experiences they have in their education journey.

Data Sources

Mixed methods research is viewed as a strategy of using triangulation of qualitative and quantitative approaches to strengthen the research. (Creswell, 2009) The time frame in which most of the data was collected, including documents, were within a six-month time frame. All participants waived their rights to remain confidential: however, the investigator chose to keep individual questionnaire responses confidential and only report out aggregate data. Data was stored in a secured location with only the investigator having access.

Participants filled out online the demographics questionnaire, 12-Item Grit Scale (Appendix B) and Mindset Test (Appendix C). The demographics questionnaire was used to shed light upon the background of the participants, family life, education background and use of technology. Carol Dweck's (2005) Mindset questionnaire would provide information of what type of mindset Digital Principals have and would allow us to find out if they had a growth mindset or fixed mindset. Angela Duckworth's (2007) 12 Point Grit Scale questionnaire would shed light on the level of passion and perseverance the participants have and what their level of grit was. This data would provide insights into two essential skills which may be necessary for innovative leaders to possess.

Qualitative data for this study was collected through interviews, focus groups and historical data provided by four case study participants, such as documents, notes and protocols to provide data to inform the purpose of the study. There are also many public blogs, articles,

videos and podcasts in which the participants have created or contributed that serves to establish an understanding of who they are and their educational practices.

Participant Selection

Selection of the number of participants largely depends on the purpose of the research study and what it is being discovered (Stake, 1995). The initial phase was to ask the whole population to participate in the study. This was to honor their status as nationally recognized leaders in education technology. Fourteen digital principals were contacted through face to face conversations, Facebook messenger, Twitter direct messages, text messages, and email. The 15th digital principal is the author of this dissertation and is only included in the demographic profile questionnaire and is not included as a participant. Responses from the digital principals were 100% affirmative with immediate confirmation of participation in person and between three minutes to twelve hours electronically.

All 14 digital principals were included in the initial quantitative phase, then 4 digital principals were selected to participate in the secondary qualitative phase of the study, primarily as case study participants. Selections were made by the researcher after analyzing which digital principals had the most engagements with him over social media and in person during the past year. This was done because many of the barriers to data collection would be eliminated because of the previous contact and establishment of trust. (Creswell, 2014).

Data Collection

Data were collected through interviews, focus groups and existing data from participants, such as documents, notes and protocols, along with online resources. A Survey Monkey demographics questionnaire, background questionnaire, 8 item Mindset Test and 12 item Grit

Scale was administered in June 2016 with all participants completing it in less than three weeks, taking an average of 9 minutes to fill out the forms.

Interviews and focus group conversations were conducted across the country and through three primary venues—Google Hangout, Apple Facetime and the Voxer application. Voxer is a "fast, simple, voice and messaging app" (Voxer, 2016, line 3) which has a push-to-talk functionality similar to a walkie-talkie, photo, or video and works across multiple mobile operating systems and desktop platforms. The advantage of using a system like this is that messages can be stored and later retrieved by the recipient(s) at their leisure. Live conversations can take place with multiple responses being received at the same time without participants "talking over" each other. A Digital Principal Voxer group was formed for focus group discussions. Google Hangouts on the other hand serves as an integrated communications system which included instant messaging, short messaging system (SMS) better known as texting, Voice Over Internet Protocol (VOIP), and video chat. Google hangouts was primarily used when live interviews took place. Apple FaceTime is a proprietary videophone application that was used to conduct interviews when the previous two options were not feasible.

Participants were informed of the purposes of the study, the protocols for protection of their privacy, and any potential benefits of the study. The University of Hawaiʻi at Mānoa Institution Review Board approved this study. Audio recordings of interviews were made for the purposes of transcription. All recordings and personal records were stored in a locked file within the researcher's office for the duration of the study. All personal information, recordings, and transcripts was destroyed upon the completion of this study.

How Data Were Analyzed

Data for this study were organized according to the following steps as recommended by Creswell (2014). While presented in a linear fashion the steps are interrelated so the process of data analysis was dynamic and adjusted according to the needs of each of the cases as the data unfolded through the process.

1. Organize and prepare the data for analysis.

2. Read or look through all the data. This first step provides a general sense of the information and an opportunity to reflect on the overall meaning.

3. Start coding all the data.

4. Use the coding process to generate a description of the setting or people and identify as well as categories or themes for analysis.

5. Advance how the description and themes will be represented in the qualitative narrative.

6. A final step in data analysis involves making an interpretation in qualitative research of the findings or results.

Artifacts were organized on the computer into separate folders depending on the type of source material (i.e. interviews, focus groups, questionnaires). All of the data went through multiple reviews with electronic notes taken to highlight some of the more important pieces to be used for the research.

Coding. Data was coded using the qualitative analysis software Max QDA and QDA Miner Lite and switched to manual coding when the limitations of the software were reached. A significant amount of time was dedicated to developing codes for topics that could be useful for

the study. An outline of the major topics and themes to be discussed in the analysis of the data was created. Quotes were notated to express and/or support the analysis. A story of who these Digital Principals are was then constructed out of this information interconnecting their practices, with their background experience and expertise.

Triangulation. Using multiple sources of data to verify the meaning of the interpretation or to further question the assumption is triangulation. (Stake, 2005). This method will allow for a greater insurability of repeated findings. Using triangulation allows the researcher to have a greater perspective of the phenomenon by filling in the gaps in the complete picture (Stake 2005; Merriam, 1998; Yin, 2003). Triangulation may also include the use of multiple methods and varying the type of data (Merriam, 1998). For this research, sources of data were triangulated to identify the major themes that arose across multiple data sources.

Member checking is a way to verify the data collected with the participants to establish accuracy and correct interpretation (Merriam, 1998). This is also part of the triangulation and helps by allowing for the enhancement and clarification information (Creswell, 2009). Member checking was done throughout the research as the author was in contact through social media, email or other communication apps with participants. Transcripts, collected data, and excerpts of the research paper were electronically transmitted to the participants for verification.

Assumptions and Limitations

There are many limitations to a study that may not be fully controlled by the researcher (Creswell, 2007; Merriam, 1995). Time is the first limitation as research was conducted over the course of 18 months by a busy working professional who was still in the coursework phase of their doctorate. Questionnaires are only as good as the questions asked by the researcher and

many questions were not asked in order to shorten the time required to complete the online questionnaire and interviews. Additionally, mindset and grit can change in an individual over time; thus, test vs. retest reliability may produce unstable results and are also affected by the quality of questions asked. (Duckworth, 2016, Dweck 2006). An example is the 12-Item Grit Scale which has a comparative fit index = .83 and root square error of approximation = .11. α = .85. While this instrument has a high internal constancy, it is not foolproof (Duckworth, Peterson, Matthews, & Kelly, 2007).

Distance and time zones limited the scope of the work as it is difficult to travel to meet in person. As such, the online component of the study served to facilitate the participation of digital principals across the nation. However, the use of electronic data collection and social media protocols is still emerging as a research methodology.

Lastly, the study solely focuses on successful Digital Principals, but there is no established baseline of all principals and the work that they are doing in advancing the use of technology in schools. As such, the results cannot be generalized or compared to the larger population of principals at this time.

However, the common interest among digital leaders, with respect to education technology, provides adequate access to the leaders and participants who are included in this study. Additionally, there were conferences where a majority of leaders would gather for face-to-face conversation. Both venues served to facilitate access to data. Because of these commonalities one might assume that the fallacy of "group think" might exist and impact the collection and analysis of the data. There is camaraderie and mutual admiration for each other's work. Often, informal gathering after meetings at conferences allow for opportunities to talk and

commiserate. Despite these commonalties, the participants in this study are those who consistently challenge the status quo, which results in some healthy disagreements within the network of leaders. As is natural in the process of facilitating change, occasionally, the harmony is temporarily disrupted.

It is assumed that the use of technology in education will not go away any time soon. Likewise, the need for educational leaders utilizing technology will be an ongoing requirement to improve schools and student learning headed into the future. Given the data presented it is assumed that all the information collected is actuate with questions by the participants answered to the best of their abilities and knowledge.

Threats to Validity

The internal validity threat as a researcher is not one to be taken lightly. When conducting any kind of study it has to be asked if the researcher collect the right type of data to make a proper analysis (Merriam, 1995) and be able to draw correct inferences from the data about the participants (Creswell, 2009). As the author is a digital principal and has insider perspective into the workings of the participants it is surely the primary threat in which to be aware. Sample size is small given that only 15 principals have been recognized so far. These are questions which researchers need to be conscious of. However, the data received is rich in information, particularly when viewed as a whole. Survey instruments for mindset and grit have been questioned and the research about use of these surveys in an educational context has not been widely studied.

With the researcher also being a digital principal award recipient he is an insider in a small circle of leading education technology administrators. This insider perspective makes it

easier to coordinate and allows for access to people and information (Merriam, 2001) but might also create bias in the analysis, reporting, and writing. Merriam goes on to say that the researcher has to be up front with their assumptions because this allows the audience to have a greater understanding of how the data was analyzed and interpreted.

It is of upmost importance to present a detailed and clean interpretation of the data and to report findings that are accurate. The use of electronic means to collect data might pose new issues that haven't been explored when compared to tradition research practices. Technology must be used appropriately and effectively to achieve the outcomes for as successful study. It must be remembered the wise use of technology is important in education, but understanding how to cultivate the leadership to harness technology to drive successful programs is really at the heart of this research. Chapter Four will analyze the data collected using the methodology described in Chapter Three.

CHAPTER 4. DATA ANALYSIS

This chapter analyzes the data collected about the Digital Principals using a sequential explanatory mixed method approach (Creswell, 2014). The information presented is derived from an online questionnaire, focus group interviews, individual interviews and artifacts. The questionnaire allowed for quantitative data gathering of demographic information while the interviews helped to formulate the quantitative data.

A description of participants by significant summarized demographic data is presented in this chapter, with biographical information located in Appendix D. A summary of the results of the 12 Point Grit Scale (see Appendix B) developed by Angela Duckworth at the University of Pennsylvania and the Mindset Questionnaire (see Appendix C) developed by Carol Dweck at Stanford University completes the quantitative data set.

A focus group of Digital Principals was presented with the results of the quantitative data for comment to aid in the identification of areas of focus for the interviews, which were conducted as part of the qualitative methodology. Derived themes from the four individual interviews are presented first as separate cases followed by cross-case themes. Quantitative and qualitative data will be presented and analyzed through methodological triangulation in Chapter 4, with the findings and implications revealed in Chapter 5.

Questionnaire

Participants completed a demographic questionnaire to obtain general characteristics of the 15 digital principal in the study. Obtaining demographic data of the study participants allowed the comparison between the results of the12-Item Grit Scale questionnaire (see Appendix C) and Mindset questionnaire (see Appendix D) to similar population groups. Study

participants provided demographic information including age, gender, ethnicity, race and education. Responses were collected via Survey Monkey over a two-week period. While the sample size is small, (n = 15), 100% of the Digital Principals completed the questionnaire.

Demographics of the participants. Digital Principals ranged in age from 35 years to 64 years of age. Of the 15 principals, 13, or 86.7%, fall in the age range of 35 to 44, with only 1 out of the 15, or 6.7%, in the 45 to 54 age range and 1 out of 15, or 6.7% in the 55-64 age ranges (see Appendix D, Table 1). In comparison, information from the National Center for Educational Statistics shows that 37.4% of school principals are less than 45 years old, with 31.1% falling between the age range of 45-54 years old, and 31.6% 55 years or more, (n=789) (National Center for Education Statistics, 2013). As a cohort, the digital principals are younger than the national average of school principals.

Digital principals are primarily male, 13, 86.7% (see Appendix D, Table 2), while the national average of school principals is 47.6% male (National Center for Education Statistics, 2013). Two, 13.3%, of Digital Principals are females compared to the national average where females represent a majority at 52.4%.

For racial/ethnic background thirteen Digital Principals, 73.33% (see Appendix D, Table 3), identify as White/Caucasian which is slightly lower than the national average, which is 87.3% White/Caucasian (National Center for Education Statistics, 2013). Three Digital Principals, or 20%, identify as Black/African American, which is significantly higher than the 6.7% of the national average of Black/African American Principals. One Digital Principal, or 6.7%, identifies as Asian American/Pacific Islander which can only be indirectly compared to the 2.5% Other/non-Hispanic category, which includes American Indian/Alaska Native, non-Hispanic;

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Asian, non-Hispanic; Native Hawaiian or Other Pacific Islander, non-Hispanic; and two or more races, non-Hispanic. Overall the Digital Principals are more diverse in racial/ethnic background than the national average of school principals.

The undergraduate majors stood out in one field, history/social sciences. Ten of the Digital Principals, or 66.67%, received a bachelor's degree in an area related history/social sciences. Two principals, or 13.33%, received a bachelor's degree in elementary education. Two, or 13.33%, in English/language arts, and one, or 6.67%, in sciences/technology (see Appendix D, Table 4). No comparison data for undergraduate majors was available from the national sample of principals. All 15 of the Digital Principals reported having a master's degree compared to the national average of 31.3% for the sample of principals (National Center for Education Statistics, 2013). Additionally, three of the Digital Principals, or 20%, received a Doctorate or professional degree compared to 9.7% of the national average of school principals.

Nine of the Digital Principals, or 60%, did not have a parent who completed a four-year degree while 6 principals, or 40%, had one or more parents who went to college and completed a four-year degree (see Appendix D, Table 5). Academically, Digital Principals received more formal academic training than the average school principal.

Every Digital Principal, was involved in one or more co-curricular activities while in high school, as compared to 79.9% average of public school students nationwide in co-curricular activities (O'Brien & Rollefson, 1995). Fourteen principals, or 93.3% (see Appendix D, Table 6), participated on athletic teams compared to 42.4% of public school students who participate in athletics. Ten principals, or 66.7%, were involved in student government activities, compared to 15.5% of students who participate in student government. Six principals, or 40%, were in the

National Honor Society compared to the average of 18.1% of public school students, who participate in honor societies. Six principals, or 40%, participate in community service organizations, compared to 15.2% average of public school students who participate in community service clubs. Five principals, or 33.33%, were on academic teams compared to an average of 26.2% public school students who participate in academic teams. Overall Digital Principals participated in more co-curricular activities while in high school than the average student across the nation.

In summary, here are the demographic highlights of the Digital Principals in the NASSP cohort. The majority are younger in age than the average principal and are primarily Caucasian males. All were highly active in high school co-curricular activities, almost everyone in athletics followed by student government, with many participating in multiple organizations or activities. A large portion of them studied in the humanities, specifically history/social sciences. Most of them were first generation college students and all of them hold advanced degrees. Many of them have also coached some kind of athletic team.

12-Item Grit Scale. The 12-Item Grit Scale created by Duckworth from the University of Pennsylvania (Duckworth, Peterson, Matthews, and Kelly, 2007) consisted of 12 questions. The grit scale was taken by their study participants, n=1554, who responded and rated themselves on a scale of indicators. The scale consists of a five-point Likert scale, with responses ranging from "1 - not like me at all" to "5 -very much like me." Responses were tallied and then divided by 12, which resulted in the participant's grit score. The maximum score that could be received was a 5, which indicated the highest level of grit. The lowest possible score was a 1, which indicated the lowest level of grit. The twelve questions measuring grit level could be further broken down into six questions measuring level of perseverance and six measuring level of passion. In

Appendix D, Tables 7-8 the names of Digital Principals are not revealed in the tables and scores are presented according to the order in which the questionnaires were completed.

A total of 15 principals participated in this section. The high score was 4.7, the low score 2.8, the range 1.8 (see Appendix D, Table7). The mean score for the Digital Principals was 3.9 which compares to Duckworth's study in which participants had a mean score of 3.4 (Duckworth & Quinn 2009). On average Digital Principals had slightly higher grit scores than those in Duckworth's study.

The 12-Item Grit Scale scores of the Digital Principals can be broken down further into perseverance questions and passion sections. Of the 15 participants, the perseverance score was calculated. The high score for perseverance was 5.0, the low score 3.2, and the range 1.8 (Appendix D, Table 8). The mean perseverance score for the Digital Principals was 4.3. In Duckworth's study (n = 1554), the mean perseverance score was 3.7. Of the 15 participants, the passion score was calculated. The high score for passion was 4.8, the low score 2.5, the range 2.3. The mean passion score for the Digital Principals was 3.5. Duckworth's study had a mean passion score of 2.9. The Digital Principals perseverance and passion scores were higher than the sample in Duckworth's study.

Mindset Quiz. The Mindset Quiz (see Appendix C) was created by Dweck (2005) from the Stanford University. The Mindset Test was taken by the study participants who responded and rated their responses. The ratings were presented in a six-point Likert scale, with responses ranging from "Strongly Agree" to "Strongly Disagree." Responses were tallied and scored based upon whether they agreed or disagreed with the questions. A total of 15 principals participated in this section. The high score was 8, the low score 5, and the range 3 (Appendix D, Table 9). All of

the digital principals showcased an inclination to growth mindset rather than to a fixed mindset on the questionnaire. In her research, Dweck extrapolated the results to say that 40% of the general population possesses a growth mindset.

The higher scores for Digital Principals on both the 12-Item Grit Scale and Mindset Quiz shows that collectively these principals have a propensity to have both high grit and growth mindsets. However the range of the grit score shows that not all of the Digital Principals individually possess high grit. On mindset the higher scores show that most of the Digital Principals have a growth mindset. From the scores of the Digital Principals, there is no indication that any of the principals possesses a fixed mindset.

Within-Case Analysis

Case studies are useful to understand educational programs and the people within them in a descriptive and explanatory form (Stake, 1995). A case study assists in creating meaning out of a particular subject (Merriam, 2009). Multiple cases what bounded together by a common characteristic, in this instance, award-winning Digital Principals. These cases, when combined together, provide an interpretation of this particular occurrence by drawing out individual characteristics (Cresswell, 2007). Digital Principals Bobby Dodd, Derek McCoy, Glenn Robbins and Bill Ziegler were selected to participate in this portion of the study. Selection was made after analyzing which digital principals had the most engagements with the researcher over social media and in person during the past year. In this section the major themes that emerge include the following; curiosity, continual learning, professional learning networks, struggling learners, and empowerment.

Bobby Dodd, 2016 NASSP Digital Principal

Bobby Dodd is the Principal at New Gahanna High School in Ohio. His path to education administration was a bit unconventional. He graduated from law school and worked in the family business for a while, then ended up going back to college to get a bachelors degree in information technology. According to Bobby, "it was just something I was interested in. Technology in the late 90s was starting to really get popular."

A technology teaching position opened up at the local high school after his brother-in-law got promoted. His wife Charity was a business teacher there and he explains, "So really whilst finishing up my degree in information technology, the principal asked if I was interested in teaching." Being a small town there were not many people with technology background. Dodd thought about it and decided, "I want to try something different." After a few years he wanted to try something different again—administration.

Curiosity leads to creativity. The sparking of curiosity is one of the roles of educators, and parents. It allows children to wonder, explore and become leaders (Couros, 2015). Wagner (2012) says curiosity "is a habit of asking good questions and a desire to understand more deeply." As a child Dodd was very energetic and curious. He explains his curiosity in this way, "I was always outside, was always getting into different things, and I was always investigating the creek and that area." He often would have friends over for different games, basketball, football or wiffleball. Dodd enjoyed and spent most of his time playing sports outdoors. He asked many questions about sports, something that helped him to bond with both of his parents who loved anything athletic. They were always eager to answer his questions.

Before he turned ten years old Dodd picked up the sport of golf. He would practice hitting targets around the property when he could not get to a course. As fun as it was, "it was not the same as lining up a shot for birdie," he said, as he saw famous golfers on his TV screen do. Dodd credits his early years with cultivating an attitude that allowed him to, "Develop a mindset to foster my own ideas and creativity." His curiosity turned into a passion, which then developed an interest in creative design. Dodd shares,

> "When I was younger I made my own golf course, 18 holes, we had like 3 acres of property. One day when I was outside, I began to think about what it would be like to have my own golf course at home. I started to look around and thought about designing a golf course in my own yard. I thought about what I would use for holes (soup cans with holes poked in the bottom), how the different holes would be designed (obviously arranged around our house to limit the amount of broken windows from errant shots), and what would be considered par on each of the holes. I walked the layout of the land, drew visuals in my head of what each hole would look like, and how difficult each hole would be to score par or lower on it. I visualized it and knew it would be better than hitting shots at targets all day."

This was not an easy task for a young boy, but he had a systematic process of how to go about being creative. This process is similar to how he operates as a school leader.

Coaching is not only for sports. Dodd believes that school improvement and innovation starts with coaching. Just like sports, which is a passion of his, the ability to lead a team of educators begins with his ability to coach them. He knows that great coaching can, "completely change an environment and culture" of a school. It also means having the courage to work to

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make corrections and adjustments. Dodd feels that providing feedback allows teachers and students to become better.

He believes that being an effective coach starts with building relationships. Then, when difficult situations arise, they can be handled in a respectful way. "People have told me I'm able to have critical conversations with kids or parents or staff members" according to Dodd, "I guess it's not very popular with leaders these days, but I don't have any problem doing it so." He starts with positives, addresses improvements, and then finishes it off with positives. This is an approach shared by the famous UCLA basketball coach John Wooden. It honors the people Dodd is coaching by demonstrating appreciation for the positives and assisting in the areas of needed growth.

Continual learning. Being curious is one thing, finding out the answers is another. "Good leaders always continue to learn" says Dodd, "I was researching, looking for things that are things we can do to help staff help ourselves, how to help kids grow." As a principal Dodd considers himself the "Lead Learner" of the school. The phrase was coined by Dr. Joe Mazza and used instead of the title principal. This conveyed the importance of the administrator continuing to grow and helping others to grow through modeling learning. (Mazza, personal conversation)

Connecting with people over social media has been a great learning opportunity for Dodd. He is a co-moderator of #OHedchat the largest Twitter chat in the Midwest. "Connecting with your PLN is a huge professional development opportunity." He also sees the benefit from conferences where you can meet one-on-one. "The advice and support from the discussions we have in person is invaluable." advocates Dodd, "The ice has been broken because of the previous

connections over Twitter." He takes these ideas and shares them with his staff to implement. For Dodd relationship that he builds through social media are equally as important as the relationships he builds in his school.

Meeting the needs of students. According to Robinson (2015, pp. 56-57), innovative educators "understand that learning comes in a wide variety of shapes and sizes, that kids can't all be taught the same way." Dodd started an afterschool program called Project Youth for students who were struggling in a "traditional" school setting. He explains, "It was an alternative school for at-risk kids and allowed them to get jobs or not come to school until the rest of the kids let out of school."

Teachers and intervention specialists would tutor after regular school hours. "They're really helping these kids with online curriculum to get credits" according to Dodd. Clubs built into the program, like cooking or archery and intramural sports, help them to feel like part of the school. It was a different way to do school. "We created a college going culture down there. We brought engineering there too which turned in later to fabrication lab." Dodd saw a need to help students and utilized the resources of time, space and technology to make it happen.

The orchestrating leader. To understand Dodd a person needs to spend time, a lot of time, with him. He is complex and unassuming. He is sharp as a whip, a leader who can execute ideas because of his strong understanding of what needs to get done. A quick review of his writings at glhsprincipal.blogspot.com reveals a person that can take in knowledge, mix it with his own experiences, and produce an array of solutions to meet the needs of teachers, parents and students. He is a blend of hard and soft depending on the situation. Firm would be a good way to describe Dodd. He doesn't hesitate to call out bad practices, always thinks of the people his

decisions may impact, and, most of all, doesn't accept or make excuses when things need to be addressed. The innovation that occurs is because of the vision he casts and the thoughts he provokes through reflective thinking and experience.

Derek McCoy, 2014 NASSP Digital Principal

Derek McCoy is the principal of West Rowan Middle School in North Carolina. He was a political science major with a black studies minor, on track for law school, but later decided to switch to purse a PhD in public policy. He started graduate school but found that, "while I was in it, I was hating it, my heart was not in it." Every year in college McCoy was a math tutor to high school students. He discovered a passion to teach. He got his masters in middle grades mathematics and "haven't looked back because I loved it, I always loved math."

While in college he tutored college math students in the Upward Bound program for first generation college students. He was in the same program as high school student. "If I was not in Upward Bound I would have gone to college, but I probably wouldn't have graduated from college." Says McCoy, "it was fun; it was cool stuff."

Hyper gifted. McCoy was the youngest of 12 kids. His dad was a farmer and his mom worked a couple of jobs, including one as a teacher's assistant at school. Neither of his parents graduated from high school but they made sure that their children would graduate from high school and go on to college. "I was hyperactive as a child, grew up in rural community," according to McCoy, "one of those classic students that teachers didn't know how to deal, or didn't even try to deal with me as a student so for a while I struggled, kindergarten to third-grade, it was pretty bad." His says his mother tells a story about how his elementary teachers wanted to put him in special education, but she fought that.

I will never forget her name, Mrs. Brenson, she was a transplant from up north. Her

husband took over the church in the local town. She happened to be gifted certified and

she brought the gifted program to the school. I was identified and that's really one of the

things that saved me. She started my passion-based learning at that point. Got me to study

Greek mythology, reading comic books and a whole lot of other things. So now I was

seen as smart, precocious.

Mrs. Brenson explained to his parents that they needed to keep McCoy challenged, and they did.

They now understood why he would always be asking "why", and then life became "pretty

good." He hopes to see students blossom because they have teachers and support systems that

will allow them to grow.

Helping others to grow. Helping educational professionals to grow is a passion

of McCoy's. It became a focus of his, one that he put much effort into. "I had to work

hard at working with people to see professional growth," McCoy said, "where I am now

today is because of the mentoring that I received." He had tremendous support from

others to help him recognize what needed to be done, how things should or might be

said, and how items should be planned and laid out. So when he works with his school

staff, professional development/learning conversations are at the top of his list.

McCoy helped to change the nature of professional development to meet the individual

needs of his staff. At one of his schools, Tuesdays were set aside for professional development.

Over the years McCoy has seen a static approach to PD delivery. Instead of it always being large

group he changed it to smaller personalized pieces. "Teachers can pick their own path for

learning and what they want to study," relayed McCoy. There was also an intense focus to build

skills that all teachers need to have—relationship building, technology integration, and data driven instruction. The "one size does not fit all" approach changed the way teachers taught and students learned.

McCoy also feels that relationships are the key to a successful school. "I had to learn what relationship building looked like in the classroom [as a teacher], and had to work on [developing] that as an administrator." He feels that helping teachers, "without them feeling threatened or at least minimizing the threat" is one of his strengths. McCoy can then draw out the best in them because of the relational groundwork he has laid.

Thinking outside the box. Sometimes schools fall into a rut where there is a certain routine-certain ways things are being done in a particular way. McCoy encourages lateral thinking, the process of creative problem solving, and experimentation among teachers. He senses that support for safe risk-taking from the administrator goes a long way to helping his faculty to formulate "out of the box" ideas. Creating flexible environments, collaboration rooms, and innovative teacher classroom setups were all outcomes of this process. It wouldn't have happened without McCoy as a leader saying, "try it out and see if it works."

One example of an innovative program is student-led conferences. McCoy says, "It's about challenging the status quo, not being happy with the way things are, and wanting to do some things differently. The school had heard about student-led conferences and wanted to see if that could be a part of what they could do. It became an area of study for the staff as they researched how to implement it. It also took encouragement and the assurance that putting students in charge of their own learning would be work. "It takes courage for teachers to say let's take this on as a learning topic, to put that out there," said McCoy, "I think we all want to build

up cultures where teachers can feel comfortable making contributions." His willingness to hear the ideas of faculty, the permission to implement programs, and the reassurance that their efforts would be productive helps to drive the positive change at his school.

Borrowing ideas from the professional learning network. Social media is a tool that enables professionals to connect to with other educators all around the world. The practice of following people and organizations on a platform like Twitter allows access to ideas and practices. This Professional Learning Network (PLN) also helps answer questions through either direct conversation or topical EdChats (Currie, Krakower & Rocco, 2016). Using this platform McCoy is able to harness the power of the internet to infuse fresh ideas into his school. "It stems from our PLN, hearing some inspiring things that are getting done in another schools, in other districts, and bringing those ideas to our school" McCoy explains, "then it is imagining that here and how it can be implemented to make a difference for teachers and students."

McCoy engages in many twitter chats and has PLN conversations regularly through various social media tools. He even took a few ideas from fellow Digital Principal Glenn Robbins based on a post from Robbins. "Six surfboards for genius bars, some collaborative spaces in the hallway for kids, all of that was from Glenn." says McCoy, "It brought back to my school what we already have as a core value [collaboration]. It says that we create an environment where kids collaborate and create great learning products to demonstrate learning." It was not an exact replica of the idea, but something that could work, given the limitations of space and functions of his school. McCoy shared that innovation is sometimes taking the best ideas and tweaking them to meet the needs of your school. He encourages his staff to participate as well, gleaning the best ideas and implementing them at their school, in their classrooms.

The encouraging leader. "Awesome" is a word frequently used by McCoy. It is a word that is representative of the way he thinks and acts. A bundle of energy, he frequently encourages the people around him through his words and action. It's that understanding of relationships and how he can positively influence others that allows him to effectively lead his school. He admits he can't be the best at everything, but he knows how to surround himself with thinkers and doers in order to improve things for students. In fact, his reliance upon the expertise of his staff only helps in the development of the collective growth of the group. The innovation that occurs at school is a team effort facilitated by the leader.

Glenn Robbins, NASSP 2016 Digital Principal

Glenn Robbins is the newly appointed superintendent of Tabernacle Township School District, a few miles away from where he was raised. He is the former principal of Northfield Community Middle School. Robbins grew up in a blue-collar family; his father was a third generation well driller and his mother was the office manager's secretary. His parents were hard workers and did the best they could to raise two boys while putting in long hours at their family business. His grandfather would often say, "If [you] want to wreck a good man, send him to college." His dad however wanted him to go to college. Growing up, Glenn had aspirations of becoming a professional soccer player. As a high school student he was ranked as one of the best soccer athletes in the nation. Later, it would be through coaching soccer that he became involved in education, as he realized "the awesome effects of working with kids,"

I hated school. Every child has a unique and different reaction to their school experience. "I hated school; I absolutely hated school!" Robbins says empathically, "School was a joke to me, it just never pushed me." His dream of course was to become a professional soccer player. He hated reading as well and only did it when it was suggested that he read something he enjoyed. "I read soccer catalog

magazines and by the end of the year I could tell you whatever shoe[s] or professional uniform[s] they were wearing." according to Robbins. "I was told to hit the books, but it wasn't demonstrated how to hit the books, I didn't know how to study."

Robbins states that he did have some really great history teachers that he loved in high school. "They were young guys, the coolest guys, they had fun games and taught the subject completely different than everyone else." he would say. To him, everything else was boring because it was traditionally taught.

> I was not a good student at all. I was well behaved, but I had no inkling, no desire whatsoever to hit the books. I attribute that to teachers not reaching out to me, not really capturing my inner fire. We always talk about trying to reach out to kids, find what pushes them, what motivates them, [my teachers] didn't utilize that. I guess that was a product of old school teaching, and even then, they didn't tie it into anything relevant. So I just got bored.

Robbins realized that soccer was not going to pay the bills. He got his priorities in order in college and started focusing on education during his freshman year of college. He taught himself how to study. He had acquired a lot of common sense, street smarts, and learned how to turn that into book smarts. "I just look at schools and say why can't it be different? That's what my fuel, my passion that I don't want anybody to suffer how I suffered." Robbins adamantly exhorts, "That includes teaching, that includes spaces, that includes vocabulary, that includes support, that includes everything about school. Why do we even call it school; why don't we call it something else to get kids really excited?" Robbins truly turns the traditional norms of school on

its head to make it a better place for students. He doesn't want students to have the same negative experience he had.

Spacing, not spacing out. "The school of life is tough enough in 2017. With all these economic hardships for families it's tough to be a kid." Robbins explains in his New Jersey accent, "Why shouldn't schools look like Google? I just want it to be different. I'm tired of that status quo, tired of that's how it should be, and it has to change." Robbins doesn't believe that all learning has to take place in the classroom. He looked at his hallways and saw an untapped resource. Idea Streets was born because of his vision.

The bulletin boards in the hallways at Northfield Community Middle School were replaced by whiteboards, an idea taken from Stanford d.school, at Stanford University, so students could write and collaborate on projects. Even the windows to the library could be drawn on with markers. A 10' x 10' Lego wall for students to express their creativity was put up. Genius bars for the student-led tech squad were designed to look like surfboards, a homage to their proximity to the Jersey shore. Exercise bikes line the hallway to let students blow off steam. "I wanted something completely different. I want that awe-like moment when the kid walks in. This is where I want to be, I never want to go home now."

Robbins asks, "When someone enters your building or classroom, is it inviting them to be innovative or does it bring out a sense of something else?" As a principal, now superintendent, Robbins still wants students to have all of the standards when they go to the next level of learning, but he also wants them to have more. "You want them to have the soft skills, to have a conversation, to respect who they are, and to be empathetic, but most importantly, to enjoy learning. How can we make school a different experience for kids to really love it?"

Making things happen. Building prosthetic hands on 3D printers for the pediatric ward of the local hospital is a learning experience for Robins' students. Being invited by the White House to present for National Maker Faire is another. "I'm tired of the same stuff over and over again. I want something so much better," Robbins passionately conveys, "I want that curiosity, wondering. I want that hands-on maker. I want school to be fun."

Robbins started the maker movement at his school by putting a disassembled computer in the hallway along with some Lego robotics kits. The challenge for the students was to get the computer working again. Instead of hanging around their lockers students began to gather around the table to rebuild the computer. One student stayed after school and finally got it working again. Robbins shared the big revelation regarding the student's accomplishment, "He demonstrated what he did, and then, powered it up with a huge smile on his face. He was so proud [of] what he had done that he didn't even ask for the prize."

The design shop allows students to work on projects that better the community. It is an old computer lab turned into a Makerspace. Many of the projects are done in conjunction with the local hospital to help pediatric patients. They utilize the Design Thinking process which calls for empathy in solving real-world problems, another idea taken from Stanford d.school. Students work in teams to ideate, design, fabricate, prototype, and test solutions for the clients. It's that empathy that Robbins feels is key to the students learning by providing purpose to what they are doing. It is that same empathy that he has for staff and students that drives him to improve his school every day.

Student voice, student control, student learning. Traditional school schedules still include homerooms, class periods, study halls, and other adult driven instruction times. "We tell the students what

to learn, when to learn, and how to learn. Our world continues to change, yet schools don't," laments Robbins. In order to turn learning on its head Robbins introduced the EdCamp model for professional educators and transformed it to a model to be used by the middle school students in fifth through eighth grade. According to edcamp.org, "EdCamps are organic, participant-driven professional learning experiences for educators across the country and worldwide!" (2016, Line 1) They essentially rely upon the expertise and collaboration of group members rather than outside experts.

"In student-led EdCamps everything and anything is possible to learn. The voices of the learners are heard!" Robbins explains, "Students pick the topic they want to learn, they control their learning, and teachers are facilitators who learn alongside their students." All this is ungraded, yet learning takes place. As Robbins continues to explain the process goes like this. Students put ideas what they want to learn on a whiteboard. The initial sessions at the school included, "Build It", "Stock Market Game," "Make an App," "In the News," "School Newsletter," and "Mix It Up."

Students signed up for the session they want to be in and attended the class for full week. Students led their sessions and teachers standby to assist. By the end of the first period students have already divided up into teams and assign roles for the activities they want to take on. The evidence of success comes from the reflection and reaction of the students and teachers. "Epic, game changers, empowered, ownership. When do you even see students run to sign up for a class?" asks Robbin, "It happens in student-led EdCamps."

The creative thinking leader. The excitement in Robbins voice when he speaks about transforming schools is reflective of the excitement that he wants all students to experience through their educational journey. It is the way he leads, with passion and purpose, enthusiasm and zeal, confidence and courage. He thinks why not, when others don't think it's possible. A true out-of-the-box thinker, he is

driven by his past, to make things better for the future. Nothing is off-limits, and everything is in play. To innovate, to change, is a daily occurrence. Status quo has no chance in his schools. These things are done because of his commitment to want things to be better for his staff and students.

Bill Ziegler, 2015 NASSP Digital Principal

Dr. Bill Ziegler is the Principal of Pottsgrove High School in Pottsgrove, Pennsylvania. Recently named the 2016 Pennsylvania State Principal of the Year, Bill also serves as the President of the Pennsylvania Association of Elementary School Principals. Ziegler rose from humble beginnings, his father was a machinist and his mother cared for Bill and his sister. "My parents didn't go to college so they were really hoping that their boy would be the first to graduate from a four-year [college]." He says, "I [came] from a very strong-knit, caring, loving family." Ziegler often says, "Chase learning, not technology" to encourage the purposeful use of technology to impact student learning. In fact Chase Learning is the name of his educational consulting firm and the hashtag #chaselearning the place to find out more about his endeavors. A devout Christian, Ziegler said his greatest accomplishments in life are being married to his wife Kim and having two wonderful children.

Not college material. School did not come easy to Ziegler and it was made even more difficult by the comparisons made to his older sister. "I was the younger of the two. My sister was four years older than me, and got good grades in school. She was the top student in class all the time and I wasn't even close to that." Ziegler says, "When I got the same teachers that she had, [they] asked me, 'Are you really Jane's brother? What happened in the four years between you and your sister?'" His struggles became more profound when he entered high school,

I had a teacher [call] my parents for a conference and he [shared], "your son is not

college material and is never going to make it to college" "That pierced, I think, the

hearts of me and my parents, and I actually began to believe that a little bit. So I
[struggled] academically. I almost failed ninth grade and had to take remedial courses at
the community college."

Testing also was not his thing. He had low scores on his SAT scores and failed his community
college entrance exams. So how did he make it through college? Ziegler says, "I think resilience.
That's one skill set that I think is really important is that I'm resilient." He also recognizes the
school staff for their "resilience, grit and perseverance" in working to make the school better. It
is that resilience that he hopes to build within the student body as well.

Very involved socially. Although not academic by any means, Ziegler was, as he
describes, "very involved in the social aspect of high school." The best way to characterize his
personality, would be a friendly, people-person. As he shared, "I was highly interactive and
social, had a lot of friends, was president of the band, you know, very involved in school—just
not academic." In turn co-curricular activities was a huge part of his school, and band and the
arts are at the top of the list of programs which he makes sure has the necessary resources and
support.

There are aspects of caring in his interactions. Ziegler is empathic to others because he
wants to see the best being drawn out of people. "I went into education to make a difference in
the lives of students and without a doubt, for me, that is the biggest thing. I really wanted to
make an impact on the lives of students and to really help shape and mold this next generation by
building great relationships with them." He encourages his teachers to play a big role in the lives
of the students through thoughtful interactions with them. "It is important to be out and about
and be a part of people's lives," Ziegler says.

A curious dreamer. Ziegler is a dreamer. Having a dream, or vision to pursue, is a key aspect of being an innovator (Couros, 2015). Ziegler shared, "I would dream during the day. Things that I would be doing, the great things I would do when I become an adult, I dreamt, just like most kids, about being a pro baseball player, but also how to really make a difference in this world." This has inspired Ziegler to allow his students to dream and to help them achieve them. This is done most often done by providing fun and exciting experiential learning opportunities.

Ziegler described himself as a fun and playful child, both caring and curious. As he shared, "I was always creative. I would try to create things, build things, design things. We were always out building forts, building models or doing something." So when it comes to Makerspaces, and even Breakerspaces where students take things apart, you will often see Ziegler curiously watching and interacting with the group. By creating these opportunities he recreates some of his childhood experiences and encourages student learning.

Students take over. Ziegler is not afraid to let students take over things at the school. He handed over the school's Twitter account to the senior class president to allow "the world to have a glimpse of what it is like at their school from a student's perspective." He also has a Student Digital Team that helped to build and support their 1:1 laptop program. These experiences allow students to engage in the real-life professional work of planning, implementing, communicating, and facilitating innovative change at their school. Their input, along with the teaching staff, was valuable in creating a seamless implementation plan for technology at the school.

Students are involved from everything including the daily troubleshooting of device and software issues, to educating their peers on digital citizenship and the dangers of cyberbullying. Morning announcements include hashtags, so students "know what to follow to keep up with

what's going on at school." Students run assemblies on topics such as mental health. Providing these opportunities Ziegler shares, "builds community by allowing collaboration between students and adults." This allows students to build their path to the future by "giving [them] opportunities to grow in the world in which they live." Students have been empowered by Ziegler to help create a school that they can be proud of.

The connecting leader. Students are empowered to do great things at Ziegler's school. He encourages them to be involved in aspects of adult-like planning, communicating and implementation. Likewise, his staff is given the freedom to make suggestions on how to improve many of the aspects of their school. He brings all the stakeholders together not just so they can share information but really to build partnerships and relations with one another. He is the glue that binds them all together into a seamless and effective educational institution. Ziegler's ability to socially connect, whether in person or through technology, allows him to create learning environments that are fun, exciting, and innovative.

Cross-Case Analysis

An analysis of the four case studies provides an opportunity to examine the makeup of these Digital Principals and ascertain the similarities that occur between them. Cross-case analysis provides the researcher an opportunity to examine common themes that run parallel between the individual participants. (Stake, 2006). Similarities between multiple cases strengthen the findings as the study's research questions are answered (Creswell, 2013). Not all cases need to be exactly the same, however, generalities of themes, according to Merriam (2009), is "a common strategy for enhancing the external validity or generalizability" of findings.

Four themes have been identified that are common among the case study participants: 1) blue collar families; 2) curiosity, creativity and making and design; 3) connected learning communities; and 4) promoting voice and empowerment. An analysis of these themes may begin to provide a clearer understanding of the backgrounds and activities of Digital Principals.

Blue collar families. The Digital Principals spoke in depth about their family backgrounds. The question that they were asked was, "what were you like as a child? Three of the principals, McCoy, Robbins, and Ziegler, discussed, without prompting, the occupations their parents held. A farmer, a well driller, and a machinist were jobs their fathers had. None of their parents went to college. All of the participants described their families as, "blue collar" with Ziegler saying his dad, "worked his tail off and Robbins describing his parents as "hard working" multiple times. They saw how hard the parents worked and those memories stayed with them as a critical part of their childhood, then adult experiences.

McCoy, Robbins and Ziegler all struggled in school at some point. Academically it was rough until McCoy had a teacher that understood his unique gifts. Robbins did quite poorly and didn't fit within the traditional model of teaching. Ziegler was almost held back a year. For some, these struggles continued in college. Their parents tried their best to help them, never gave up on them, and advocated for them. This support allowed them to be successful and become the college graduates they never were.

For their parents, it was their desire that their children would have the experience of going to college. Their parents were "very supportive" according to all three and "dream" was also mentioned several times in interviews, relative to earning a college degree. Their parents saw education as a way out of the physical labor and demands of their own jobs. Robbins

explains his parents were, "excited about me going into education. My father pushed me even harder to go to school, [earn] better grades, and get a solid education." These experiences really play a part in their resilience, drive and determination. Their work ethic came from their parents.

Curiosity, creativity and making. Being curious is a common theme among all four of these Digital Principals. Whether it's constantly asking questions, taking things apart to see how they work, to wanting to learn more about a topic, or trying to figure out best practices for schools, each one appears to possess an innate sense of curiosity. The nature of the inquisitive mind is ingrained into each of the participants and it carries over into their beliefs about students' ability to learn. "We need to allow our students to inquire, ask questions, and try new things. Sometimes they success and other times they fail," shared Dodd. In trying to delineate how this happened, they talk about how they, themselves, were allowed to explore the neighborhood, encouraged to ask questions, or given difficult responsibilities. They just wanted to understand more about the world they were living in.

This wonderment then turned into action. That reflects the creative side of building models, or forts, or even a golf course. Not only was it planted in their heads, but it was turned into reality. By being curious about how something worked allowed the team to envision how it could be created and an idea or dream turned into reality. Without a hint of ego McCoy says, "I can envision how things can work, I can see it." It is this ability to be creative, to see things in different ways that allows these principals to lead and get things done.

It is also something that encourages teachers and students. Each principal has created some sort of makerspace at their schools that allows for exploration, building, creativity and problem solving. Dodd talks about his school's Fab Lab where they learn about "entrepreneurial,

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engineering and life skills in an innovative school setting." They have gravitated to this type of learning because they see the value in the process. Ziegler explains that, "Makerspaces are digital playgrounds for students to innovate and create." They have also implemented creative spaces, in the hallways, or redesigned spaces that allows students to discover their passions in nontraditional learning commons.

Connected learning community. There is a professional learning community in the Twittersphere which all of the Digital Principals are involved in either as moderators or participants. They are leading, building, and connecting learning communities in very innovative ways and encouraging the use of technology to create professional networks. Ziegler, who hosts the weekly #PAESP EdChat says, "I learn so much through these chats, and I grow exponentially because of it." There is a sense of camaraderie that is built through the social media activities regardless of time zones or locations. People continually return to these EdChats because of the relevant topics, but more so due to the relationships that have been built and the encouragement they receive.

All are voracious social media users, posting multiple times a day on Twitter, Facebook or Instagram. They participate as guests on educational podcasts, webinars and video conferences. They are highly sought after speakers on technology and educational leadership, yet they like to still keep relationships personal. "It's nice to attend a conference and meet someone in person that you have had Twitter convocations with" says Dodd, "the ice has already been broken because of social media." Conversations that take place in the evenings after conferences along with texting and messages once they leave facilitates the sharing of ideas and strengthening the collegial friendships.

Teachers also are encouraged to get connected to improve their strategies and methods of teaching. A tweet by Robbins may read, "#PLN Need your helping in showing another great teacher of mine, @twitterhandle, the power of Twitter- Please follow&RT! #leadupchat" which encourages the education twitter community to follow a teacher and retweet the message to get their followers to do the same. Ziegler may just tweet out a question, "What are you learning about to be a stronger school leader? #ChaseLearning" to which the PLN might reply back with numerous responses. In turn other replies might mention the need to try that idea or how great of thought that was. "Dodd says its, "important to share articles and blogs which are interesting with your staff. It also may be just a quote or picture of something awesome that you post to social media." All of these are things help themselves and other educators by taking time to reflect on how they lead and teach.

Empowering change. These Digital principals understand that they can't do things by themselves. They need a whole team of people to accomplish the innovation necessary to improve their schools. "Thankful, thankful for everyone that comes together to make the school great," says Robbins. "Without the team we wouldn't be able to accomplish half of the things that we do," explains Dodd. As school leaders they understand the need to empower others to accomplish their shared vision as a school and prepare students for the future

Allowing teachers to try new things to help students to learn is a hallmark of these principals. Dodd make is a priority saying, "I want staff to feel they can try new ways of teaching without the fear of the principal watching for mistakes." This trust come from the need to prepare students for an ever-changing world and having the entire school team be a part of that process. Robbins exhorts, "By empowering students and staff to utilize technology each day, with limited restrictions, we can prepare them for their future." By being empowered, staff can

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take the necessary steps that lead to school improvement by utilizing resources and ideas from around the world.

Allowing students to collaboratively work together with adults to allow them to take ownership of their learning is an innovative strategy employed by these Digital Principals. There are comfortable in allowing students to do things that would normally be reserved, just for the administrator or staff. McCoy says a big aspect of it is, "giving students choice." Taking over the school's social media feed, allowing instruction to be conducted, or technology implementation and servicing to be done by students as young as fifth grade shows great confidence in their abilities. Robbins states, "When students feel empowered, that's when "sparks" begin to fly."

Concluding Analysis

Chapter 4 lays out the demographic characteristics, grit levels and mindset scores of the Digital Principals. Case studies of four of the Digital Principals anchor the second half of the chapter. These innovative leaders are significantly younger than their principal peers. This age difference suggests that the exposure to technology earlier in their lives, may have resulted in being more comfortable with them to be comfortable with integrating it into their professional practice. As more and more young educators rise to the challenge of becoming school leaders we may begin to see more and more of these type of practices taking place. Digital Principals as a group have significantly high grit scores but the range varies enough that is not a definite factor in being a Digital principal. Likewise mindset as a group is relatively high yet is not an absolutely defining quality of a Digital Principal. The best that can be said is that having grit and a growth mindset may result in that school leader to be innovative in their practice.

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Many themes emerged including; curiosity, creativity, struggling learners, blue-collar families, thinking outside the box, utilizing spaces, student empowerment, connected learning, and professional learning networks, to name a few. The case studies showed that there are many traits that these Digital Principals have that can be connected to their family, learning experiences and support they received while growing up. The grit and mindset results reinforce many of these themes revolving around perseverance, hard work and wiliness to grow. The factors mentioned appear to suggest a relationship to how they relate, create, design, make and relate with respect to the schools spaces, faculty support, and student experience. Chapter 5 will reveal the findings of the study in relation to the research questions and delineates implications for leadership, practice, and future endeavors.

CHAPTER 5. FINDINGS, IMPLICATIONS, CONCLUSION

This chapter will synthesize the analyzed data from the preceding chapter to present the findings in regards to the research questions outlined in Chapter 1. It will also discuss implications for leadership, practice and potential areas for future research. Finally, the chapter will close with the researchers concluding reflections and remarks.

The Findings of the Study

The purpose of the study was to investigate the characteristics and professional practices of successful and innovative award-winning Digital Principals. Using a demographic questionnaire, 12-Item Grit Scale, Mindset Test, focus groups and case studies we can piece together a broad overview of who the Digital principals are as a collective to answer the following research questions, and related sub-questions.

1. What characteristics do successful innovative school leader possess?

    a. What are the demographic characteristics among the Digital Principals?

    b. What is the level of grit (passion and perseverance over time) of Digital Principals?

    c. What is the mindset (growth or fixed) of Digital Principals?

2. What professional practices do successful innovative school leaders engage in?

    a. How do Digital Principals lead innovative change in their schools?

    b. How do Digital Principals use technology to innovate at their school?

    c. How do the experiences of Digital Principals affect the way they innovate?

The quantitative data gathered through the demographic questionnaire, 12-Item Grit Scale and Mindset Test revealed information that could be in to form a profile of the Digital Principals. I was curious to find basic information such as their age range and educational background. For verification purposes observable information such as gender and ethnic background were listed. Then I dug a little bit deeper into family education and high school activities. The case studies dug deeper into four of the Digital Principals personal and professional backgrounds. What was found helps to paint a picture of who they are.

What Characteristics do Successful Innovative School Leaders Possess?

The first research question delves into the backgrounds of the Digital Principals and what distinguishing attributes are part of their personal makeup. To answer this question three sub-questions based upon the demographic questionnaire describe their collective features.

What are the demographic characteristics among the Digital Principals? From the demographic questionnaire we see that the Digital Principals primary age range falls into the 35 to 45 years making them significantly younger than the rest of their principal peers in the United States. Robinson (2006) describes a phenomenon that indicates children begin to think in less divergent or creative ways as they grow older. One may infer that innovative practices occur more naturally in younger populations, yet this doesn't preclude anyone from leading innovative change. Perhaps early exposure to digital technology, such as personal computers, the Internet, and social media, may prompt a better understanding of how to leverage technology to improve education.

All of the Digital Principals have advanced degrees and most of them had social science degrees. This fact becomes more astonishing when placed against the revelation that most of the

Digital Principals are first generation college graduates and that a few were also struggling

learners from blue-collar family backgrounds. They were also highly involved in co-curricular

activities, which may serve to develop the soft skills necessary to be successful in the context of

a career (Wagner, 2014). Having the necessary educational background, pedagogy, and refined

critical skills, coupled with an understanding of how to use technology, may be part of the key to

becoming an innovative educational leader.

What is the level of grit (passion and perseverance over time) of Digital Principals?

Digital leaders of schools regularly face opposition and adversity from those who do not share

their quest for best practices through the integration of technology in education. It is no surprise

that these Digital Principals collectively possess high levels of grit. The innovative leaders are

characteristically those who are constantly innovating to improve their schools and refining their

effectiveness as leaders (Couros, 2015). To be at the pinnacle of the digital leadership

movement, these technologically-minded leaders needed to pursue their passion over time to

persevere in order to achieve buy-in from numerous stakeholders. As those who embrace

technology as a tool to enhance learning, digital leaders often face those with opposing

viewpoints because they are on the cutting edge.

What is the mindset (growth or fixed) of Digital Principals? Educational leaders have

to continually grow and develop in their craft, whether individually motivated or sometimes

mandated. Those who believe their talents can be developed through hard work have a growth

mindset (Dweck, 2005). They also have a tendency to achieve more than their fixed mindset

counterparts. Digital Principals are the cutting edge of innovation. They have gotten there by

learning how to successfully leverage technology to help their faculty and students. It is no

surprise again that the Digital Principals all possess some level of growth mindset. "Sometime

those best results are found by using technology" says McCoy. If technology isn't always the best tool they don't push it, rather they know that the best tool is one that helps students to learn. Their focus is upon learning, improving, and doing things differently when necessary, in order to get the best results.

What Professional Practices do Successful Innovative School Leaders Engage in?

The second research question describes the practices of the Digital Principals and how they lead their schools. To answer this question three sub questions are answered using the case studies of four of the Digital Principals. The results are categorized by major themes revealed through the data analysis.

How do Digital Principals lead innovative change in their schools?

Collaborative leadership. The nature of being a Digital Principal means always being on the forefront of change and innovation for the desired goal of improving student achievement. This forward thinking mentality can cause unsettled feelings amongst faculty and staff who are wary of the unknown and see change as a threat to their current practices. They understand the need to bring the team together in order for their innovative ideas to get off the ground. Without this collaborative process they will not be successful, and in turn, their schools will not be successful as well.

The very nature of Digital Principals is collaborative not just amongst other digital leaders, but among other educators, students and community members. Working together they know they can harness the power of the collective, and often times the power of technology, to make the learning experience better for students.

Empowerment and risk taking. Even though they might seem just to be technological leaders in schools, Digital Principals are leaders who empower and foster the growth of teachers, in order to improve student learning. They are not the authority that rules by creating a dominating culture of tradition, but rather, moves to share that authority with the school community. They understand that it is essential to adjust to the needs of students and to transform schools because the world is changing. They cannot be the experts on everything. They know that data is rampant and fluid in the information age, but trust the people around them to help improve their school. They also understand that sometimes the students can be the teachers and can lead the way to create innovative ideas.

They create an environment that allows others to challenge the status quo, breaking down traditions and barriers to learning. They take risks and allow others to take risks. They don't penalize failure but see that as an opportunity to learn and grow together. They are supportive, they want others to try new things, and they want others to grow through the process. Innovation it is not something that just happens the first time. It takes many iterations to get it exactly right. So unless there is opportunity to prototype and refine, the great ideas are never born. It is through creating a safe culture for risk-taking that allows for these best practice in schools to happen.

How do Digital Principals use technology to innovate at their school?

Social media and the professional learning network (PLN). In order to be effective in the ever-changing world of education there has to be a connection to professional learning. Social media is effective in that it bridges distance and time. Instead of a business model of closely guarding the secret of success and looking at other educators as competitors, digital leadership brings educators together for the advancement and edification of educating the learner

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using technology as the means. In a sense everyone can be an expert and can share meaningful perspectives to different issues. In the end there is a trust and faith that those we are connected with will be able to assist and advance education. It's not traditional professional learning as we normally experience.

A simple tweet or Facebook post can travel all around the world in milliseconds. Whether an inspiring quote, new educational idea, research on brain development, or an exciting activity at school, the ability for educational leaders to share information with people around the world is something that has never been possible before. The ability to tell a story about their profession and their learning may be something that influences or encourages other school leaders. As the results of this study suggests, Digital Principals realize success in utilizing technology for their own learning, which in turn affects administrators, faculty, and students in their own schools and in others. Digital leaders hope others will develop and learn in similar ways. In a sense as technology progresses they are building contemporary learning systems on-the-fly.

Innovative spaces. Who would ever think to put exercise bikes, broken VCRs, Lego walls, surfboard tables and whiteboard doors into the hallways of schools? Digital Principals would. Schools do not have to be boring places where students dread to go each and every day. Digital Principals see the need to create innovative learning spaces. Digital Principal Dwight Carter even wrote a whole book about it, saying that there is a need to design schools around the needs of 21st-century learners and their use of technology. Many of our schools across the nation are aging, designed for a different era, so Digital Principals create new spaces by repurposing what exists to create contemporary learning spaces.

One of these innovation is Makerspaces, places where students can unleash their creativity. Whether it's using a 3D printer to build prostatic limbs, Arduino-powered devices that might even fly, or craft supplies to prototype radical designs before construction, a new way of learning focused on problem solving, is taking place in school that is both collaborative and creative. Having a workshop where the possibilities are unlimited is not common in most schools. The fact that the library, often the place of traditional study, is often one of the places that is transformed, serves as an indicator that the "old-style" learning spaces being supplanted by a maker mindset.

How do the experiences of Digital Principals affect the way they innovate?

Empathy. In looking at the case studies there is a common, overarching trend of leaders wanting to help others. These Digital Principals desire to understand where their staff, students, and parents are coming from. It's not a coincidence that most of them live and work in the communities where they grew up. Digital Principals Bill Ziegler and Glenn Robbins returned to the same area, or in Ziegler's case, to the same high school he attended. There is a deep connection to wanting to make their schools the best and they have made a personal investment in working toward that goal. When a teacher has a need, they reflect upon what it was like being a teacher, then make decisions that present benefit for both the school and faculty member. This process works likewise for students.

Understanding the perspective of what a school can do to support the struggling learner has made a profound difference in their approach to leading schools. It means going the extra mile to coach faculty members. It means trying to make schools exciting places for students to learn. It means not tolerating toxic educational practices that doesn't engage or empower others.

It means taking the time to learn and figure out what the real problems are. These are the steps that empathetic, innovative leaders take to make things happen.

   Building Relationships. In conjunction with empathy, collaboration, and professional learning network combs the relationships that are forged by Digital Principals. At the end of the day it appears that each one of them wants to ensure that strong relationships promote the growth and success of each person they touch. While not everything a leader does can foster a positive relationship, the effort is made to ensure that an attempt was made to help those around them. They again know that is a team effort as a school built upon solid relationships offers all students opportunities for success. A partnership with a government entity, small business, or hospital can provide great opportunities for students to step into the real world and be engaged in an adult-like setting.

   Online relationships through professional learning networks span time and space, offering wonderful opportunities for people to connect. When you are a principal you are the only one in your school. Having the opportunity to converse over social media with other school leaders, other educational leaders, provides a sense of comfort, and ability to commiserate, and to look each other in the eye virtually and say to each other, "I understand; I've been there and done that." It is something that may allow you to take more risks because people say, "you have a good idea," or, "we tried that but we had to do this to make it work." These relationships sustain you so you can continue to innovate.

Summary of Findings

   Digital Principals at the heart are just regular people who have a passion to improve the educational experiences of students and use sound leadership strategies, mixed with a bit of

technology, in order to deliver that. They know that they can't do it alone, so students, staff and parents are involved in the change process. They are well-connected with other educators who do great things from which they learn, share, borrow, and bounce off or adapt ideas. The innovation that results is unique, outside the box, and what some might call "a little crazy." These ideas are grounded in their creativity and their ability to persevere and get the job done. Their use of technology allows educational practices such as personalized learning, once inconceivable, to now be achievable on a practical level.

Implications for Leadership

As the world constantly evolves and changes, innovative leaders must continue to learn and encourage learning in others. Innovation and creativity within schools requires a growth mindset culture where people are free and supported to do implement innovative ideas. It takes courage, risk taking, and the ability to reach out to stakeholders to ensure collaborative work. Relationship must be built within and beyond the school through connecting with others around the world. It also takes commitment, along with the desire to see things through over time, to help students.

School leaders need to be connected with other educators outside of their local community. They should engage in conversations online through social media or other technologies. They must continue to learn and grow, contributing to the education discourses through EdChats, and take others with them to do the same. A disconnected leader will miss the richness and best practices of educators from around the nation and world. Also, they will not have the support network to help celebrate the ups and overcome the downs of being an educational leader.

Implications for Research

This study is exploratory and only begins to scratch the surface around what innovative leaders do. Further research should examine the deeper effects on staff, students, and parents when there is an innovative and successful school leader at the school. It could be designed as a qualitative research study that examines student achievement across innovative programs. Measurement of success may be defined and identified to assess the effectiveness of these activities. A deeper understanding of specific training, influences of educational philosophy, and other important data can be collected to gain a perspective of the impact of administrator preparation programs on innovative leadership.

Reflections

The completion of this dissertation was no easy task. I had much trepidation that it would not materialize in the way that I had envisioned. One of the questions on the demographic questionnaire was included because I wanted to find out if any of the Digital Principals were first generation college graduates. Although I am the first to graduate from college in my family I was expecting that most of the Digital Principals would come from families who had a tradition of being college-educated; I was completely wrong. Most of the Digital Principals came from humble beginnings and from blue-collar families. Parents advocated for education, to create a better life their children, to go off to higher education, and to be successful. My parents did that for me, and I'm forever grateful.

A second revelation was that many were also struggling learners. It has actually become the "badge" that is worn with pride in our Voxer group chats. School did not come easy for us, and it affects the way we orchestrate the school day and learning activities for students. Being

dyslexic, I find it fascinating that labels that were assigned when we were attending school and how that carries over positively in our professional practice. It did not stop innovation from happening, but actually causes it to thrive.

My parents bought me a Commodore 64 computer when I was in third grade and I used it all the way through college. If it wasn't for the word processing, spell check, and grammar check, I might not have made it through high school, let alone college. I marvel at how far technology has come as I'm now speaking into a USB headset and the Dragon dictation software is placing words into this document. Technology has leveled the playing field for me, as it should be utilized to help students to be successful regardless of their background or ability level. I often wonder about my parents, and grandparents, who were really hard workers and very creative. What would they have been able to do in this modern age? Could they have been successful, in different ways, due to the use of technology?

Conclusion

From the beginning I was curious to find out more about these innovative educators. Personally, I could not believe, and still do not, that I was selected to be part of their prestigious cohort. Indeed, it sometimes appears to be slight case of imposter syndrome. In conclusion, I turn again to the words of Bob Farrace as he described the founding of the Digital Principal award;

> This is an award that has a shelf life. This is not a program that can continue in perpetuity. I think we're starting to see, in order to be effective, there has to be a connectedness, to have a professional learning network and leveraging technology in innovative and creative ways. At some point it will be best for education if we stop

talking about technology over here on the side, but as integrated to be effective. In the

next several years we will be seeing the last round of Digital Principals.

First and foremost digital leaders are educational leaders who use technology as one of their tool in their toolbox to advance learning. But it is much more than just technology. It is about caring leaders, who strive each and every day to guide their schools to meet the unique needs of a modern student. Digital Principals innovate out of the necessity to make education relevant for the future leaders of tomorrow.

Agreement to Participate

University of Hawaiʻi at Mānoa, College of Education, Doctorate in Educational Practice

Dissertation:

Innovative Educational Leadership: The Characteristics and Practices of the National Association of Secondary School Principals (NASSP) Digital Principals of the Year

Aloha. I am Winston Sakurai, a doctoral student in the College of Education at the University of Hawaiʻi at Mānoa and am conducting a research study to examine the **Innovative Educational Leadership: The Characteristics and Practices of the National Association of Secondary School Principals (NASSP) Digital Principals of the Year**. I am inviting you to participate in this study because you have been recognized as a National Association of Secondary School Principals Digital Principal Award Winner and your experiences can provide valuable information to inform current and future educational practices.

Activities and Time Commitment: If you agree to participate you will be interviewed individually. Interview sessions will last between 60-90 minutes and will be audio recorded with your permission so that it may be transcribed and analyzed later. The discussions will be informal; think of this as a time to share and talk story about your experiences about being a Digital Principal.

Benefits and Risks: While you will receive no direct benefit from participating in this study, your participation is meaningful and will contribute to a better understanding of your experiences as a Digital Principal. There is little to no risk to you in participating in this project. If at any time during the interviews you are uncomfortable with any questions, we will skip the question, take a break, or stop the interview, or you may choose to withdraw from the study.

Confidentiality and Privacy: During this research project, all data from the surveys and interviews will be kept in a secured location. Only we will have access to this data, although legal authorized agencies, including the University of Hawaiʻi Human Studies Program, have the right to review the research records.

After the interviews are transcribed, audio recordings will be destroyed. No names or other personally identifiable information will be used in this research project. You will be provided a copy of the transcript for review, edit, and/or comment.

Voluntary Participation: Participation in this research study is voluntary. You can choose freely to participate or not. In addition, at any point during this project, you can withdraw without any penalty or loss.

Questions: If you have any questions about this project, please contact me by phone or email: Winston Sakurai (808) 295-6194 or winstonsakurai@gmail.com. You may also contact my advisor Dr. Steve Shiraki, shirakis@hawaii.edu. If you have any questions about your rights as a research participant, in this project, you can contact the University of Hawai'i, Human Studies Program, by phone at (808) 956-5007 or by email at uhirb@hawaii.edu.

If you agree to participate in this project, please complete the bottom portion of this form and return it to me. Please retain the top portion of this form for your records.

Mahalo,

Winston Y. Sakurai

Complete and return bottom portion of form

Signature for Consent:

I agree to participate in the research project entitled, **Innovative Educational Leadership: The Characteristics and Practices of the National Association of Secondary School Principals (NASSP) Digital Principals of the Year**

I understand that I am can withdraw from participating in this project at any time by notifying the researchers.

Please check below to consent to audio recording of individual and focus group interviews. Audio recordings will be destroyed after transcription is completed.

_____ I allow audio recordings of any individual and focus group interviews.

Your Name (Print): _____

Your Signature:_____Date: _____

APPENDIX B. 12–Item Grit Scale

12-Item Grit Scale

Directions for taking the Grit Scale: Please respond to the following 12 items. Be honest – there are no right or wrong answers!

1. I have overcome setbacks to conquer an important challenge.

    ❑   Very much like me

    ❑   Mostly like me

    ❑   Somewhat like me

    ❑   Not much like me

    ❑   Not like me at all

2. New ideas and projects sometimes distract me from previous ones.*

    ❑   Very much like me

    ❑   Mostly like me

    ❑   Somewhat like me

    ❑   Not much like me

    ❑   Not like me at all

3. My interests change from year to year.*

    ❑   Very much like me

    ❑   Mostly like me

    ❑   Somewhat like me

    ❑   Not much like me

    ❑   Not like me at all

4. Setbacks don't discourage me.

- ❑ Very much like me
- ❑ Mostly like me
- ❑ Somewhat like me
- ❑ Not much like me
- ❑ Not like me at all

5. I have been obsessed with a certain idea or project for a short time but later lost interest.*

- ❑ Very much like me
- ❑ Mostly like me
- ❑ Somewhat like me
- ❑ Not much like me
- ❑ Not like me at all

6. I am a hard worker.

- ❑ Very much like me
- ❑ Mostly like me
- ❑ Somewhat like me
- ❑ Not much like me
- ❑ Not like me at all

7. I often set a goal but later choose to pursue a different one.*

- ❑ Very much like me
- ❑ Mostly like me
- ❑ Somewhat like me
- ❑ Not much like me
- ❑ Not like me at all

8. I have difficulty maintaining my focus on projects that take more than a few months to complete.*

- ❏ Very much like me
- ❏ Mostly like me
- ❏ Somewhat like me
- ❏ Not much like me
- ❏ Not like me at all

9. I finish whatever I begin.

- ❏ Very much like me
- ❏ Mostly like me
- ❏ Somewhat like me
- ❏ Not much like me
- ❏ Not like me at all

10. I have achieved a goal that took years of work.

- ❏ Very much like me
- ❏ Mostly like me
- ❏ Somewhat like me
- ❏ Not much like me
- ❏ Not like me at all

11. I become interested in new pursuits every few months.*

- ❏ Very much like me
- ❏ Mostly like me
- ❏ Somewhat like me
- ❏ Not much like me
- ❏ Not like me at all

12.I am diligent.

- ❑ Very much like me
- ❑ Mostly like me
- ❑ Somewhat like me
- ❑ Not much like me
- ❑ Not like me at all

1. For questions 1, 4, 6, 9, 10 and 12 assign the following points:

    5 = Very much like me

    4 = Mostly like me

    3 = Somewhat like me

    2 = Not much like me

    1 = Not like me at all

2. For questions 2, 3, 5, 7, 8 and 11 assign the following points:

    1 = Very much like me

    2 = Mostly like me

    3 = Somewhat like me

    4 = Not much like me

    5 = Not like me at all

Add up all the points and divide by 12. The maximum score on this scale is 5 (extremely gritty), and the lowest scale on this scale is 1 (not at all gritty).

Duckworth, A.L., Peterson, C., Matthews, M.D., & Kelly, D.R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology, 9*, 1087-1101.

APPENDIX C. MINDSET QUIZ

Mindset Test

To what extent do you agree or disagree with these statements:

Strongly Agree

Somewhat Agree

Agree

Disagree

Somewhat Disagree

Strongly Disagree

1.   Your intelligence is something very basic about you that you can't change very much.

2.   You can learn new things, but you can't really change how intelligent you are.

3.   No matter how much intelligence you have, you can always change it quite a bit.

4.   You can always substantially change how intelligent you are.

5.   You are a certain kind of person, and there is not much that can be done to really change that.

6.   No matter what kind of person you are, you can always change substantially.

7.   You can always change basic things about the kind of person you are.

8.   You can do things differently, but the important parts of who you are can't really be changed.

Scoring

1.   ability mindset – fixed

2.   ability mindset – fixed

3.   ability mindset – growth

4.   ability mindset – growth

5.   personality/character mindset - fixed

6.   personality/character mindset – growth

7.   personality/character mindset - fixed

8.   personality/character mindset – growth

APPENDIX D. QUESTIONAIRE RESULTS

Table 1: Age Range (at time of winning award)

Answer Choices	Responses	
25 to 34	0.00%	0
35 to 44	66.67%	10
45 to 54	26.67%	4
55 to 64	6.67%	1
65 to 74	0.00%	0
75 or older	0.00%	0
Total		15

Table 2: Gender

Answer Choices	Responses	
Female	13.33%	2
Male	86.67%	13
Total		15

Table 3: Race/Ethnicity

Answer Choices	Responses	
American Indian or Alaskan Native	0.00%	0
Asian / Pacific Islander	6.67%	1
Black or African American	20.00%	3
Hispanic	0.00%	0
White / Caucasian	73.33%	11
Multiple ethnicity / Other (please specify)	0.00%	0
Total Respondents: 15		

Table 4: Undergraduate Major

Answer Choices	Responses	
Elementary Education	13.33%	2
English / Language Arts	13.33%	2
History / Social Science	66.67%	10
Sciences / Technologies	6.67%	1
Total		15

Table 5: Parents with a Four-Year Degree

Answer Choices	Responses	
Yes	40.00%	6
No	60.00%	9
Total		15

Table 6: High School Activities

Answer Choices	Responses	
Student Council	66.67%	10
National Honor Society	40.00%	6
Sports Teams	93.33%	14
Academic Teams	33.33%	5
Community Service Clubs	40.00%	6
Total Respondents: 15		

Table 7: 12-Item Grit Scale Results

#	Questions	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Ave
1	I have overcome setbacks to conquer an important challenge.	5	4	4	5	5	4	3	3	5	5	5	5	5	4	5	**4.47**
2	New ideas and projects sometimes distract me from previous ones.	4	4	3	1	4	3	3	3	4	5	5	2	3	3	1	**3.20**
3	My interests change from year to year.	3	4	3	3	2	3	4	2	3	5	4	3	3	5	2	**3.27**
4	Setbacks don't discourage me.	5	1	2	5	4	4	3	3	5	5	5	4	4	4	3	**3.80**
5	I have been obsessed with a certain idea or project for a short time but later lost interest.	5	4	3	4	4	4	4	3	4	5	4	3	3	4	3	**3.80**
6	I am a hard worker.	5	5	5	5	5	5	4	3	5	5	5	4	5	5	5	**4.73**
7	I often set a goal but later choose to pursue a different one.	5	5	4	2	5	3	3	3	4	5	5	3	1	4	5	**3.80**
8	I have difficulty maintaining my focus on projects that take more than a few months to complete.	4	5	3	3	5	4	4	2	4	5	5	3	4	4	4	**3.93**
9	I finish whatever I begin.	4	4	3	4	4	4	4	3	4	5	5	3	4	4	5	**4.00**
10	I have achieved a goal that took years of work.	3	4	4	5	5	5	4	3	5	5	5	2	5	5	5	**4.33**
11	I become interested in new pursuits every few months.	4	2	4	4	2	3	4	2	5	4	3	3	1	2	2	**3.00**
12	I am diligent.	5	4	4	4	5	4	4	4	4	5	5	4	5	5	5	**4.47**
	Average Grit Score	4.33	3.83	3.50	3.75	4.17	3.83	3.67	2.83	4.33	4.92	4.67	3.25	3.58	4.08	3.75	**3.90**

Table 8: 12-Item Grit Scale Results by Perseverance and Passion Scores

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	AVE
Perseverance - Q: 1,4,6,9,10,12	4.5	3.7	3.7	4.7	4.7	4.3	3.7	3.2	4.7	5	5	3.7	4.7	4.5	4.7	**4.30**
Passion - Q: 2,3,5,7,8,11	4.2	4	3.3	2.8	3.7	3.3	3.7	2.5	4	4.8	4.3	2.8	2.5	3.7	2.8	**3.50**
Difference	0.3	-0	0.3	1.8	1	1	0	0.7	0.7	0.2	0.7	0.8	2.2	0.8	1.8	**0.80**

Table 9: Mindset Test Results

#	Questions	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Your intelligence is something very basic about you that you can't change very much.	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
2	You can learn new things, but you can't really change how intelligent you are.	G	G	G	G	G	G	G	G	G	G	G	G	G	F	G
3	No matter how much intelligence you have, you can always change it quite a bit.	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
4	You can always substantially change how intelligent you are.	G	G	G	G	G	G	G	G	G	G	G	G	G	F	G
5	You are a certain kind of person, and there is not much that can be done to really change that.	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
6	No matter what kind of person you are, you can always change substantially.	F	G	G	G	G	G	F	F	G	G	G	F	G	G	G
7	You can do things differently, but the important parts of who you are can't really be changed.	F	G	G	G	G	G	G	F	G	G	G	G	G	G	G
8	You can always change basic things about the kind of person you are.	G	G	G	G	G	G	F	F	G	G	G	G	G	G	G
	Growth Mindset Answers	6	8	8	8	8	8	6	5	8	8	8	7	8	6	8
	Fixed Mindset Answers	2	0	0	0	0	0	2	3	0	0	0	1	0	2	0

APPENDIX E. DIGITAL PRINCIPAL BIOGRAPHIES

2012 Digital Principals

     Michael King, @digitalsandbox1. Mike King has been in education for 38 years, leading his schools to state and national recognition with both an Oklahoma Medal of Excellence and a National Blue Ribbon. He feels his success come from his commitment to advancing learning with technology and his firm belief that digital tools can help students unleash their creativity and construct knowledge.

     This certainty provided the groundwork for the *Creating the Classrooms without Walls* program at Dodge City Middle School in Kansas, where students participate in a widespread learning experience, utilizing mobile tools to continually access and create multimedia content. As a technology leader his job is to help teachers understand technology tools and how it fits with their instructional practices.

     As a principal. Mike's other accomplishments include recognition by USA Today, for his educational website, and The Goddard Foundation, for documentary filmmaking. Mike is a graduate from the University of Oklahoma in Public School Administration where he is an adjunct professor. He has won numerous other awards through this illustrious education career due to his innovative work. He co-authored "Developing School Programs and Policies" and serves on the Kansas Administrators Middle School Association Board of Directors.

Patrick Larkin, @patrickmlarkin. Patrick Larkin's success as a principal comes from his commitment to shared learning where he has created numerous technology platforms that have been used in schools worldwide. He cofounded the Connected Principals blog that promotes discussion among education leaders and conducts discussions under the #cpchat hashtag on Twitter. His connectedness with his school community through technology allows for stakeholder feedback on issues regarding school improvement. This two-way communication provides the necessary support in times of school success and mitigates anxiety during times of crisis.

He has led EdCamp Admin unconferences to gather school leaders to discuss education and used of digital tools. He led the launch of a 1-to-1 iPad initiative at his school and conducted Parent Tech Nights to assist parents in working with their children to maintain a healthy online profile. Patrick feels that technology and education go hand in hand stating, "As long as we talk about technology as something extra, we will not have the level of success with technology initiatives that we are striving for. In my mind, the goal for any educational initiative needs to be to improve student learning."

Patrick is currently the Assistant Superintendent for Learning for Burlington Public Schools in Massachusetts and has been in education for 23 years. He was named Massachusetts Assistant Principal of the Year in 2004. He is a regular contributor to Principal Leadership magazine and writes an Education Week blog. Patrick promotes the idea that, "Savvy school leaders use social media to engage their communities in a lively and ongoing exchange of ideas."

Eric Sheninger, @E_Sheninger. When people think of education rockstars, Eric Sheninger comes to the top of the list. His primary focus is on student-centered, collaborative, flexible, 21st Century learning opportunities. As principal at New Milford High School in New Jersey he oversaw the successful implementation of a bring-your-own-device (BYOD) initiative. Eric is an innovative leader in social media, having over hundred thousand followers, and is an advocate for web 2.0 technology as learning tools to "engage students, improve communications with stakeholders, and help educators grow professionally."

Eric is also a Google Certified Innovator and Adobe Education Leader. He is known most for his Pillars of Digital Leadership, which provides a roadmap to help transform schools to a new digital learning experience for students. Eric has become a best-selling author and is a highly sought after speaker across the nation. He helps school leaders integrate technology through his consulting and speaking engagements across the globe.

Eric is currently a Senior Fellow and Thought Leader on Digital Leadership with the International Center for Leadership in Education (ICLE). He was named one of the 20 to Watch by the National School Boards Association (NSBA), awarded a Center for Digital Education (CDE) Top 30, is a Bammy Award winner, Phi Delta Kappa (PDK) Emerging Leader Award recipient, and Learning Forward's Excellence in Professional Practice Award winner. TIME Magazine named Eric as one of the 140 Best Twitter Feeds in 2014. His blog was selected as Best School Administrator Blog in 2013 and 2011 by Edublogs and Editor's Choice Content Award in 2014 by Smartbrief Education.

2013 Digital Principals

Dwight Carter, @Dwight_Carter. An educator for 22 years, Dwight Carter created a center of technology integration and collaborative learning at New Gahanna High School in Ohio. Students take classes in rooms outfitted with wireless Internet and learn in an open-concept seating arrangement. These innovations helped the district to be named the 2012 Best in Tech by Scholastic Administrator magazine. It is here where he saw the benefits of using technology and became a technology visionary leader.

Twitter has become the backbone of his personal learning network and blogs his open door to teachers and parents. In fact, Twitter has become a tool for school organizations to communicate with the home. His teachers take ownership of their professional development by using social media to network with other educators. This allows them innovate within their classrooms with shared resources. This, along with robust professional development, has allowed his schools to be successful. He says the teaching we are doing now allows students to ask questions because the information is in the palms of their hands on their devices.

Dwight is now principal of New Albany High School, which is regularly ranked among the top 100 high schools in the nation. He is an inductee in the Jostens Renaissance Educator National Hall of Fame for his work developing positive student culture and named a finalist for Academy of Arts and Education Secondary Principal of the Year. Carter was featured on National Public Radio and has authored numerous books and blogs and is on faculty with NASSP. He focuses student learning on four core skills: creativity, collaboration, critical thinking and communication. His signature phase is "Be great!"

Ryan J. Imbriale, @Ryan_Imbriale. As an e-learning specialist Ryan Imbriale led the development of the curriculum for the Maryland Technology Academy and grew the county's e-learning program from its humble beginnings. Later appointed principal of Patapsco High School and Center for the Arts, Ryan upgraded the building with a wireless infrastructure, equipped classrooms technology tools and implemented a blended learning curriculum.

These efforts, along with providing high-quality professional development for his faculty, allowed his school to move forward, gaining recognition by the *US News & World Report* and the Washington Post as one of the top high schools in the United States. Patapsco was also named by the College Board as one of the nation's top arts integration schools and recognized as a John F. Kennedy Center for the Performing Arts' National Schools of Distinction. Ryan states, "with the use of digital technology, educators now can focus on immediate, project-based, and student-driven classes and activities that challenge imaginations and instill the essential skills in critical thinking, communication, collaboration, and creativity that are increasingly in demand in the 21st century workplace."

Ryan is currently the Executive Director of Innovative Learning for the Baltimore County Public Schools. He has served as President of MSET, Maryland's ISTE Affiliate and on the Board of Directors for ISTE, the International Society for Technology in Education. In 2008, Ryan was named one of its 20 to Watch educators by the National School Boards Association (NSBA) and in 2009 Ryan was awarded the Making IT Happen award which honors educational technology leaders for their innovation. In 2010, Tech & Learning magazine named Ryan one the 100 most important people in education technology. He was also named as one of 40 inaugural Intel Innovative Educators in 2015.

Carrie Jackson, @jackson_carrie. Carrie Jackson dedicates her time to support as she puts it, "collaboration, flexibility, and novelty" at Timberview Middle School in Texas. As founding principal she helped to create the physical design of the classroom, which allow for students to own their learning spaces. Systems and processes were built to support 21st-century teaching and learning. Time and space were created to promote personalized learning and teacher collaboration. The art of risk taking is encouraged and everyone is given the chance to adopt technology at their own pace.

Carrie considers herself to be "the lead learner and chief storyteller for our school," where she has constructed a professional network through Twitter, Facebook, Instagram, and Pinterest. Social media is also used to connect with staff members, parents, and the community. She hosts a Twitter chat with stakeholders to discuss topics related to education and promotes campus "Tweet-alongs" where she takes photos of students and teachers who are leading innovative learning experiences.

Carrie has spent 21 years in education. She serves as the President of the Texas Association of Secondary School Principals (TASSP) where she created the association's Facebook page and Twitter account to reach out to members. Timberview was designated as a Green Ribbon School in 2011 and 2012, for promoting promising practices for sustainability. This was followed by her school was recognized as a National Association of Secondary School Principals Breaking Ranks Showcase School along with being named an Energy Star School and Blue Zones Project Approved School in 2016. These recognitions showcase the Timberview Way" that Carrie implemented to "make school a magical and safe place for kids" and recognized the effort to leverage digital media to engage stakeholders.

2014 Digital Principals

    Daisy Dyer Duerr, @DaisyDyerDuerr. Daisy Dyer Duerr sees technology as the great equalizer for poor and rural students. It is based on personal experience as she grew up in rural Arkansas where she recalls that her "high school had limited technology so college was the first time I was really exposed to using technology." When she started as principal of St. Paul High School in Arkansas the school only had a few technology tools. She made it possible for all teachers to have iPads, empowering and trusting them to embrace technology as professionals.

    Daisy also created a weekly Digital Citizenship advisory to help student appropriately use technology and later provided training for parents after school. Daisy established an Arkansas educational twitter chat (#ArkEdChat) and says, "Some of the best professional learning I do is through Twitter." She continues, "Even though I am a principal in a rural locale, I am able to learn globally, thanks to technology." It is through her use of social media that allows her students to have access to resources to use in the classroom from around the globe.

    Daisy has been in education for 18 years and is currently an international keynote speaker, educational consultant, and "a proud rural educator." She has advocated for increased support in rural and low-income regions at the state and federal levels for increased technology infrastructure. Dyer Duerr took her rural impoverished school in Arkansas, which faced declining enrollment and was marked on the School Improvement List, to become one of the top 10% in the state in less than four years. She was named as one of the Top 20 Innovators in Arkansas as named by the Arkansas Times in 2015 and was also nominated for the Bammy Awards in 2014 and 2015.

Jason Markey, @JasonMMarkey. Jason Markey sees technology use as a means to provide students and teachers opportunities to become creative and innovative thinkers. "We should be infusing technology seamlessly throughout their educational experience to both enhance and provide the needed guidance to navigate the new digital waters we are all in," Markey says. He fully embodies the idea that students should not have to "disconnect" while at school.

Jason helped to roll out a 1 to 1 chrome book initiative in his district. In order to support trouble shooting needs he implemented a student run technology support "help desk" which not only supports students and teachers at his East Leyden High School in Illinois but also other mobile devices in the district. This level of empowerment carries over to his promotion of student run collaborative blogs and social media sites to give. Jason organized a Digital Citizenship Leadership team that develops acceptable use guidelines and informs students and families about the positive and sometimes negative impacts social media can have on them. The purpose is to give a voice in their school and community.

Jason was awarded the Bammy Educator's Voice Award as a Secondary School Principal and presents at Google Apps for Education (GAFE) conferences around the nation. He feels it is important to build relationships as a connected leader, especially since technology provides ways to bring people together like never before. For example, his students are currently testing a telepresence robot that will allow students to remotely roam the halls and "sit" in classrooms when they have extended absences.

Derek McCoy, @mccoyderek. Derek McCoy's has spent years as an educator and lead learner in Title I schools and has seen how technology can narrow the achievement gap by changing how instruction is delivered and learning takes place. He implemented a BYOD framework at Spring Lake Middle School and increased access to technology resources and later introduced a 1 to 1 iPad initiative.

Curriculum development is a huge aspect of changing schools. Derek initiated a plan to put planning documents in the cloud so they could be easily accessed by everyone and collaboration could be done online. The implementation of best practices in the classroom, many of which just happens to be implemented with technology, is a passion of his. As a former curriculum and innovation director he is able to blend together a power learning experience to improve how teachers facilitate instruction and how students learn

Derek is currently the principal of West Rowan Middle School in Rowan-Salisbury Schools. He presents at numerous conferences on topics ranging from Building Professional Learning Networks to Promoting School Brands. He co-moderates two chats on Twitter #Edfocus and #ncadmin which connects educators both worldwide and at the state level. He has also been named as Top 25 NC Educators to Follow by North Carolina Educators and 30 Edu-Tweeters to follow by innovatemyschool.com. Derek feels that being connected through social media has had a huge impact on his personal growth as a principal. "Most of the resources and strategies I bring to my school are from friends I've never met face to face," Derek says, "That is the power of being a digital leader, the power of a Personal Learning Network and the power of being connected."

2015 Digital Principals

John Bernia, @MrBernia. John Bernia feels that "being an educator is the most important job in the world." At Oakview Middle School in Michigan he provided time during the day for teachers to collaborate on how to best use technology tools that are so important to the success of schools. John became very creative in using his budget and schedule to provide staff development opportunities to learn how to utilize technology in the classroom. He says, "As a principal, my goal is to provide teachers with opportunities to use technology in their classrooms, to expand the use of technology for students, and to model the use of technology to be more productive and to grow as a professional."

John also worked on a committee to develop the district BYOD policy which helped to expand the number of blended and online courses available to students. He is committed to growing the education profession by sharing best practices of how to use technology. The unconference of professional development has become one of his favorite methods for educators to come together to learn from one another. He has led EdCamps district wide and at institutions of higher learning. He has also supported innovative ideas such as the recycling of mobile devices

John is currently the Chief Academic Officer of Warren Consolidated Schools, and a Ph.D. student at Oakland University. He has presented around the country on various topics including productivity, digital leadership, and literacy. He co-moderated #edfocuschat and provided technical support to his mellow Michigan educators.

James Richardson, @PrincipalJRich. James Richardson promotes student empowerment. When he talk about students he notes that, "Everywhere, I see them being creators of content and demonstrating mastery by acting, recording video, conducting experiments, collaborating, scanning, communicating, laughing, crying, and yes, even failing—but learning from their failures, and ultimately getting back up and trying again. They take risks, I take risks, we all take risks."

As principal of Buck Lodge Middle School in Maryland he led the 1:1 iPad school through Transforming Education through Digital Learning (TEDL) which was a Title I initiative. He was able to shift the entire school to digital content, which led them to be recognized as a 2013 Apple Distinguished Program, and individually for James, as a 2014 Apple Distinguished Educator.

James spent many years as an elementary educator and was recognized as the state's Assistant Principal of the Year by the Maryland Association of Elementary School Principals. He presented many seminars on how to successfully implement and manage a 1:1 mobile device program and led iPad Camps at his school. He currently works for Apple Education helping other schools implement technology.

Bill Ziegler, @DrBillZiegler. Dr. Bill Ziegler is the principal of Pottsgrove High School Pennsylvania. He led a highly collaborative process to build a 1:1 program where he created a Teacher Digital Team and a Student Digital Team to help with the implementation. Bill works collaboratively with families ensure they are involved in the school vision of a modern digital learning environment. "As a principal, I am responsible for leading in a digital age," Ziegler says, "and assuring that our students are equipped, prepared, and ready to be digital learners, leaders, and citizens."

Bill is an avid social media user and demonstrates its positive use for everyone in the community. He is a strong proponent of student empowerment allowing students to take over the school's Twitter account to show the day in the life at school. Bill provided professional development services on digital leadership across the country and the globe, notably serving as part of the US delegation to the Great Leaders Summit in China. He has also lobbied on Capitol Hill for increased e-Rate coverage for school systems throughout the nation.

Bill serves as president of the Pennsylvania Association of Elementary and Secondary School Principals where he created #PAESSPchat on Twitter and introduced all day training Tech Studio by NASSP Digital Principals at the state conference. His school has been recognized as NASSP breakout school and he was recognized at the 2016 Pennsylvania Secondary Principal of the Year. He constantly speaks to educators across the nation and has started his own educational consulting company, Chase Learning.

2016 Digital Principals

Bobby Dodd, @Bobby_Dodd. Bobby Dodd is the principal of Gahanna Lincoln High School in Ohio. He started the Digital Learning Academy at his school which gave students an alternative to the traditional method of instruction. This has personalized their learning while also providing additional opportunities to grow through differentiated instruction. He also implemented a 1:1 iPad program at his previous school. Being connected with other educators through his professional learning network and blogging has been a passion.

Bobby feels that technology allows students to take ownership of their learning. "I want kids and teachers to try things, to take chances. Sometimes you are going to fail, but we'll learn lessons from it," he says, "That will help our kids discover that mastery is about a lot more than grades." It is his desire to prepare students for lifetime learning opportunities by allowing them to learn in collaborative and innovative learning environments. This will allowing students to be successful. The school's Fab Lab provides hands-on opportunities for students to create products for the school and community using the latest technology.

Bobby received his JD from John Carrol University but chose education instead of practicing law. He was also named a BestEdTech Educator Leader Innovator Award finalist through the Ohio Educational Technology Conference and Connected Educator of the Month by the Ohio Appalachian Collaborative. He co-moderates #OHedchat which is the biggest education chat in the Midwest.

Glenn Robbins, @GlennR1809. Glenn Robbins is the principal of Northfield Community Middle School in New Jersey. His innovative student-centered programs revolve around students "Becoming Life Ready." He created a BYOD program and upgraded the schools broadband infrastructure. The normal school hallways were rebranded as "Idea Streets," following the innovative program at the d.school at Stanford University. Using the design thinking process, students work on projects to better the lives of others. Students were invited to the White House Maker Faire to present their designs of 3D-printed prosthetic hands for children and creating video games from children's books. The school was also recognized with the 2016 State Educational Technology Directors Association Student Voices Award, which honors schools that leverage technology to improve student experiences and achievement.

Students were empowered through a gamified learning management system where they control their own pace of learning during the course and year. "Learning is a much more robust activity when students engage in real-world activities that serve a purpose," Robbins says. "We firmly believe that by empowering students and staff to utilize technology each day, we are preparing them for their future, not ours."

Glenn Robbins is currently the Superintendent of the Tabernacle Township School District, New Jersey. He has keynoted numerous events around the world speaking on digital leadership. He has been recognized by numerous organizations for his innovative technology implementation including receiving the 2015 Middle School Bammy Edu Voice Award. He says, "By empowering students and staff to have a growth mindset through design thinking, while implementing digital tools, we can better prepare them to be agile, flexible and adaptive, towards the profound shifts that they will encounter in life."

Winston Sakurai, @winstonsakurai. Winston Sakurai is the principal at Hanalani Schools in Hawaii. He launched a Schools of the Future initiative in which students harness technology to tackle real-world challenges to develop critical skills. Winston also oversaw the creation online science fair where students collaborate on projects that are judged virtually by science experts around the globe. The school's robotics team has brought home the Hawaii Botball Tournament championship seven years running and won the International Botball Tournament twice. The school has an e-learning system with online courses to allow students to take elective courses along with flipped and blended learning classrooms.

Sakurai has hosted and produced numerous Hawaii Department of Education Distance Learning Technology (DLT) television shows that connected students and educators across the chain of remote Hawaiian islands through interactive virtual learning. "Using digital tools, along with the teaching of six critical skills; collaborative leadership, communication, critical thinking, creativity, cultural competence, and digital citizenship, inspires our students to be leaders on a local, national, and global stage," Sakurai says. "We want our students to be equipped for any challenge, including occupations that have not even been created yet."

Sakurai was appointed by Governor in 1993 to the Hawaii State Board of Education and would also serve as a voting delegate to the National Association of State Boards of Education (NASBE) and National School Boards Association (NSBA). He was recognized by the Honolulu Star Bulletin as one of ten who would positively influence Hawaii's future and designated as the 2015-16 Hawaii Secondary Principal of the Year.

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