

# **North Carolina School Administrators' Perceptions about the NC Digital Learning Competencies**

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Key Words: digital teaching, digital leadership

### **Abstract**

The NC Department of Public Instruction's Digital Teaching and Learning Division engaged district teams across the state in regional professional learning on the Digital Learning Competencies throughout July 2016 and implemented the competencies for all school districts in July 2017. The North Carolina Digital Learning Plan provided recommendations for state actions that support K-12 schools, as they become digital-age learning organizations. The purpose of this study was to explore the perceptions of school administrators about the NC Digital Teaching and Learning Competencies for school administrators, for classroom teachers, and to identify best practices for assessing faculty. The Principles of Transformational Leadership to develop digital leadership skills, and Merrill's First Principles of Instruction for the design and development of professional learning, guide the conceptual framework. Using a mixed method concurrent approach, data was collected during a pilot study fall 2018. Quantitative data collection occurred through a web-based questionnaire distributed to NC school administrators (n=21) in one school district, and qualitative data was collected by individual semistructured interviews with a homogeneous group of 6 NC school administrators from one southeastern district. For the quantitative data analysis, descriptive results were categorized based on the five focus areas outlined in

administrator competencies. Thematic analysis of the transcribed interviews followed an open coding process to identify categories and themes related to administrators' perceptions about teaching and learning competencies and best practices assessing teachers about the competencies. The goal from this study will support the design and development of a digital learning certificate to support administrators to address the knowledge gap in digital leadership practice to support teachers and students.

## **Introduction**

The teaching and learning process is a complex balance of content knowledge, pedagogical strategies, and technological resources to actively engage and support learners. In 2016, the North Carolina (NC) state board of education approved the integration of the Digital Learning Competencies for Teachers (DLCT) (see Appendix A) and the Digital Learning Competencies for School Administrators (DLCSA) (see Appendix B) for K-12 schools statewide. The DLCT and DLCSA, informed by International Society for Technology in Education (ISTE) Standards, International Association for K-12 Online Learning (iNACOL), and the NC Professional Teaching Standards, are to be viewed within the context of the current North Carolina Professional Teaching Standards as extensions in relationship with the ways that digital technologies impact and affect schools. Conversely, the DLCSA are to be viewed within the context of the current North Carolina Standards for School Executives as extensions in relationship with the modes that digital technologies impact and affect schools. School and district administrators should use DLCSA to improve practice, build capacity in the staff, and drive student learning within their schools. Each focus area in the DLCSA conveys a subset of competencies that help to explain and 'unpack' the five focus area: (a) Vision and strategy (b) Content and instruction, (c) Human capacity and culture, and (d) Personal growth and connectedness (e) Community. Throughout DLCSA is the underlying assumption of leadership and excellence with regard to digital citizenship. Additionally, administrators should model the behavior they expect from their staff and students and should continually seek to represent their schools and districts with the way they convey themselves both on and offline. Teachers and administrators should use the competencies to improve practice and drive student learning within their classrooms.

## **Background and Context**

In NC, school and district administrators are asked to follow the DLCSA to improve their practices, support schools, teachers, and students in digital learning environments. In 2013, based on initiatives from the state's General Assembly, the State Board of Education developed a set of digital teaching and learning competencies providing a framework for "schools of education, school administrators, and classroom teachers on the needed skills to provide high-quality, integrated digital teaching and learning" (NC Department of Public Instruction, n.d.). Effective in July 2017 for the beginning of the 2017-2018 academic year, the goal of the digital teaching and learning competencies is to provide a framework for teachers and school leaders to demonstrate skills essential for instructional practice that creates a digital learning environment for students in the digital age. Additionally, the goal of the DLCT and DLCSA is to support educators, communities, and administrators transition to digital-age teaching and learning and assist school district teams to reflect on current practice while identifying opportunities to support digital schools. The DLCT and DLCSA were developed in conjunction with the ISTE NETs-T and NETs-S and reflect the changing nature of schools in NC as well as nationwide. Technology has become a conventional tool for students to learn as well as becoming a necessity to develop digital-age ready students as they transition from K-12 schools settings to successful digital citizens in higher education institutions, military, and careers. As technology available to schools and students changes, the manner educators approach teaching and learning must also adapt. The DLCT and DLCSA provide teachers and administrators with a framework for making those changes.

The long term goals of the North Carolina Digital Learning Plan includes "Teachers in all classrooms who meet the digital learning competencies standards and are able to effectively apply digital-age approaches, tools, and resources to support their students' learning" by the 2019-2020 school year (Friday Institute for Education Innovation for the North Carolina State Board of Education -Department of Public Instruction [FIEI], 2015). To

accomplish the goal of ensuring all classrooms across the state integrate and adhere to the digital learning plan, district administrative leaders should identify the appropriate digital leadership skills and technology knowledge to model behaviors that enable their teachers to be successful in the classroom. Primarily, basic infrastructure and personnel necessities should be assessed and evaluated to identify current gaps to ensure updates to meet current and future requirements. Infrastructure challenges schools in NC identified as a barrier for successful implementation of digital learning competencies were outmoded building infrastructure, incompatible equipment, and antiquated systems. The capacity to run and maintain digital devices and requisite software has become challenging for schools, especially those in rural areas (FIEI, 2015). Maintaining a school district's technology infrastructure is a complex and expensive endeavor impacting daily functions for administrators, faculty, and students.

Currently, a national emphasis on standards-based accountability based on investing in and implementing digital technologies in the classroom exist for administrators and teachers. The purpose of this mixed method study was to explore the perceptions of school administrators about the DLCSA and DLCT to identify best practices for assessing classroom teachers on the competencies.

### **Literature Review**

As technology becomes pervasive in society, K-12 students are connected and dependent on technology and digital devices for communication, information, and learning. To support digital learning, statewide school initiatives are implementing various digital technology plans across our nation (Sheninger & Murray, 2017). Effectively leveraging technology to advance pedagogical practice in the classroom to support learning is a critical issue facing administrators. Developing professional digital learning opportunities to support school administrators as digital leaders could lead to advocacy for teachers and students. Supporting administrators to embrace digital leadership and fully understand the digital learning competencies teachers integrate could lead to improved assessment practices. Transformational leadership theory supports administrators' vision for change, and Merrill's First Principles of Instruction (FPI) provide the conceptual framework to guide the design and development of professional learning opportunities to support school administrators as digital leaders (Merrill, 2002).

### **Principles of Transformational Leadership**

According to Burns (1978), transformational leadership occurs when one or more individuals engage with others in a mutual process where "leaders and followers raise one another to higher levels of motivation and morality" (p. 4). Burns (1978) originally introduced the concept of transforming leadership in descriptive research on political leaders. The transformational leadership approach supports leaders producing an organizational vision beyond existing systems and practices guiding change (Bass & Avolio, 1994). Additionally, Avolio and Bass (1994) discovered that transformational leaders: (a) inspire loyalty, (b) encourage followers to express their own ideas and opinions, and (c) inspire followers to be proud to be associated with them. Transformational leaders take risks to focus on *transforming* and encouraging change and innovation to support the organization as a whole (Eliophotou-Menon, 2016). Fairholm (2001) discussed the benefits of applying the transforming leadership approach to focus on the more personal side of organizational interactions. Terms such as "vision, culture, values, development, teamwork, and service make sense in the world of transforming leadership" (Fairholm, 2001, p. 2). School administrators embracing the transformational leadership approach focus on developing a collaborative, supportive educational environment, which would support digital teaching and learning competencies.

Historically, K-12 principal's role has been process-based that is concerned with managing daily operations of the building, teachers, community partners, and students (Curnyn, 2013). However, within a changing educational climate and accountability for digital learning, the principal's role continually evolves changing focus being process-based to outcome-based leadership. As schools shift to create digital-age learning environments supporting a resilient digital culture, schools need to develop leaders with a clear vision along with teachers willing to follow that leadership style (Curnyn, 2013; Eliophotou-Menon, 2016). Transformational leaders support and motivate teachers to accomplish goals and design an organizational environment respectful of individual needs and forming a collaborative culture toward the achievement of common goals (Eliophotou-Menon, 2016). While the

principles of transformation leadership support administrators to lead change in the digital age, Merrill's FIP provide a framework for the design and development of professional learning opportunities to promote successful digital leadership modeling.

### **Merrill's First Principles of Instruction**

According to Reigeluth (1999), regardless of program (approach to prescribed practices) or practice (instructional activity), a principle defines a relationship that is always true under appropriate conditions. Merrill (2002) identified shared themes within instructional design theories and models to determine commonalities among terms. While terminology may differ across instructional design theories and models, "principles are necessary for effective and efficient instruction" (p. 44). The First Principles of Instruction (FPI) are interrelated principles applied to instruction to increase student-learning outcomes. The principles should be used to create learning environments instead of explaining how learners create knowledge (Merrill, 2002). Learning is promoted as a result of: (a) solving real-world problems, (b) existing knowledge is activated as a foundation for new knowledge; (c) new knowledge is demonstrated to the learner; (d) new knowledge is applied by the learner; and new knowledge is integrated into the learners practice (Merrill, 2002). The goal of this study will support the design and development of a new digital learning certificate to support administrators as digital leaders and to address the knowledge gap in practice assessing teachers on the digital learning competencies in the classroom. Merrill's (2002) FPI suggests that prior knowledge can activate opportunities to support new knowledge, which supports this instructional design situation.

### **Administrators' Digital Leadership**

According to Domeny (2017), digital leadership is a new leadership construct for K-12 administrators that connect them with technology. Digital leadership encompasses "using the vast reach of technology (especially the use of social media) to improve the lives, well-being, and circumstances of others (Couros, 2013, p. 1). Digital leadership requires administrators employing a mindset leveraging a strategic view of the school's culture, which focuses on student achievement and how students and teachers engage with technology (Askal, 2015; Sheninger & Murray, 2017). For these systemic changes in pedagogical practice and student learning to occur, education leaders should create a shared vision for how technology can meet the needs of all learners while developing a realistic plan that translates the vision into action. Research indicates that administrators creating a digital culture with teachers and within the school's community that will help support the needs of today's learners (Arokiasamy, Abdullah, & Ismail, (2014); Askal, 2015; Domeny, 2017). With society becoming increasingly dependent upon technology it is inevitable for leaders to connect the power of digital technologies to create school cultures that are "transparent, relevant, meaningful, engaging, and inspiring" (Sheninger & Murray, 2017, para. 1). Encouraging school administrators to embrace digital leadership roles requires cultivating new digital technology support and learning opportunities. Sheninger and Murray (2017) found that digital leadership flourishes based on the leader's symbiotic connection with technology, and the principal's support for professional development to support digital technologies in the classroom.

Askal (2015) suggested that school leaders are experiencing a gap in knowledge and application navigating how to lead and support educators with newly required digital developments and integrate practices into school learning environments. Examining school culture resulting from principals as digital leaders, 93% of the principals stated that while they were aware of digital leadership and importance for improving teaching and learning outcomes for the digital age, they experienced limited opportunities to implement digital leadership in their school due to the time required for improved professional development and training, and lack of technological infrastructure, along with financial constraints updating the current technology infrastructure (Askal, 2015).

## **Administrators' Digital Technology Skills & Practice**

Technology standards for teachers at the state and national level provide a foundation for goal setting and classroom integration for teachers to improve instruction in the K-12 classroom (Britten & Cassidy, 2005). "It is critical to the successful infusion of technology standards that there be a means by which classroom teachers can identify the connections among standards, best practices in teaching, and uses of technology (Britten & Cassidy, 2005, p. 50). In 2018, the International Society for Technology in Education (ISTE) developed Standards for Education Leaders (SEL) to support educational leaders prepare for leadership practice to support digital learning strategies in schools: (a) equity and citizenship advocate, (b) visionary planner, (c) empowering leader, (d) systems designer, and (e) connected learner (p. 1-2). The first standard, *equity and citizenship advocate*, described how school leaders use technology to increase equity, inclusion, and digital citizenship practices. Education leaders, through skilled teachers, technology access, modeling behaviors, critical evaluation, and cultivating responsible and digital technology behaviors and environments, demonstrate digital citizenship (SEL, 2018).

Digital technology produces opportunities for growth and could require a new flexible leadership model for effective administrators to support digital leadership for teachers and students. Administrators that model solid technology integration skills and support faculty meeting required technology standards in the classroom, help to transform learning (Zhong, 2017). Determining administrator's technology skills strengths and weakness could lead to increased technology integration efficacy. Cheung and Slavin (2013) determined that technologies used by educational administrators reflect their attitude toward a digital management philosophy. A positive administrator digital management philosophy was reflected in teacher technology experimentation and usage (Daraghmah & David, 2017). School administrators participating in digital technology related continuing education and professional development training to learn and incorporate digital technology skills lead to a positive attitude toward overall digital learning within the school (Daraghmah & David, 2017).

Professional learning opportunities matching the digital leadership vision are vital to the implementation process by teachers. Only through ongoing, consistent, leveled professional development opportunities for teachers and administrators can users gain the technology skills and confidence needed to implement the new digital literacies (Larson, Miller & Ribble, 2009). Larger districts may have instructional technology staff to provide necessary ongoing support for teachers and administrators; however, smaller districts may need to identify alternative methods to fill the gap in practice. Gaining an understanding about how technology standards directly affect members of the school can assist in the identification of best practices for digital leadership by administrators.

## **Administrator's Perception about Technology Leadership**

School administrators directly affect how technology standards are perceived by classroom teachers, students, and community partners. Additionally, principals' modeling strategies directly affect implementation of digital learning strategies in the classroom (Fisher & Waller, 2013). According to Fisher and Waller (2013), the school principal's responsibility in shaping the teachers' beliefs and attitudes toward a shared vision using high quality instruction and technology integration could remove barriers to successful technology implementation in the classroom. The absence of administrative support could be the most significant barrier to technology integration for teachers (Fisher & Waller, 2013). "Leadership has a major impact on education technology usage, leading to improved student outcomes" (Greaves et al., 2012, p. 14). The most effective method for school administrators to promote technology integration is to become a knowledge and effective user of technology (Fisher & Waller, 2013).

Guided by the five ISTE-A Standards for Education Administrators (2009) Metcalf and LaFrance (2013) examined principals' perceptions about technology leadership preparedness, and found that digital citizenship was the most prepared indicator while visionary leadership was the least prepared indicator. Additionally, ISTE-A standards should align and incorporate higher education principal preparation programs as well as district professional development (Metcalf & LaFrance, 2013). Creating and compelling an educational environment from the perspective of visionary leaders should influence the integration of digital technologies in the teaching and learning process (Curnyn, 2013; Kowalski, 2010). Additionally, visionary leaders should seek and promote

communication and collaboration within the building and among community stakeholders. However, Zhong (2017) found that 254 public school teachers from five districts in Mississippi did not value visionary leadership strategies as an effective practice. Principals are most effective when supporting teacher professional development and digital citizenship (Zhong, 2017). Additionally, teacher technology training and support is integral for integration efficacy (Zhong, 2017).

Ribble and Miller (2013) discussed the importance for school administrators to adopt and support a digital technology plan to support a digital learning environment allowing teachers to meet technology standards within a creative, innovative environment. When administrators gain an understanding about teacher technology standards and develop transparent strategies in conjunction with each school's improvement plan to assess best practices for technology integration supporting pedagogical practice in the classroom, open communication and collaborative environments emerge.

### **Digital Technology Assessment**

Technological changes in the digital age challenge schools to integrate innovative technologies in pedagogical practice in the classroom and throughout the K-12 curriculum (Kozma 2010). However, there appears to be a debate as to whether digital technology integration improves student learning. After reviewing several studies about whether there is a clear connection between information and communications technologies and student learning outcomes, it appears as if student-learning outcomes are a far more complicated relationship than simply availability of usage (Kozma, 2010). To date, each state in the United States has latitude to support the ISTE standards and assess classroom teachers on meeting those standards through each state education association and local education association (ISTE, 2018). As school systems across the United States develop strategies to support digital technology integration in the K-12 classroom, assessment strategies identifying and evaluating teachers' breadth of knowledge and types of technology utilized should be developed; moving beyond district created rubrics that delineate whether standards have been *met* or *not met*.

Traditionally, assessment has been related to how well teachers measure student achievement and student learning outcomes (Stiggins, 1991). However, assessing whether K-12 teachers have successfully integrated digital technology standards into the classroom carries a great deal of subjectivity. A plethora of assessment models and theories have been developed to support teacher assessment, however, to date, research has not described how administrators should determine whether teacher technology standards have been met in the classroom. Key research does support the importance for administrators to become digital technology users through continued professional development training to support K-12 teachers in classroom integration.

### **Methods**

Using a mixed method approach (Creswell, 2013), data was collected during a pilot study Fall 2018. A non-experimental descriptive design was appropriate for the quantitative data collection for this pilot study because the aim was to examine perceptions of school administrators about the digital learning competencies. Nonexperimental research lacks the manipulation of an independent variable, random assignment of participants to conditions or orders of conditions, or both (Reio, 2016). Following Internal Review Board approval, a letter of cooperation was submitted and approved by a school district superintendent in southeastern North Carolina. Following approval from the district superintendent to conduct research, an email explaining the purpose, goals, and objectives of the study was sent to potential participants. All district principals and assistant principals received the participation email. A link to the web-based questionnaire beginning with informed consent was included at the end of the study participation email.

Quantitative data collection occurred through an electronic questionnaire distributed to NC school administrators in one district in a southeastern county (n=21), and qualitative data was collected with individual semistructured interviews with a homogeneous group of 6 NC school administrators. For the quantitative data analysis, descriptive results were categorized based on the five focus area supporting the DLCSA: (a) Vision and

strategy (b) Content and instruction , (c) Human capacity and culture, and (d) Personal growth and connectedness (e) Community. Qualitative data analysis included thematic analysis of the transcribed interviews followed an open coding process to identify categories and themes related to administrators’ perceptions about teaching and learning competencies and best practices assessing teachers about the competencies. Content validity of the measures was validated by three experts: researchers in the field of instructional technology and by two school administrators. Web-based questionnaire demographic information and results can be located in Appendix C.

## Pilot Study Results

### Web-based Questionnaire

Twenty-one respondents completed the demographics part of the web-based survey, however, all respondents did not answer the remaining questions (n=17/18) regarding the perceptions of school administrators about the DLCSA. Table 1 describes the demographic data collected including gender, age, job title, school location and characteristic, years of teaching experience, and years of school administration.

**Awareness of the DLCSA.** Based on survey results from the web-based questionnaire, 82.36% (n=14) of school administrators’ are familiar with the NC DLCSAs directive from the NC Department of Public Instruction. The following sections present the descriptive results from the questions related to the perceptions of the five focus areas of the DLCSA.

**Vision and strategy focus area.** According to the NC DLCSAs competency vision and strategy, school administrators will engage to create and communicate a vision for digital teaching and learning in their schools, embedding into the strategic plan for implementation and execution. Additionally, administrators should cultivate and articulate a clear and relevant vision and strategy for digital learning, advocate for, prioritize, and ensure equitable, sustainable access to available technology resources and encourage full participation of all learners in a digital learning environment (ISTE, 2018). Additionally, administrators should plan for and use funding effectively to support and sustain a vision for digital learning. Facilitate a school improvement planning process that is centered around personalized learning supported by digital learning environments.

Overall, respondents believed that they have *somewhat met* the standards for vision and strategy for their school, staff, and students for digital learning. The majority of respondents perceived that they significantly advocate equitable, and sustainable access to technology for staff and students. Almost half of the respondents perceived that their school could use funding specifically to support digital technology learning. Additionally, half of the respondents responded that they were unable to successfully implement a vision and strategy in their school due to a lack of funds or the need for additional training for the staff. More than half of the respondents perceived their ability to facilitate a school improvement planning process to support personalized learning for the staff as *somewhat effective*.

**Content and instruction focus area.** Content and instruction requires school administrators to be the ‘lead learners’ in their schools, model appropriate instructional practices and ensure content that encompasses appropriate digital tools, resources, and pedagogies. Promote and model positive digital citizenship as well as implement practical policies for communication and collaboration with stakeholders to ensure responsible, effective digital teaching and learning practices throughout all school processes. Actively advance and promote digital competencies for teachers by increasing access, opportunity, and resources for professional growth and the development or acquisition of instructional materials. Establish and use systems to analyze and share data to guide whole-school and classroom-level continuous improvement, and establish and use systems for the acquisition, vetting, creation, and implementation of digital content as well as evaluation systems for effectiveness.

Fifty percent of the respondents perceived that they had *significantly* modeled and/or *fully promoted* positive digital citizenship. Forty-four percent of the respondents responded that they perceived they *actively advanced* and promoted digital competencies for teachers by increasing resources; however, 44% of the respondents perceived that they only *somewhat* promoted digital citizenship. More than 50% of respondents stated that they perceived to have *fully* or *significantly* established and used systems to analyze and share data with their staff.

Additionally, 50% perceived that they *somewhat* or *minimally* established and used systems for creation or implementation of systems to analyze and share data with their staff.

**Human capacity and culture focus area.** Human capacity and culture describes how administrators will leverage digital tools and resources to further develop a positive culture of learning that seeks continuous improvement among staff and students. In order to meet this competency, administrators must allocate time, resources, and access to support digital learning efforts, maximize capabilities of the school staff, and ensure ongoing professional growth for self and staff, provide learner-centered environments equipped with appropriate learning resources, including digital technologies, to meet the diverse needs of all learners. Additionally, administrators will need to develop a plan to build technology, pedagogy, and content knowledge capacity in current staff members and create channels for the strategic recruitment of talented new hires. Actively supporting staff through effective modeling and coaching practices in conjunction with utilizing relevant digital technologies to facilitate reflective two-way feedback is key to supporting human capacity and cultivating a digital learning culture.

More than half of the respondents perceived that they *fully* or *significantly* have allocated time, resources, and access to support digital learning efforts in their school. When asked about providing a learner-centered environment, more than 50% of the respondents responded that they have *fully* or *significantly* provided learner-centered environment. Forty-one percent of respondents stated that they have *significantly* built technological pedagogical knowledge and content knowledge into the current technology plan, and 41% of respondents stated that they *somewhat* included technological pedagogical knowledge and content knowledge into the current technology plan. Thirty-five percent of the respondents perceived that they actively support staff by modeling and coaching practices; however, about 35% of respondents discussed that they only *somewhat* support staff by modeling and coaching practice.

**Personal growth and connectedness focus area.** Personal growth and disconnectedness describes how school administrators will develop a personal learning network and demonstrate a dedication for continued growth and excellence. Reflection, sharing, and modeling emerging, promising practices regarding effective use of technology for continuous growth, instructional gain and communication with stakeholders are examples of school leaders and administrators dedication to excellence in digital learning integration. Additionally, administrators will connect with and learn from teachers, administrators, and industry experts locally, nationally, and globally, evaluate emerging and current technologies for their potential to enhance learning environments.

Overall, respondents did not perceive that they performed well in the area of personal growth and connectedness, responding that they needed to identify additional opportunities to improve their current personal growth and connectedness plan. Sixty-one percent of the respondents perceived that they only *somewhat* reflected, shared, or modeled effective use of technology for professional development. More than 50% of respondents stated that they *somewhat* connected with and learned from others, and *somewhat* evaluated technologies for potential uses.

**Community focus area.** Administrators focusing on community will engage all stakeholders in the purpose and function of the school, leveraging multiple types and points of connection and communication to ensure the constant, effective flow of information and input. It is important to model responsible use of technology including, but not limited to, communication, social, ethical, legal, and global issues while facilitating and leveraging effective partnerships between the school and greater community, including local, state, and global communities, to improve the organization and opportunities available to staff and students in support of digital learning. School administrators will need to leverage online communication channels to create and maintain open discourse and collaboration with community stakeholders to establish and meet learning goals. Overall, the majority of respondents perceived that they did not do well in the area of community. Sixty percent of respondents perceived that they *significantly* or *fully modeled* responsible use of technology. Additionally, the majority of respondents also perceived that they *only somewhat* or *minimally* facilitate and leverage effective partnerships between school and greater community, as well as leveraging online communication channels.

## Semistructured Interviews

Six K-12 school administrators responding to the web-based questionnaire agreed to participate in a semistructured interview. Each of the open-ended questions posed supported the three research questions. Examining school administrators' perceptions about the NC Digital Learning Competencies for Administrators, led to three common themes: (a) we do not know what the competencies represent; (b) we do not have the technology skill sets from educational training, and (c) we need models and examples of all levels of the competencies to be successful. Principal 1 stated, "Well first I think they too need to see examples of lessons because the principals don't know. They really need a model to see model examples and I don't know it would be too far-fetched to have them do artifacts". Principal 3 supported what Principal 1 stated,

How can you help them if you don't know what's out there, right? If they ask me a question about Power Teacher Pro, I don't know because I don't input grades. I can't help you. There has to be some knowledge base on my behalf on what they are using. To me, for me to truly evaluate any teacher - because how can you evaluate if you don't know what they are doing with it. We need more of an evaluation how to find things. If I'm going to help with curriculum, which that's what we're preparing children for the 21st century, you just can't jump on every app that comes along.

Principal 4 agreed by purporting opportunities to assist with evaluation:

Just learning, I mean learning the DLC that's one thing I need to be more knowledgeable on. That just takes time to sit down and go through them because there is so much as administrators that we have to do. So having time and then you earmark here is time to do THIS - like we have to do things like Title 1 and school improvement plans - earmarking time to dedicate time to do learn them.

Principal 3 went on to describe making the the competencies work, in spite of feeling a lack of confidence as a qualified leader in the Digital Learning Competencies.

I make it work but I'm not the best qualified I could be because we don't have to be - it wasn't something we learned - it wasn't in our curriculum. I think that new administrators coming out and the sign of the time they probably need it. They do need it but like I said, teachers help me a lot with that and I'm not embarrassed to say that, but they will say how do I do this but once they show me I've got it - you know - but that's still not closing the gap if we don't do something to prepare them.

The second research questions asked NC school administrators' perceptions about the NC Digital Learning Competencies for classroom teachers. Five themes emerged: (a) basic competencies for teachers, (b) district level supported tools (c) district level supported professional development, (d) a gap between current skills and necessary skills to meet teacher competencies, (e) technology use to curriculum integration. Administrators may not have the basic technology skills required by teachers to implement the digital learning competencies in the classroom. For example, Principal 2 stated,

My lens is going to be a little different because my background was curriculum so I am not just looking: at does she know how to use a SMART board but do you know how to use an app. It's more or less how are you applying that app and how are you able to reach kids in a different way through that technology. I really want to see what they're doing and it's not that I'm not just checking off a box that I saw you using that I want to see how it's impacting instruction.

Principal 1 described partnering with human resources to support teachers to not only understand the competencies but also how they earn continuing education units (CEUs) for professional learning opportunities.

I think that something at the district-level we have, you know, we have partnered with human resources and we are trying to work together on that that part of the really the rollout and in their expectations of having those CEUs. So I don't know that we're really where we need to be with that. Unfortunately, sometimes I get a phone call that 'shouldn't this count as a detail credit?' So I don't know, I have to go back in and look so. We probably need to have something a little bit more concrete that we can really say- 'yeah' that counts; that doesn't count and we tried to do it but it's not where we need to be.

Additionally, Principal 1 discussed demonstrating the leadership competency to support teachers.

I think them having a real understanding of what it meant when you're looking at the leadership role we are looking at building capacity in your building I mean what does that mean in examples of what demonstrates that competency. I think that DPI has done a good job putting things out there. A lot of times, nothing against DPI, but a lot of times they just put things out there and just say do it. But with this particular initiative they did their homework for a change and they did provide a lot more resources, unlike other things in the past. Teachers think this too shall pass but I don't think this is really going to.

Principal 3 described the lack of consistency across competencies for the teachers:

Well a lot of teachers think that just using it is meeting the competency. - using it is not competency. I use it to see how the students are engaging in the learning not just using it in general. PowerPoint using is not digital competency, it is how the students are using it to learn is digital competency.

The third research question examined NC school administrators' best practices assessing the NC Digital Learning Competencies for classroom teachers. Three common themes emerged: (a) current based practices are unknown, (b) administrators are not currently prepared to assess best practices, and (c) the current assessment practices utilizes a required rubric, which address Standard IV: C & D, which does not address NC DLCs for classroom teachers. Principal 1 stated, "... so best practice in my eyes we should be consistent and we're not quite there yet." Principal 2 explained the current evaluation instrument in more detail when responding to research question 3:

Right now in the past it was just the teachers evaluation instrument - where evaluations or observations are done. We go to classroom to observe classroom teaching and learning there is a thing dealing with technology - **Why did you choose to use those forms?** - the walk through form is a district form - it is an app or a document. The teacher evaluation instrument is by the state of NC it is mandated. If there were other instruments or other ways to assess the teachers or evaluate teachers I would surely appreciate it - truly incorporate them.

Based on responses from all 6 principals, there is not a standard assessment form for the DLCs for classroom teachers, and they would like to see some type of standardization. Additionally, professional development training would improve assessment practice and lead to improved staff development. "I could always use more training. Who couldn't it? Cuz it's always changing - you are never over trained in technology" (Principal 3). Principal 4 concurred with the need for additional training,

Well - I think I can always learn because I am learning from them. The generation I am supervising help me because that's not what we did when we were in college and in our staff development. We are getting information about the DLCs right ahead of the teachers. I do think that I would like to add a rubric or tool. It would be good for me to go back and take a few classes or to get or have a certificate or something to say that I did it; I graduated in my 30th year starting this month - and you think about that compared to someone that just got out of college and I'm evaluating them on technology; there's a gap. **They are digital**

**natives** and that is an accommodation I as a leader in my area in my years that's something - it's probably not the best practice but it's the best practice right now because I do try to stay ahead of the ball.

Recurring themes emerged during the interview analysis process: (a) we do not know what the competencies represent; (b) we do not have the technology skill sets from educational training, and (c) we need models and examples of all levels of the competencies to be successful. The researchers could then see an emerging connection to the results from the web-based questionnaire. Respondents low perceptions of their personal growth and connectedness and their need to identify additional opportunities to improve their current personal growth and connectedness plan is further supported by their responses in their semi-structured interviews. Structured learning and digital training are supported by both interview and questionnaire analysis.

### **Future Research**

The NC DLCT and NC DLCSA are relatively new. Currently, there are no standard practices for assessing whether the digital competencies have been met by classroom teachers. Additionally, assessment and evaluation practices differ significantly across the United States on whether classroom teachers are meeting ISTE technology standards. School administrators in the pilot study are aware of the standards and the need for additional training in order to meet state and national standards. Future research includes a web-based questionnaire with open and closed-ended questions to identify gaps between skills school administrators currently possess and the skills they will need to successfully implement the DLCSA and support the DLCT. Administrators, while identifying best practices for the annual evaluation process, will also connect to their current knowledge of evaluation and technology integration. Additionally, the administrators will have the opportunity following certification training to put this new information into practice at their school and/or district. Supporting administrators to evaluate classroom educators about the DLCs, will support classroom teacher practice, which could lead to increased student learning outcomes locally and statewide. Additionally, this topic is extremely relevant and can certainly be considered a real-world connection for the learners. A new certificate program in the state to support administrators' views about how to evaluate Digital Learning Competencies for Educators or to meet the Digital Learning Competencies for Administrators could be beneficial.

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