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DIGITAL BRIDGES

Digital Bridges: How Art Educators Build Professional Learning Networks on Twitter

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Kennesaw State University

October 2023

Author Note

A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of
Education in the Bagwell College of Education

Dr. Julie Moore, Chair

Dr. Julia Fuller, Committee Member

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Abstract

This qualitative case study explores the experiences of K-12 art teachers in the United States who participate in the #K12ArtChat, as a form of professional learning. Grounded in social constructivist learning, connectivism, and informal learning, this study addressed how and why art educators use Twitter Chats for professional growth and the potential impact of participation on their teaching practices. Five themes emerged from this study: Twitter's role as a professional development art education platform, the fostering of personal relationships and support, active community participation and advocacy, continuous professional development, and any perceived pedagogical shifts. With a significant emphasis on combatting the pervasive issue of teacher isolation, especially for those educators positioned as singletons without access to content-specific professional learning opportunities, the findings advocate for a shift in the perceptions and practices surrounding professional development for K-12 art educators.

Keywords: Twitter Chats, Professional Development, Art Education, Teacher Isolation

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It's important to honor the memory of my friend and partner in crime, Jenny Vowell. Though she left us before completing her own doctorate, her generous spirit, unwavering support, and shared pursuit of knowledge will forever be in my heart.

Dedication

Throughout this rigorous journey of academic pursuit, there's been a constant thread of support, woven tightly by those closest to me. Paul, your steadfast belief in me and our shared dreams made even the toughest days feel manageable. To Liam, Norah, and Quinn, I deeply appreciate your understanding and the way you've shown me that with love and perseverance, dreams do come true. To my extended family and friends, your understanding, your encouragement, and your countless words of motivation did not go unnoticed. This voyage is not mine alone, it belongs to all of us. Thank you for being the village that raised this dream.

Table of Contents

Abstract.....	2
Acknowledgements	3
Dedication.....	4
Table of Contents	5
List of Tables	10
List of Figures.....	11
Chapter 1: Introduction.....	12
Statement of the Problem	13
Background.....	14
Research Questions	15
Purpose	16
Significance	16
Conceptual Frameworks	17
Review of Relevant Terms	19
Organization of Study.....	20
Chapter 2: Literature Review	22
Professional Development.....	23
Core Elements of Professional Development	24
Barriers to Professional Development.....	25

Teacher Isolation and Content Specific Professional Development	26
Art Education Professional Development	28
Teacher Professional Learning and Social Media	30
Professional Learning Networks	31
Social Learning Theory	32
Connectivism.....	33
Informal Learning	35
Twitter	37
Conclusion	38
Chapter 3: Methodology	41
Worldview	41
Study Goals	42
Research Approach.....	43
Research Questions	44
Research Design	45
Participants	45
Data Gathering.....	47
Data Analysis.....	49
Establishing Trustworthiness.....	51
Credibility	51

Transferability	52
Dependability	52
Confirmability	52
Current Trends	53
Ethics	53
Ethical Commitments	54
Obstacles	55
Chapter 4: Findings	56
Overview	56
The Analytical Process	56
Operational Definitions of Codes and Themes	56
Theme 1: Twitter as a PD/PLC Art in Education Platform	57
The Appeal of Social Media as PD and PLC	57
A Platform for Collaboration	59
Increasing Support From Administration	59
Benefits For Students	59
Twitter Versus Other Platforms	60
Theme 2: Personal Relationships and Support	60
Challenges of Personal Relationships on Twitter	60
Personal Support Within the Chat Group	61

A Response to Feelings of Isolation at Work.....	62
Personal Connection Facilitating Professional Development	63
Theme 3: Community Participation on Twitter.....	64
The Broader Support Community	64
Benefits of Participation and Interconnection.....	65
Supporting and Support for Their Art Programs.....	66
Theme 4: Professional Development and Learning Communities	67
Current Challenges Accessing PD	68
No Specialty-Related Professional Development	68
Convergence	70
Theme 5: Pedagogy	71
Best Practices and Pedagogical Discussion	71
Lesson Content and Planning Ideas	72
Sharing Pedagogical Philosophy.....	73
Summary.....	74
Chapter 5: Discussion and Implications of Findings.....	76
Benefits of Online Professional Development	76
Twitter as a Professional Learning Network	77
Educator Self-Efficacy	78
Pedagogy	79

Relationships	80
Research Question One	82
Research Question Two.....	84
Research Question Three.....	85
Limitations of the Study	86
Implications for Practice.....	88
Implications for Future Research	89
References	92
Appendix A: Participant Interest Survey.....	:111
Appendix B: Interview Questions	114
Appendix C: Focus Group Questions.....	115
Appendix D: Building Bridges Code Tree	116

List of Tables

Table 1: Participant Demographics	46
Table 2: Data Collection Sources	50

List of Figures

Figure 1: Example Professional Learning Network32

Chapter 1: Introduction

In today's dynamic and connected world, research and information exchange are helping to redefine, advance, and disrupt all industries and all areas of knowledge. The education system, and educators within it, must keep up with both progress in education as a discipline, as well as ensure that the content and delivery teach the skills needed for 21st century learners. The Partnership for 21st Century Learning (P21) has created a framework for these skills. This framework includes the '4 C's': critical thinking, communication, collaboration, and creativity. These skills support students' abilities to analyze, synthesize and evaluate complex problems; learn to express their ideas effectively to a variety of audiences; emphasizes teamwork; and stresses the importance of innovative approaches and solutions (P21 Partnership for 21st Century Learning, 2015).

For educators to adequately teach the '4C's' to their students they need to consistently learn themselves. Kabilan, Adlina, & Embi (2011) have found that conventional forms of professional development (PD) have failed to deliver meaningful experiences to enhance teachers' professional learning and competencies. Professional development is considered more effective when it is collaborative, subject specific, has teacher buy-in and sustained over time (Desimone, 2009; Walter & Briggs, 2012, Darling-Hammond et al., 2017).

Art educators frequently grapple with limited access to subject-specific professional development. Social media, particularly platforms like Twitter, opens up avenues for art educators to connect across schools, offering a network for personalized professional development and knowledge sharing (Reilly, 2017). There's substantial evidence that such platforms foster communication and collaboration, aligning with the broader educational research emphasizing the importance of teacher collaboration for professional growth (Schlichte,

Yssel, & Merbler, 2005; Reilly, 2017; Avalos, 2011; Lefstein, et al., 2020). The challenge is amplified for singleton teachers of a subject in a school, often leading to feelings of burnout and helplessness due to their unique position (Gaikwad & Brantley, 1992). The essence of effective professional development is collaboration, intentionality, and results-driven focus (DuFour, 2004; Hord, 2008), which becomes challenging when lacking peers in the same subject area.

The sense of isolation among art educators is a documented concern, particularly for those who are the sole representatives of their discipline in a school (Gaikwad & Brantley, 1992; Ostovar-Nameghi & Sheikahmadi, 2016; Sabol, 2013). This isolation can be detrimental, resulting in feelings of burnout and stagnated professional growth (Sindberg, 2011). Given these challenges, it's crucial to investigate whether Twitter can serve as a remedy to this isolation and act as a conduit for professional enrichment among art educators.

Statement of the Problem

Teaching quality and school leadership are fundamental in enhancing student achievement, as consistently demonstrated by educational research (Mizell, 2010). To remain effective, teachers are required to persistently refine their content knowledge and skills (Jacob & Lefgren, 2004). However, many professional development (PD) programs don't fully cater to the needs of educators, particularly those in specialty areas, resulting in significant gaps (Balsey, 2013; Spricer & Robinson, 2021). Art educators, despite the universal call for continuous learning, often confront a scarcity of local school support, marked by limited information access, diminished interactions, and tenuous ties to their professional networks (Erbas, 2021; Sabol, 2013). Teachers of singular subjects like art education can particularly feel this isolation within their institutions (Schlichte, Yssel, & Merbler, 2005).

Art educators grapple with professional needs distinct from core subjects. Beyond pedagogy, they seek PD opportunities to nurture their artistic identities (Bautista et al., 2021; Thornton, 2011). Regrettably, they are often ushered into learning sessions designed for core subjects, with scant attention to their discipline-specific growth needs. Such a situation redirects their PD time away from art-focused endeavors, as educational priorities lean toward language and STEM (Erbas, 2021; Sabol, 2013). This skewed emphasis, combined with the obligation to self-finance out-of-hours professional growth, leaves art educators feeling alienated and undervalued (Erbas, 2021; Sindberg, 2011). The resulting PD gap can compromise the advancement of arts education at a national level, a concern that cannot be overlooked.

Professional development is instrumental in bolstering both teacher capabilities and student outcomes (Mizell, 2010; Roland & Ross, 2022). For educators, particularly, in-house PD is crucial to addressing students' changing needs (Johnson, Kraft, & Papay, 2012). Yet, art educators face barriers in accessing these opportunities due to inadequate local school support (Sabol, 2013). Addressing the specialized PD needs of art educators and devising strategies to bridge these gaps is paramount. Only through a detailed understanding and tailored solutions can the quality of PD in art education truly advance.

Background

Since the turn of the millennium, research has emphasized accountability, effectiveness, and achievement in education (Nordgren, 2015). The purpose of professional development (PD) is to strengthen educators, enhancing the education system's capacity to support student learning (Guskey, 2002). However, specialty educators often face isolation, impacting their well-being and intentions to stay in the profession (Ostovar-Nameghi & Sheikahmadi, 2016; Schlichte, Yssel, & Merbler, 2005).

Teacher isolation affects educators' professional growth and well-being (Johnson, Berg, & Donaldson, 2005; Ingersoll, 2001). Art educators, often the only representatives of their subject at their schools, face unique challenges. A lack of art-specific PD and collaboration opportunities exacerbates their isolation (Schlichte, Yssel, & Merbler, 2005).

Such isolation affects both the educators and their students. When art educators feel disconnected, they may struggle to evolve their teaching methods (Thornton, 2011). This isolation, combined with limited resources and external pressures, creates a significant PD gap within the art discipline, negatively affecting arts education quality.

By acknowledging the unique needs of arts educators, we can foster environments that encourage collaboration and community. This approach paves the way for improved professional growth for educators and improved quality in arts education.

As a popular social media tool, Twitter provides avenues like Twitter Chats for real-time discussions (Carpenter & Krutka, 2014; Carpenter & Morrison, 2018; Harvey & Hyndman, 2018). These chats provide an opportunity for art educators to break their professional isolation, join a broader community to share ideas, resources, and best practices.

Research Questions

The following are the research questions which drive the analysis, findings and discussion in this study:

1. Do some K-12 art educators use Twitter chats to foster online professional learning? If so, why?
2. How do these K-12 art educators use Twitter chats for online professional learning?
3. Does participation in Twitter chats impact art educators teaching practice? If so, how?

This study aims to better understand art educators' use of Twitter chats for professional development and its impact on their professional practice. Information gained from this study could provide valuable information that will help improve opportunities for content specific professional development for art educators and correct some of the ramifications of teacher isolation.

Purpose

The purpose of this single case study was to better understand the potential of Twitter chats to provide informal professional development for art educators and the perceptions of stakeholders and considerations in relation to this strategy. This study contributes to the next level of synthesis and progress in relation to the issue while also highlighting the problem of access to professional development opportunities for arts educators. To that end, specific goals related to the purpose of this study were to understand:

- the context for the need for professional development for art educators;
- the perception of professional development for art educators, and determination of needs;
- the experience of using Twitter for informal professional development of art educators;
- to what extent the participation in Twitter-based online learning communities impact professional practice, and
- the identification of recommendations that result from analysis and discussion of the primary research and the responses to the research questions.

Significance

Darling-Hammond et al. (2017) found that peer collaboration is the number one contributing factor that fosters professional growth and teacher well-being. Opportunities for

peer collaboration among art teachers is more challenging than it is for teachers in other content areas (Draves, 2017; Sindberg, 2014). This needed collaboration is hindered by a lack of other art teachers within the school building to collaborate with. The difficulty for art teachers continues with limited time to find collaborative partners outside of the workday (Shaw, 2019). This creates teacher isolation (Sabol, 2013). There are several negative consequences associated with teacher isolation. These include negative attitudes about teaching, depression, stress, anxiety, and teacher burnout that leads to teachers leaving the profession (Sindberg, 2011; Bell-Robertson, 2014).

This study is significant as it highlights the misallocation of crucial educational resources including educator time and professional development. It is unfortunate that this gap in subject specific professional development of educators exists, but it is possible that social media can be a proactive tool in the prevention of alienation and isolation of art educators surrounded by core subject educators. Paying attention to this subject, and an interim solution, helps to bring a focus to the problem, and ideally it advances the research agenda.

To fully grasp how learning transpires, a conceptual framework that encompasses various learning theories is essential. This exploration begins with the Social Learning Theory (Bandura, 1977b; Hill et al., 2009) and extends to Connectivism (Brooks, 2015), providing an overview of the avenues through which adult learning may occur. Additionally, informal learning will be touched upon as it pertains to professional development in the 21st century.

Conceptual Frameworks

The conceptual frameworks upon which the research question and approach are based include adult learning models and theories. Specifically, the theories being addressed are Bandura's (1977b) Social Learning Theory as well as advancements of that theory, Social

Constructivism and Connectivism generally, and John Dewey's (1986) theory of experiential learning.

Bandura (1977b) proposed that social modelling provided new patterns of response and behavior that could then be learned by an observer. This social learning included acquiring the mindset and prioritization of learning. Similar ideas have been espoused regarding social aspects of learning by learning from others, learning by emulating others, and information exchange with peers. These social aspects of learning underscore why some K-12 art educators turn to Twitter to foster online professional learning, it provides a live, evolving model of educational engagement and learning through observation and interaction.

Social constructivists believe that meaning and learning are created within the context of interaction, with a significant impact on learning. Social constructivism stresses the significant role culture and context play in the construction of knowledge (Derry, 1999; McMahon, 1997). Learning is considered a social process where knowledge is attained when people are engaged in social activities (Kukla, 2013). Twitter Chats provide a digital platform for these interactions to take place, providing a place. This allows art educators to engage in the social construction of knowledge across a broad cultural and professional context.

Connectivism (Bell, 2011) is the idea that self-directed learners are in the best position to create their own learning spaces, agenda and interaction, and social media facilitates this. Connectivism differs from both social learning and social constructivism in that the actual nodes of connection are assumed to have knowledge and information exchange capacity, and the network itself increases the learning capacity of all within it by providing structure (Conradie, 2014). Connectivism is aligned with the traditional concept of a professional learning network (PLN).

Informal learning is an older idea, but with similar support for self-directed learning through social interaction and experiences which provide for new organization of information to form knowledge. There is considerable evidence that professional and workplace learning typically occurs through informal experiences and networks (Marsick & Volpe, 1999). These informal experiences and interactions can be extended to social media engagement that occurs on platforms such as Twitter. Twitter Chats exemplify this kind of informal and self-directed opportunities for professional development, extending the art educators' learning environment beyond their local school or system.

Review of Relevant Terms

The following terms are defined for the purpose of providing clarity for this research study:

Professional Learning Network - "Uniquely personalized, complex systems of interactions consisting of people, resources, and digital tools that support ongoing learning and professional growth" (Trust, Krutka, & Carpenter, 2016, p.35). *Professional Development* – Those processes that improve the job-related knowledge, skills, or attitudes of school employees (Sparks & Loucks-Horsley, 1989).

Informal Professional Development - "learning that rests primarily in the hands of the learner and happens through observation, trial and error, asking for help, conversing with others, listening to stories, reflecting on a day's events, or stimulated by general interests" (Dabbagh & Kitsantas, 2012, p. 4).

Online Professional Learning Community - A group of educators who use digital and mobile communication technologies to communicate, collaborate, and share common academic goals and attitudes (Blitz, 2013).

Twitter – A social media network that utilizes micro blogging, short 280-character messages called Tweets via a computer or mobile device (Twitter, Inc., n.d.).

Twitter Live Chat - Online, synchronous communication on Twitter used for instructional purposes (Luo, Sickel, & Cheng, 2017).

Tweet (noun) - A message of up to 280 characters that is posted to Twitter. Messages are publicly viewed (Twitter.com, 2014).

Tweet (verb) - The act of posting a message of up to 280 characters on Twitter (Twitter.com, 2014).

Social Media - Online websites that provide users with the opportunities to view and share information (text, pictures, video) in a single location (Boyd & Ellison, 2007; Carr & Hayes, 2015; Third et al., 2011).

Before diving into the specifics of our study, it's important to note a name change. During the period this research was conducted, the platform explored was widely recognized as "Twitter". Even though it has now changed its name to "X" we will continue to use the term "Twitter" in this dissertation to maintain consistency and reflect the participants experiences.

Organization of Study

This dissertation comprises five chapters. The introductory chapter offers an overview of the problem addressed, the research approach, and the rationale for the study. In the second chapter, an extensive literature review explores the significance of professional development for arts educators, examines the status of the issue, and discusses relevant literature on the use of social media for developing professional networks. Chapter Three outlines the methodology, research design, and procedures employed in the study. Chapter Four presents the findings and results derived from the implementation of the methods outlined in Chapter Three. It includes a

comprehensive summary of the identified themes in the data and examines the extent to which Twitter chats fulfill the criteria for successful personal professional development (PD) and professional learning communities (PLCs). Chapter Five delves into a discussion of the findings, highlighting considerations, implications, and offering recommendations for policy, practice, and future research. The final chapter provides the conclusions of this study.

Chapter 2: Literature Review

Professional development (PD) has become ubiquitous in education today. As education changes, so must its teachers. Staying current with the latest educational knowledge and skills requires teachers to spend time learning too. It is almost impossible to keep up if you are not actively engaged in bettering yourself and your profession. Yet many teachers struggle to do this as the demands on educators grow exponentially every year. The current academic research surrounding PD includes a wide and varied approach as researchers work to understand how professional learning has changed in the 21st Century. This review will look more closely at the history of traditional PD, how PD has changed since the inception of social media, and the theoretical underpinnings that support these changes. Additionally, the current state of art education PD research, current learning theories, and the use of Twitter for PD will also be addressed.

I conducted my initial literature searching journal articles with terms such as “art teacher professional development”, “art teacher isolation,” “teacher isolation,” “online professional development,” and “social media for professional development.” My primary sources of information were peer-reviewed full-text articles and ProQuest databases. This approach allowed me to access the most recent dissertations and research so that I could include the latest research in my work. I tracked my citations and considered my search exhausted when I started finding duplicate information or information that was too far from the topic I was researching and no longer relevant. This comprehensive approach allowed me to gather a wide range of relevant literature for my review. I felt it was important to include the foundational research and most current research in order to ensure that the research is relevant within the broader scholarly context (Snyder, 2019).

Professional Development

Professional development is defined as “the development of competence or expertise in one’s profession; the process of acquiring the skills needed to improve performance in a job” (Nguyen, 2019). Similarly, it has been defined as “those processes that improve the job-related knowledge, skills, or attitudes of school employees” (Sparks & Loucks-Horsley, 1989). The way we currently look at PD has grown in understanding and importance. There has been a growing school reform movement since the passage of the No Child Left Behind Act (NCLB) (2001) and the more recent Race to the Top (RTTP) (2009) grant. Both initiatives have focused on the increased need for high-quality PD for educators to become more effective teachers and improve student achievement. Learning Forward (Hirsh-Pasek et al., 2015) sees PD as activities that are an integral part of strategies for providing educators with knowledge and skills necessary for student success. Current research has yielded many studies that focus on the “best practices” needed for effective PD. (Darling-Hammond, et al., 2022; Desimone & Garet, 2015; Guskey, 1991; Hooker, 2008).

Guskey (2002) believes that PD must develop new knowledge and skills in teachers and that knowledge and skill must be used to affect students’ learning. Some of the best practices he suggests are to critically assess and evaluate the effectiveness of the PD plan; establish proof that "research-based" methods are in fact best practices; evaluate PD (using his model of PD evaluation); and to continue to encourage researchers to study PD more rigorously so that our knowledge of the subject grows at a rate consistent with our times. In Hooker's (2008) research she states "there needs to be a continuous cycle of exploration, reflection, discussion, application, and knowledge building, through which teachers grow professionally, and their students gain deeper knowledge" in relation to PD. Both Guskey (1991, 2002) and Hooker (2008) stress the

importance of addressing teachers as individual learners, and the need to make it an ongoing process, not a one-time workshop.

Core Elements of Professional Development

Desimone (2009) has done extensive research on professional development and it's the core elements of effective professional development. She identified core features that lead to teacher learning and a framework for how they can be used successfully.

The core features of effective PD described by Desimone (2009) are:

- Content focused professional activities that focus on subject matter content and how students learn that content.
- Active learning by teachers where they are provided with the opportunity to get involved, observe, make presentations, and to receive feedback. Not passive learning by lecture.
- Coherence of ideas being taught that are consistent with knowledge, beliefs, and with local/state reforms and policies.
- Duration of professional development should be spread over time with twenty or more contact hours.
- Collective participation includes groups of teachers from the same grade, subject or school to build an interactive learning community.

These features alone are not enough for success according to Desimone. She provides a conceptual framework for evaluating the effectiveness of the PD. This model uses interactive relationships between the teacher knowledge and beliefs, classroom practice, and student outcomes. The framework for evaluating effective PD described by Desimone (2009) is:

1. Teachers experience PD.
2. Teachers' knowledge, skills, attitudes, and beliefs are changed by the PD experience.

3. New knowledge, skills, attitudes, and beliefs are used to improve the content of teacher instruction and their approach to pedagogy.
4. Student learning is boosted by the instructional changes that the teacher introduces to the classroom.

When looking at the core features and the framework combined it allows for three kinds of outcomes: Do teachers learn? Do they change their practices? And does student achievement increase as a result (Desimone, 2009)?

Barriers to Professional Development

Traditional models of PD for educators often include one-time PD workshops where teachers sit and get lectured to by the visiting “expert” at a local school level. Similar courses are offered by districts, universities, professional associations, and vendors. These traditional forms of PD are still the norm despite research arguing against the effectiveness of this model.

Traditional kinds of PD such as workshops are not adequate to help teachers acquire skills and then turn them into classroom practices (Little, 1993; Goodyear et al., 2019). Thomas Guskey (2000), the author of *Evaluating Professional Development*, asserted that “many conventional forms of professional development are seen as too top-down and too isolated from school and classroom realities to have much impact on practice” (p.3). The research on PD is filled with unfortunate outcomes to these traditional methods (Corcoran, 1995; Frechtling, 1995; Guskey & Huberman, 1995, Sims & Fletcher-Wood, 2021). As an art educator for over 20 years, I know first-hand the feeling of wasting time while sitting in a whole staff PD that was geared for a specific subject (e.g., math or science) that I do not teach. This experience is not only frustrating but commonplace for the singleton teachers in the building that are the only ones teaching their subjects.

Teacher Isolation and Content Specific Professional Development

As early as 1975, professional teacher isolation was defined as an unwelcome feeling of aloneness (psychological or physical) in a school setting (Lortie, 2020). Although teachers work in buildings with many other teachers, there is little time to interact, share resources and opinions, and discuss their failures and successes (Cournage & Smith-Davis, 1987; Spicer & Robinson, 2021). Additionally, schools often include specialty teachers that do not teach the general subject areas. Documented evidence of these singleton teachers experiencing isolation is found in the areas of music, physical education, and special education (Richards et al., 2018; Schlichte, Yssel, & Merbler, 2005; Sindberg, 2011; Sindberg & Lipscomb, 2005; Spicer & Robinson, 2021).

These feelings of isolation are only compounded when teachers are forced to participate in PD that is not content-specific. Sabol (2006) found that art teachers often complained that PD opportunities related to their visual art content needs were rare and that they often had mandatory PD activities unrelated to their content area. Peer collaboration is one of the most important contributing factors to in-service teachers' professional growth and psychological well-being. (Darling-Hammond et al., 2017). There is an explicit acknowledgment that fostering peer collaboration among art teachers is challenging, much more so than for teachers specializing in other content areas. (Erbas, 2021; Sindberg, 2014; Stanley et al., 2014). The contributing factors that hinder collaboration include being the sole teacher of the subject within your school, limited time to collaborate with art teachers outside of your school, and the diminishment of the importance of the arts within many schools (Hourigan, 2011; Shaw, 2019).

The complications of isolation, however, are not felt uniformly across all specialist areas. Arts and music specialists face unique challenges, often intensified by their role's distinctive

nature. Many times, these educators are the only representatives of their subject in a school, especially in primary or middle schools situated in urban or suburban settings. Additionally, those working in rural regions or smaller school districts frequently find themselves adopting itinerant roles, moving between schools to fulfill their teaching assignments (Bell-Robertson, 2014). Such a scattered routine can further exacerbate their feelings of invisibility and inferiority.

Research has identified isolation occurring in three distinct ways:

1. **Adaptive Isolation:** This form is usually experienced by teachers who are overwhelmed with the demands that come with teaching. This can include everything from administrative tasks, rigorous teaching schedules, after school obligations, and if they are itinerant and traveling from school to school (Bell-Robertson, 2014)
2. **Physical Isolation:** When you are the only teacher in your building teaching your subject you can have limited (if any) opportunity to collaborate with your subject specific peers. Additionally, there is no one to share resources or collaborate with at your local school. This absence of others subject specific teachers creates silo teachers where each is unaware of what others are doing (Davidson & Dwyer, 2014).
3. **Emotional/Psychological Isolation:** This form of isolation is when you feel a lack of support for what you do, no sense of belonging within a broader professional community. The absence for these social emotional experiences prevents teachers from building their own supportive networks that can help relieve these feelings of isolation (Hargreaves, 2001).

Art Education Professional Development

The goal of PD today is to prepare teachers to focus on the needs of their students, regardless of subject matter (Hirsh, 2022; Mizell, 2010). If this is the case then why are so many art educators still attending PD that does not apply to them (Balsey, 2013; Philipsen et al, 2019)? The educational changes made that came with NCLB and Race to the Top (RTT) have established the importance of educator accountability in the high stakes of education today. This increased accountability concerns art educators, many of whom do not have access to the PD they need in order to meet today's educational standards (Gess-Newsome et al, 2019; Sabol, 2013}. While interdisciplinary PD has its place, it should not be to the exclusion of training in the teacher's core content area. The arts have many naturally occurring interdisciplinary connections that can be honed through PD in the arts (Puppe et al., 2020; Taylor et al., 2011).

Available research on PD for art educators is hard to find. Milbrandt, Miraglia, and Zimmerman (2018) published an article that analyzed the current research surrounding teaching and learning in the visual arts from the years 2014-2016. They examined articles found in *Studies in Art Education* and *International Journal for Education Through Art*. They chose research based on theory that informed teacher practice (Yarger & Smith, 1990). They concluded that research was most needed in the “areas of demographics, technology, assessment, and social justice” (Milbrandt, Miraglia, & Zimmerman, 2018). While these areas address essential themes in the visual arts, what is notably missing is art education PD. Additional research shows that PD for art teachers is becoming less focused on the arts itself (Sabol, 2013).

The National Art Education Association (Casteel, 2018) published the *Professional Standards for Visual Arts Educators*. The eight standards represent the art education field and include the knowledge and skills all visual arts educators should know and be able to do. The

standard that specifically applies to this research is “Standard XII: Visual Arts Educators Continue Their Professional Development throughout Their Careers” (Casteel, 2018). This standard has the following strands:

- Participate in seminars, workshops, and conferences to further their professional development and encourage colleagues to do the same;
- Understand the history of the profession and current philosophical foundations of visual arts education;
- Continually examine their assumptions and thinking about themselves, their students, and the field of visual arts education;
- Clearly articulate their teaching philosophies and the unique ways in which art learning can contribute to cognitive, emotional, moral, and social growth;
- Maintain a professional resume and teaching portfolio, and understand the importance of continuing to document their teaching effectiveness throughout their careers; and
- Remain aware of current research in the field and continually seek out and implement varied instructional strategies.

Demographic research is one way to understand the relevancy of what art educators are currently doing in their classrooms. It is a broad look at what is happening in our field without the idiosyncrasies of individual researcher’s interests. Burton’s (2016) most recent demographic research looked at the 2016 National Assessment of Educational Progress (NAEP) Visual Arts Report Card and compared the results found there to the National Core Curriculum Art Standards (NCCAS). The Visual Arts Report Card is an “important national survey that reveals the condition of art education once a decade” (Keiper et al., 2009). This survey, given every 10 years, gives us a snapshot of where art education is now. Comparing this to the 2014 NCCAS

shows us where we are going and ultimately what we want to achieve. Comparing these two instruments shows the gaps that we are missing as art educators. Burton (2016) found that art studio skills are consistently and proficiently taught throughout art education today. He also found major weaknesses in the areas of student choice, group work, and the use of new digital media to produce and learn about art.

Almost ten years have passed since the last report card was written, yet its stress on the importance of art education PD remains just as pertinent today. The need for PD to be content-specific is vital to close the educational gaps identified and to enhance our growth as educators. One way to achieve these PD objectives is through the use of social media (Carr & Hayes, 2015; Buffington, 2008).

Teacher Professional Learning and Social Media

Research on educator use of social media as a form of PD has shown that educators participate in online communication and collaboration frequently (Britt & Paulus, 2016; Wesely, 2013). Carpenter and Krutka (2014) have shown that participation in online professional communities is a way to help educators with their feelings of isolation and help to provide access to additional educational resources that might be otherwise unattainable. Most of the research found regarding the use of social media predominantly used pre-service teachers (PST) as their subjects. Blogs, wikis, Facebook, and Twitter were predominant social media resources used (Carpenter, 2014; Johnson & Yang, 2009; Wheeler & Ebner, 2010). Anderson and Dron (2011) found that Twitter was an excellent social media tool for finding like-minded educators and creating connections. Carpenter and Kruka (2014) delved even further and used Twitter directly to recruit their survey participants of teachers and administrators. Visser et al. (2014) showed

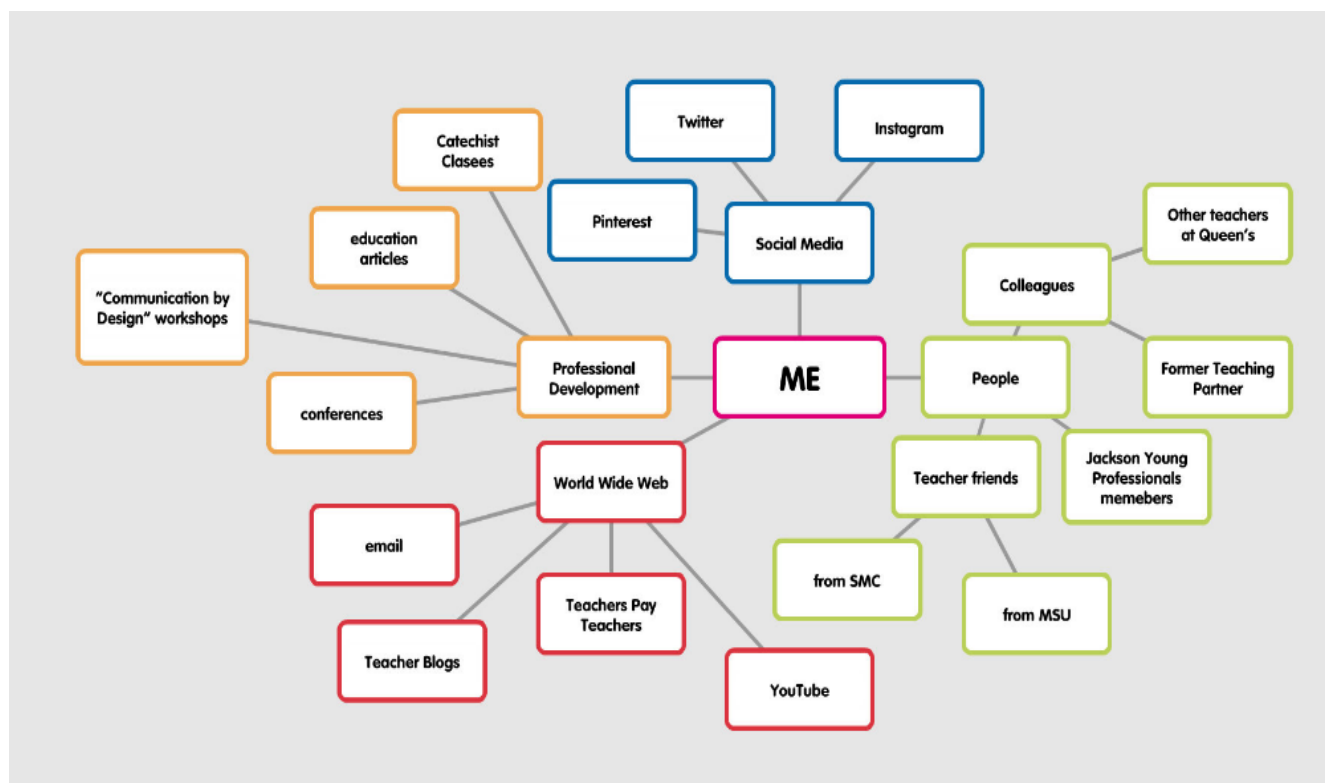
that social media was being used as professional development and to grow educator personal learning networks.

Professional Learning Networks

A professional learning network (PLN) is defined by Sloep (2013) as a “learning network...tailored to the individual, for instance to give learner-centric feedback or advice” (p. 61). Lieberman and Miller (2008) espouse those members of a PLN are not passive receivers but members of a valuable network of a learning community that is used to enhance professional practice. Additionally, Trust (2012, p. 133) believes that the term PLN is defined as “a system of interpersonal connections and resources that support informal learning.” Although all somewhat different definitions it can be said that PLNs are a way for educators to connect with like-minded or content similar educators to collaborate and grow professionally. “PLN’s allow educators to participate in do-it-yourself PD (Richardson and Mancabelli, 2011, p.33). Not only are PLN’s a major source of professional information, but these networks also allow the individual teacher to create the connections they see as best and give them more ownership over their own PD choices (Downes, 2009).

Figure 1

Example Professional Learning Network



Social Learning Theory

Bandura (1977b) believed “that theories must demonstrate predictive power, and they must accurately identify causal factors, as shown by the fact that varying the postulated determinants produces related changes in behavior.” He stated that “in the social learning system, new patterns of behavior can be acquired through direct experience or by observing the behavior of others” (Bandura, 1977b, p.3). Vygotsky (1978) followed with his research contending that learning is internalized and occurs through imitation from others. Wenger (1998) believed that learning occurred by practice and through people you share a common interest with. In their book *The New Social Learning*, Bingham and Conner (2015) build on this theory to include the use of social media stating, “new social learning combines social media tools with a

shift in organizational culture, a shift that encourages ongoing knowledge transfer and connects people in ways that make learning enjoyable” (p.8). They define Social Learning as “participating with other people to make sense of new ideas, learning with them and from them online or side by side” (Bingham & Conner, 2015, p.316).

Social Constructivism

Building on the premise of social learning, social constructivists believe that they can construct meaning and understanding through social interactions of the individual (Abderrahim & Plana, 2021; Kim, 2001). This meaning is constructed with a culturally organized context where technology tools are used to interact (Vygotsky, 1978). Like other qualitative research paradigms, social constructivism draws the importance of researcher bias and stresses the importance of researcher positioning and perspective within the research (Creswell, 2009). It is the melding of new information and how it fits within existing knowledge where learning takes place (Gagon & Collay, 2005; Selwyn, 2011).

Connectivism

Connectivism picks up where social constructivism ends. Siemens (2005) states that Connectivism stresses that learning is a type of interaction centered on networked knowledge by the individual learner to create growth. Social Constructivism and Connectivism are both based on learning taking place during a social process where learning occurs through social interaction. Where they differ is that Connectivism also focuses on interaction with and between networked nodes (people, media, locations), believing that knowledge is distributed across these networked connections (Downes, 2007). The development and maintenance of these socially networked environments are what extends the opportunity for interaction and therefore knowledge (Couros, 2009; Downes, 2022).

The main principles of Connectivism defined by Siemens (2004) are:

- Learning and knowledge rest in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making itself is a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

This connectivist pedagogy allows learners to create their own spaces for interaction whether it be face-to-face or by using social media to access their own networked nodes (Bell, 2011, Downes, 2022). The advantages of this are a never-ending source of information that is oftentimes readily available and just a click away. Kaufman (2000) notes that with connectivist approaches to learning, learners can benefit from “adjacent possible” learning. This is described as taking advantage of those unexpected bits of information received in your nodes for the potential of additional and unexpected learning. Siemens (2004) stresses the adage that in connectivist learning it is not what you know but whom you know that is the foundation for a PLN. Research has also noted that the kind of learning that is typical of social media is informal learning and this disrupts traditional learning (Hicks & Graber, 2010).

Informal Learning

The philosophy of John Dewey (1980) postulates that learning is fundamentally rooted in experiences. Dewey believed that we are all lifelong learners, with our acquisition of knowledge shaped through self-reflective thought. This perspective laid the groundwork for future subsequent learning theories, even though the distinct concept of informal learning wasn't explicitly defined until Knowles' seminal work, *Informal Adult Education* (1950).

Contrasting formalized educational settings, research indicates that in the context of employee training, a mere 20 percent of learning originates from structured opportunities (Marsick & Watkins, 2015). Rather, informal learning seamlessly permeates our daily routines and activities (Marsick & Volpe, 1999; Callanan, et al., 2011). Informal learning can manifest in two primary manners. Firstly, it unfolds outside of conventional educational settings, akin to experiences gained during field trips. Secondly, it's interwoven into our everyday lives, evident when we indulge in reading, engage in conversations, or even when we resort to search engines for instantaneous information (Conlon, 2004).

Delving deeper into the workings of informal learning, (Kwakman, 2001; Moore & Klein, 2020) discerned that for educators, it could be categorized into four overarching activities: staying updated in one's field through reading, experimenting with novel methodologies, reflective practices, and fostering collaborations with peers. These avenues for informal learning often resemble "conversations, social interactions, teamwork, and mentoring" (LeClus, 2011), highlighting the importance of social networks, including the burgeoning sphere of social media.

The digital realm, particularly social media, presents a fascinating addition in the spectrum of informal learning. Notably, when individuals navigate online forums or platforms, the underlying motivation often revolves around seeking pertinent information or addressing

specific challenges. Yet, these forums evolve into public spheres explicitly designed for collective learning and exchange of knowledge. This nature of learning isn't predicated upon formal instruction; it develops from proactive engagement in real-world tasks and activities (Machles, 2003). Such engagement facilitates comprehension of our surroundings, enabling the synthesis of applicable knowledge. Astoundingly, informal learning constitutes approximately 90% of our lifelong learning (Conlon, 2004; Williams, 2014).

In the setting of social networks, users often chart their unique learning trajectory, determining their level of engagement and sculpting personalized learning environments (Conlon, 2004). Several research studies have explored the potential of social media applications in catalyzing informal learning, fostering personal learning environments (PLEs), and nurturing online learning communities. Twitter, for instance, is frequently heralded as a leading platform where informal learning thrives (Deyamport, 2013; Luo et al., 2020; Singh, 2020).

The dominant literature highlights those platforms like Facebook and Twitter are filled with discussions that transform into informal educational hubs. These dialogues pave the way for the formation of learning networks, study clusters, or communities of practice tailored to individual needs (Attwell, 2007; López-Torres et al., 2022; Mills and Chandra 2011; Williams, 2014). However, constructing informal learning networks on such platforms isn't devoid of challenges. Voices can become diluted, institutional controls may be absent, and there are hurdles associated with pedagogical and cognitive aspects (Bower, 2019; Carpenter & Morrison, 2018). Nonetheless, the community of practice model appears to encapsulate the essence of informal learning on social media platforms more succinctly, emphasizing mutual goals, shared resources, and sustained member interactions.

Twitter

In March of 2006, the social networking service Twitter was introduced by Jack Dorsey, Evan Williams, and Biz Stone. Twitter is considered a micro-blog since it utilizes 280 character "tweets." Tweets are messages that a user posts on the web-based forum. You can follow other users on Twitter, and this is how you build a professional network. Following another user means you can see their tweets when you log on to the forum. Hashtags are often used to add information about the subject of a tweet. Searching for #arteducation yields thousands of results from tweets to photographs and videos. Every Twitter user also has their own individual handle. You can communicate directly with someone by tweeting with the @ symbol included with the handle of the person you want to Tweet to or about. This creates an opportunity for ongoing dialogue between the tweeting parties. These tweets are public and therefore anyone can read them or join the conversation. In addition to public tweets, you can also direct message someone on Twitter. These messages are private and allow for collaboration too. Bingham and Connor (2015) state in their research that Twitter has grown to include more professionally oriented live chat events which increase the opportunity for professional collaboration (Homewood, 2022; Lybarger, 2021).

The constant information flow of Twitter adds value for teachers and students. Ebner (et al., 2010) summarized the findings of their research on microblogging and found Twitter provides:

- Informal learning through informal communication.
- Support of collaboration.
- Feedback on thoughts.
- Suggestions to reflect one's own thoughts.

- Collaboration independent of time and place.
- Direct examination of thoughts and causes of learning.
- Current information on the status of learning.
- Possibility to steer the intervention in the learning process of individuals and groups.
- Possibility for immediate, direct feedback.
- Facilitation of group work.
- Getting the impression of the learning climate.

By providing opportunities for educators to share knowledge, resources, and experience Twitter is filling the gap left by traditional forms of PD (Cox, 2005; Homewood, 2022; Killion 2011; Trust 2012).

An area of Twitter growing in popularity is the Twitter Chat. Twitter Chats are online, scheduled, synchronous communication on Twitter that use a single hashtag for identification (Luo, Sickel, & Cheng, 2017). Often recurring, these chats are on specific topics that regularly connect people with similar interests. The Twitter chat feature has been shown to reduce feelings of isolation among its participants (Ferguson & Wheat, 2015). These events are designed around synchronous communication and are seen as opportunities for collective meaning-making within a PLN (Carpenter & Krutka, 2015). A recent study found that 13% of teacher's self-report that they use “Twitter as an informal self-directed tool for professional learning” (Project Tomorrow, 2017, p.5).

Conclusion

As stated previously, the National Art Education Association found in their 2014 Research Commission survey that overwhelmingly there was a need for more research in the areas of demographics, technology, assessment, and social justice. Reflecting on the change that

I have seen in the field of art education since I began teaching, I am now more excited than ever about the field. I have always been a discipline-based arts education teacher choosing to focus not just on studio skills but also on production, aesthetics, art history, and art criticism. Although

this approach has faded into the background for many, I use it as the foundation for everything I do. Over the past decade in education maker-centered learning has grown in popularity (May & Clapp, 2017). I see a deep connection between this movement and arts education. It has expanded my view of arts education to include a more learner centered approach that focuses on problem solving and collaboration in real world contexts. Sinclair, Jeanneret, and O'Toole (2009) state that collaboration helps form alternative solutions to problems, helps to teach flexibility, and being open to possibilities.

This study, although not a demographic one, still sheds light on how art educators are overcoming issues of isolative demographics by participating in informal online professional development on Twitter. This research also adds to the existing research on the use of Twitter as a social media tool being used to gain informal professional development knowledge. When looking at the research on art educators most of the research is focused on becoming art educators and pre-service teachers (Markello, 2013; Unrath & Kerridge, 2009). The dearth of research in art education was surprising to me when I began my own research, and I believe my research my research informs and adds to the body of growing knowledge around social media use as an informal professional development tool. Art educators use social media in a variety of ways (Buffington, 2008; Carpenter et al., 2020), yet the studies about professional development issues and needs of visual arts educators are severely lacking (Sabol, 2013). My study sheds some new light on the importance of arts-focused PD and how social media can help bridge the isolation and need for content specific opportunities for learning. The International Society for

Technology in Education (2000) states “Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning.” This standard for educators shows me the importance of my research as it relates to technology leaders. Researching this learning taking place for art educators situates my study to help fill a gap in the current literature.

Chapter 3: Methodology

The purpose of this case study was to explore how K-12 art educators perceived the use of Twitter chats as a form of informal professional development. The assumption was that a better understanding of this phenomenon would provide teachers and administrators an additional understanding of how professional learning can take place outside of the traditionally used sit and get professional development model (Intrator & Kunzman, 2007). This novel approach to teacher professional learning combats isolation and enables online collaboration, specifically addressing art educators' development needs.

Worldview

To know me is to know I have an innately inquisitive nature. I have always sought answers to questions that help me understand the world around me. When thinking about the various interpretive frameworks that I could apply towards my research I saw the value in each of them. Initially, I was drawn to Post positivism. Reminiscent of the Post-Modern Art Movement, Post positivism seeks to find knowledge tied to the conditions of the world today (Creswell, 2013). This appealed to me, but I realized I was most interested in how individuals interact with each other and their society, it then became clear to me that the paradigm I felt the most strongly about is Social Constructivism.

Social Constructivism is the belief that knowledge is developed through social interaction, language use, and shared experiences. It changes the notion that learning is an individual experience and puts the onus on active participation, shared experience, and reflection. People in their cultural context share their real-world complexities to construct knowledge in an inductive way (Burr, 2015). This paradigm is based on authentic tasks in real-world settings. Through observations (of Twitter chat conversations), interviews, and focus

groups, a pattern emerged through thoughtful reflection on the experience from both subject and researcher. It is this reflection that mattered to me most. For every participant, there was a unique experience. Everyone brought history and knowledge with them that was different (Yin, 2003). Social Constructivism makes room for these differences and sees them as an asset to the research. Every participant experienced something in their own unique way, yet simultaneously there were contextual themes found while coding their reflections. As a researcher, I know variety and inclusiveness has only made my research stronger. It was important to me that every voice was heard, even the ones that are usually marginalized. This brought me back to my undergraduate college days when I was a psychology major. I was drawn to Piaget's (1970) theory of cognitive and affective development. His constructs of discovery learning, the importance of readiness, and acceptance of individual differences ties directly to Social Constructivism. With an interpretive epistemology, those reflections on experiences allowed for context – and – content dependent knowledge construction (Kivunja & Kuyini, 2017). This led to an in-depth description of the phenomenon where the findings were shared and validated by the participants through member checking.

Study Goals

To tease out the in-depth descriptions of art educators' use of social media for informal professional development from my research, I paid close attention to their perceptions, opinions, beliefs, and attitudes. My overarching goal was to understand how and why art educators are using social media to gain informal professional learning. Knowing that perceptions and beliefs are guided and filtered through individual experience helped to guide my inquiry (Piaget, 1970). Opinions and attitudes helped me get a more unobstructed view of the lens the participants saw through regarding their use of Twitter chats.

Personally, and practically, I wanted to know this information in the hopes that I could make a concrete argument for why I need content specific professional development in the arts. In my current capacity as an art teacher in a middle school setting, I must travel to other schools to find colleagues who teach my subject. This is not always a practical solution as it takes time, scheduling, and usually surrounds another event. Having a convenient way to grow professionally using social media would eliminate the need for me to participate in whole school training that does not apply to me and make it easier to collaborate with educators who teach my same content (Broad, 2015).

Research Approach

As a researcher in education, I am drawn to the questions of how and why a case is the way it is (Rowley, 2002). Reflection in teaching is the cornerstone to my longevity as a teacher and the reason I am still in the classroom. For this research, I used a social constructivist (Schreiber & Valle, 2013; Vygotsky, 1978) approach to look at the case of why and how art educators use Twitter as an online learning community and how, if at all, they gained informal knowledge to use in their classrooms. This qualitative research was a case study of art educators who were currently participating in a Twitter Chat (#k12art) as a form of informal professional development. I chose a qualitative study so that I could get an in-depth analysis of participant voice regarding their use of Twitter as an informal professional development tool (Merriam & Grenier, 2019; Yin, 2003). Qualitative case studies allow participants to share their own voice and perspectives, allowing rich descriptions of experiences used to shed insight to better understand the phenomenon (Alam, 2021; Crabtree & Miller, 2022).

Research Questions

Professional development for educators is not a new phenomenon, yet there has been a much-dedicated focus on improving PD for all teachers in recent years. This practice often excludes art educators as PD is usually geared towards the subjects of math, science, and reading (Eisner and Day, 2004). Art educators do not benefit from this practice as they end up participating in PD that is irrelevant to their practice (Balsey, 2013; Eisner, 2017). Arts educators are overcoming these shortcomings by turning to online learning communities to grow professionally (Battersby & Verdi, 2015). An online learning community can be defined as an online location where people come together to socially construct knowledge through collaboration and reflection (Gunawardena, Lowe & Anderson, 1997). Many teachers espouse the benefits of online learning communities, yet much remains to be understood about what these benefits are. The purpose of this qualitative study was to explore art educators' use of Twitter Chats as an online learning community for informal professional development as a part of their own PLN (Sabol, 2013).

Stake (2010) believes that the question driving the research study should be of primary importance. To explore the case with art educators my research investigated the following questions:

1. Do some K-12 art educators use Twitter chats to foster online professional learning? If so, why?
2. How do these K-12 art educators use Twitter chats for online professional learning?
3. Does participation in Twitter chats impact art educators teaching practice? If so, how?

Research Design

The chosen methodological approach was a case study design. Case studies are used to answer the “how” and “why” questions that researchers have about a phenomenon (Rowley, 2002). This case study approach was similar to that of Yin (2003), who focused on the interview data to determine different themes found in order to answer the research questions. It allowed for research to focus on authentic experiences (Yin, 2003). Using the different data sources of interviews, focus group, and tweets when compiling the data collection followed Yin’s method of inputting all data collected and formulating a cluster of themes. These clustered themes provided rich discussion and interpretation during the research findings component of the research. I wanted in-depth information about this experience directly from the participants to achieve this experiential understanding (Stake, 2010).

This bounded case method allows for a more in-depth look at the perceptions and opinions of the participants (Creswell, 2013). Information is discovered through the process and not predefined to predict outcomes. It is preferably formed throughout the research, and this data is rich in authentic experience. I chose a case study approach to better understand art teachers’ experiences in using Twitter chats as an online learning community.

Participants

This case study had four participants. A purposeful criterion sampling (Patton, 2005) was used to choose the participants from a pool of teachers who already participate in the Twitter chat # K12ArtChat (Table 1). The participants were public school K-12 art teachers, working in the United States, who regularly participate in the # K12ArtChat. Regular participation was defined as participating in at least two out of four live Twitter Chats that take place each month under the # K12ArtChat hashtag. Teachers participated in at least two of the four chats held over

the course of a month, participated in a semi-structured interview, and participated in a focus group to be included in the study.

Table 1

Participant Demographics

Participant	Survey	Interview	Focus Group	# of Chats
Tim	Yes	Yes	Yes	6
Keri	Yes	Yes	Yes	3
Niki	Yes	Yes	Yes	2
Matt	Yes	Yes	No	4

Note. One participant unfortunately deceased prior to the focus group session.

Initially, participants were to be chosen with a range of experience and grade levels. I had criteria ready to whittle down the volunteers to the number of participants that I needed. This turned out to be unnecessary because I had a particularly challenging time finding the minimum four participants I needed to move forward with my study. The initial call for participants was on Twitter during a live # K12ArtChat. The tweet included a link for interested participants to go to find out more information about the study, read the informed consent necessary for the IRB, and to answer some preliminary demographic questions. This Tweet yielded 10 responses and out of those 10 responses only two participants were willing to continue to participate in the study. The following week I asked the host of the # K12ArtChat to share my initial Tweet calling for participants. This yielded four more responses and the two additional participants I needed. Both participants agreed to continue with the study but then changed their minds prior to the initial interviews. This facilitated the need for a third call out the next week that yielded the last two participants for this study.

A pre-survey was offered to the participants of the #K12ArtChat Twitter community. Participants who choose to take the survey self-reported their frequency of use with Twitter, Twitter chats, role in education, experience in education, and willingness to participate in an online interview. Due to the online environment of this study, and ease of identification, participants came from already established # K12ArtChat participants. The survey (Appendix A) was sent out to participants via Twitter using the # K12ArtChat hashtag. To be selected for this study, participants needed to self-report being a K-12 art educator, participate in the #K12ArtChat at least twice a month and be willing to be interviewed online. This purposeful criterion sampling of participants helped to remove potential influences of external barriers and helped to ensure generalizability of results.

Data Gathering

In the course of the research, participants' Twitter #K12ArtChat tweets were systematically recorded. The teachers also engaged in one semi-structured interview (Appendix B). This interview, conducted online via Zoom, was designed to delve deeper into their experiences and perspectives. Using a mix of pre-determined and emergent questions, the interview aimed to capture both the breadth and depth of participants' engagement with #K12ArtChat. This semi-structured approach ensured flexibility in exploring specific themes while also allowing for unanticipated insights to emerge. After initial data from interviews was collected, a focus group was held to member check findings and to tease out more clarity of some of the interview questions. Since the participants were not local, data was collected virtually via Zoom. These three activities took place in a three-month time span.

Month 1 – Researcher administered the pre-survey to gather baseline data that was used to choose participants.

Month 2 – Researcher collected data from Twitter chat #K12ArtChat.

Month 3 – Researcher conducted online, individual interviews to discuss the understanding, perceptions, and outcomes from the Twitter chat experience. Researcher conducted an online focus group using Zoom. A semi-structured script was used to help guide questions for clarity (Appendix C).

Informed consent included educating the participants about the risks and benefits of participating in the research. The purpose of the study and the procedures that were planned to take place were also shared. Participants were informed of any possible risks they might experience from participating in my research study. Additionally, I stressed that participant information will be kept confidential using pseudonyms so that they felt they could answer all questions honestly without fear. This helped make my study transparent to the participants and made them aware of the level of commitment they needed to make to participate in the study. I also used a consent form that was written in simple language everyone could understand and were signed by participants before they begin participating in any events.

Twitter chat transcripts were generated by Otter.ai, an online transcription service. Over one month the transcripts of each of the four #K12ArtChat conversations were recorded, transcribed, and uploaded to Otter.ai. This enabled me to drill down to my individual participants to more closely look at their participation in the #K12ArtChat in general. This report also allowed me to track keywords, search the tweets, and provided graphic reports for keyword analysis.

Interviews took place and were recorded on Zoom. To ensure accuracy of the AI generated transcripts, I compared the transcripts to original recordings and made any necessary corrections. Interviews were scheduled following the data collection of the Twitter chats in order

to design specific questions around gathered data (Appendix B). A focus group was conducted at the end of the study to help get clarity from interview questions and final reflections from participants (Appendix C). Researcher memos were also used throughout the data collection process. This allowed me to capture ideas, thoughts and questions that were used as analytic or conceptual notes to add an extra layer of narrative to data interpretation. Glaser (1978) states, memos are “the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding” (p. 83). Memos were used as one part of the iterative process of data analysis.

Data Analysis

A general inductive approach was used for analyzing the data collected. This method was chosen because it allows “the researcher to begin with an area of study and allows the theory to emerge from the data” (Strauss & Corbin, 1998, p.12).

To identify patterns in the data, I used an open coding analysis (Corbin & Strauss, 2007) approach. This allowed for the discovery and content building that comes from case studies. I did not go into this with preconceived ideas about what I was going to find, but instead let the data speak for itself. The approach was used to generate the coding themes that I then used for analysis of the qualitative data. Descriptive analysis was also used to describe the perceived benefits of the experience and the perceptions of Twitter chat use as an informal professional development tool.

I used Atlas.ai to house and code my data. Atlas.ai was an invaluable resource for organizing this large amount of data. This program helped me see the relationships between the data that I am collecting. This online program also helped with transcript analysis, content analysis, text interpretation and coding. The first pass of coding presented the researcher with

many broad codes that were then be passed through a second and third time to create themes. Atlas.ai made these multiple levels of analysis easier to interpret and provide summaries of the analysis conducted. This goes a long way to ensure an insightful picture was formed of the experience, and that the rich data will inform future studies. Atlas.ai is also fully encrypted which will add another layer of security to my data.

Table 2

Data Collection Sources

Research Questions	Data Sources
1. Do some K-12 art educators use Twitter Chats to foster online professional learning? If so, why?	Pre-Survey Individual Interviews Transcripts of Tweets Focus Group
2. How do K-12 art educators use Twitter as an online Professional Learning Network?	Individual Interviews Transcripts of Tweets Focus Group
3. Does participation in Twitter chats impact art educators' teaching practice? If so, how?	Individual Interviews Transcripts of Tweets Focus Group

Data sources are the survey data from the pre-surveys, the transcripts from the four Twitter chats, transcripts from the individual interviews, and the transcript from the focus group.

Twitter chat data were collected using two web-based programs. Tweetdeck was used to organize and archive the weekly #k12art chats for later coding. Tweet Reach was used to gather analytics for each chat regarding number of users, frequency of posting by Twitter handle, and accounts reached per chat. As of this writing the #K12ArtChat has reached over 480,611 accounts with 250,550 of those accounts participating in the chat since its inception in 2014.

The constant comparison method (Corbin & Strauss, 2007) was used when organizing my data in Atlas.ai to gather a complete picture of the information obtained during the data collection process. After importing transcripts, I started by examining a set of data using the

constant comparison method. As I moved forward each subsequent piece of data or transcript was not analyzed independently but compared to previously examined data. This iterative approach allowed me to determine if certain sentiments regarding the effectiveness of Twitter chats were isolated occurrences or recurring themes by referencing transcripts. This open coding method allowed the identification of different categories. The second and third pass through the data was used to piece data codes together allowing connections and themes to emerge. The final stage of data analysis was to choose core categories that systematically connect other categories. New categories were developed, if necessary, throughout the process. Using Atlas.ai allowed me to store my qualitative data in video, audio, or text format. I was then able to add descriptor data like demographics, Tweet transcripts or other sources of data I had collected. When I set up my code system, used Atlas.ai to understand, organize, and analyze my data. The visualization tools in Atlas.ai were invaluable in helping me find patterns in my data.

Establishing Trustworthiness

The most often used framework for establishing quality in a qualitative study is the work of Lincoln and Guba (1985). They identified four criteria for evaluating the overall trustworthiness of a qualitative study. These are credibility, dependability, confirmability, and transferability.

Credibility

Credibility is confidence in the truth of your study's findings. Lincoln and Guba (1985) state that credibility is "a check on the isomorphism between the inquirer's data and interpretations and the multiple realities in the minds of informants" (p.301). In my study, I ensured credibility in several different ways. I began with an in-depth investigation of previous research on my topic. This helped form the thick description of the phenomenon I researched for

this study that was also shared with my subjects. I conducted a case study which is a well-established research method. I also use triangulation in my data collection using surveys, interviews, and a focus group. This gave the study credibility that allowed me to capture different dimensions of the same phenomenon. Member checks were also used to establish internal validity of my findings.

Transferability

Transferability is a way to show that the findings of your research are applicable in other contexts. A well-established context for my study was established through the research that has already been done on my topic. This formed the basis for the thick descriptions of my research which will allowed for comparisons to be made. Additionally, the results of my case study suggest further questions, hypotheses, and future implications of the work.

Dependability

Dependability in research means that if the same methods and participants were repeated, identical results would be obtained. To ensure this, I have provided a thorough account of my case study methodology. By employing a methodological triangulation, I have integrated techniques like interviews, surveys, and focus groups. This overlapping use of methods has cross-validate the data.

Confirmability

As noted by Lincoln and Guba (1985), confirmability seeks to "shift the emphasis from the certifiability of the inquirer to the confirmability of the data" (p.319). To uphold this standard in my research, I ensured that both the data and my interpretations were anchored by the evidence outlined in an audit trail graphic organizer. Additionally, to mitigate the influence of personal bias, I based the interpretations strictly on the data, further reinforcing their legitimacy.

This commitment to rigor is documented through memos and a researcher journal, which details the rationale behind decisions, offer insights into researcher perspectives, and outlined the methodology employed.

Current Trends

Research into Twitter's role in professional development is blossoming. In the earlier stages, the spotlight was primarily on pre-service teachers. Many were either mandated to use Twitter as part of their course or were greatly encouraged to do so. However, as time passed, there was a noticeable shift: more studies began exploring active teachers and their engagement with social media for their professional growth. A recurring theme emerged: professional development's old paradigm of experts guiding large groups had evolved towards a constructivist approach (Carpenter et al., 2022). This field of study was diverse, with researchers diving into topics such as professional learning networks, communities, formal and informal learning, and more. While much of this research was qualitative, a few ventured into mixed-method studies. A clear thread running through these studies was the intrigue: many wanted to decipher the ways and reasons educators turned to social media for their professional enrichment.

Ethics

Navigating the realm of ethics in qualitative research, the dilemmas became unclear for me when determining their relative importance. While I recognized the significance of every facet, my primary concern had revolved around the concept of dual roles. Not from a standpoint of participation, but due to the potential conflict arising from my position as both a researcher and an art teacher who grappled with the challenge of finding a fitting professional learning community. The art educators that formed my sample might have already known me or were familiar with my educational contributions. I pondered: could my existing professional

relationships have compromised my objectivity in this study? Addressing these concerns was imperative to avoid any inclination toward confirmation. Case studies often grappled with such issues, and I was wary of introducing confirmation bias. My approach was without a hypothesis, marked by a genuine interest to unveil the findings rather than validating a preconceived notion.

Ethical Commitments

- I upheld the quality and integrity of my research.
- All participants provided informed consent.
- Participation in my research remained voluntary.
- Ensuring the well-being of participants was a priority.
- My research remained independent and impartial.

I closely adhered to ethical standards and requirements concerning human subjects in research, as outlined by Sales & Folkman (2000). This encompassed obtaining informed consent, safeguarding the privacy and confidentiality of participants, and communicating any associated risks. Informed consent was initiated with a plain language information sheet detailing the research's risks, benefits, and purpose. This sheet also described the participants' expected involvement. They had the liberty to withdraw at any point. While maintaining participant anonymity was paramount, the use of Twitter hashtags posed a challenge due to the public record of Twitter accounts. This potential breach of privacy was communicated to participants, ensuring their informed participation. All raw data, including personal participant details, was securely stored in a password-protected file as mandated by the Institutional Review Board for three years.

Having completed the Collaborative Institutional Training Initiative (CITI) program on research ethics and compliance training, I also sought permission from the Kennesaw University

Institutional Review Board (IRB) prior to the study to ensure the protection of the participants' rights and welfare.

Obstacles

When I chose a qualitative case study for my research, I was aware of the inherent challenges in the design I had selected. Case study research has faced criticism due to the belief that its findings aren't generalizable. Furthermore, it's often perceived as less rigorous compared to other research designs (Yin, 2003). Another notable challenge with case studies is their unpredictability. They delve into real-life contexts, which can bring unforeseen issues.

My most pressing concern regarding the research was my influence as a researcher (Denzin et al, 2023). The scarcity of content-specific professional development for art educators like myself directly affected me. Having previously participated in Twitter chats, I was wary of my own biases potentially skewing data collection and analysis. To counteract this bias, I adhered to trustworthiness methods: utilizing thick descriptions, triangulating data, and implementing member checks for data analysis. Having the data-providing participants review my work helped ascertain the accuracy of my interpretations. I also explored alternative explanations or interpretations that could strengthen my results and sought peer review to validate my data interpretations.

Chapter 4: Findings

Overview

This chapter describes the results and findings of this qualitative case study examining art educators' use of the #K12ArtChat Twitter chat group for professional development purposes and the impact on their teaching practice. This includes the analytical process and framework for determining and constructing meaning from the data.

The Analytical Process

The qualitative data for this study includes eight hours of recorded interviews and a focus group. Four art educators participated in the #K12ArtChat on Twitter, referred to as Keri, Tim, Matt, and Niki, between 2021 and 2022. The transcriptions from the data collection events, as well as three months of #K12ArtChat tweets, were archived as data. The ATLAS-ti software was used, and the textual data was coded by recurring content labels. An initial pass of all the data yielded 43 codes, and these were further refined by the operational definitions suggested by several ways of structuring the codes in different theme frameworks. Additional iterative rounds revealed five emerging themes in the discussion. These themes were the choice of Twitter as a platform, personal relationships and support, community participation and advocacy, professional development, and pedagogy.

Operational Definitions of Codes and Themes

The theme of the appeal of Twitter as a PD/PLC art education platform included four main ideas. These were general statements and observations regarding the appeal of social media as a professional development tool, the platform as a facilitator of collaboration, the increased support for Twitter and other social media use by senior administrators, and the advantages of Twitter in comparison to other platforms. The theme of personal relationships and support also

had four main components. These were the challenges of personal relationships on Twitter, personal support within the chat group, the chat group as a response to feelings of isolation at work, and the personal development that was sought as an artist and teacher. The theme of community participation and advocacy had four sections constituted by community participation in Twitter, the broader support community, the perceived benefits of participation and interconnection, and support for their art classes, approaches, and programs. The second to last theme was professional development, which had three separate tracks. These were PD and PLC and social media, current challenges accessing PD, and the lack of specialty-related professional development options. The final theme was pedagogy, and this related to three sections: best practices and pedagogical discussion, lesson content and planning ideas, and sharing pedagogical philosophy.

Theme 1: Twitter as a PD/PLC Art in Education Platform

The participants described the appeal of Twitter as a platform for PD/PLC in art education by describing the general appeal of social media, the appeal of Twitter for PD as art educators, Twitter as a collaborative opportunity, the increasing interest of school administration, and the specific appeal of Twitter versus other social media platforms.

The Appeal of Social Media as PD and PLC

The appeal of social media as a form of professional development and PLC, based on the responses of participants, was in part because of the convenience and easy access, but also because of the inaccessibility of PD and PLC in the work environment, and the failure to find other internal options due to teacher isolation. Matt added to his response stating that “I have requested in the past to be sent to the NAEA, the national conference, and been told there is no

funding.... Since then, I have embraced Twitter and Instagram” (Matt, personal communication, 2021).

Commentary from the participants revealed that there was another factor- access to something completely new in terms of the breadth, quality, and quantity of community engagement in art education. Twitter and other online platforms are providing something completely novel in relation to PLCs (Professional Learning Communities) but also specifically to this case study. Tim simply stated that “I like being active on social media, it really helps you sort of find much better options in terms of professional development... I get invited all the time to do these different professional development opportunities in different states” (Tim, personal communication, 2021). As Matt said, using online approaches to PD such as the chat group were engaging, and he welcomed them because they provided him with something new. He stated that “it's just kind of more refreshing to get other ideas.” (Matt, personal communication, 2021). Similarly, Tim described that, “You know one of the things I really like is just seeing what other people do around the country and around the world. (Focus group – Tim, personal communication, 2021). Niki referred not just to the incredible window on the world and variety of content, but also to the element of choice:

I like the fact that we have it [#K12ArtChat] available on Twitter, because it's a space where you can ask questions and teachers from all over the country are going to respond to you, and it has a variety of topics, so you can kind of pick and choose which topics you want to join in on, and which ones you want to respond to. (Focus group – Niki, personal communication, 2021).

A Platform for Collaboration

Twitter also helped respondents in finding suitable opportunities and partnerships for collaborations outside of the local district. This included both personal and classroom levels. Keri said, “I think it's (Twitter) a really good way to collaborate with members of the art community outside of your local district and to see what other people are doing. I feel like it is really important to have those ties to the art education community to feel like you’re part of a family like you matter.” (Keri, personal communication, 2021).

Increasing Support From Administration

Most of the respondents indicated that there was an openness on the part of school administration and supervisors to use Twitter and other social media as Niki described, sometimes it was their idea:

My art supervisor talked about Twitter for a while and it is something that I decided to do, why not, let's get on social media again, I'll have access to other art teachers, instead of waiting for that yearly art association workshop at the state level, I can talk to and communicate with educators, weekly or even daily if I wanted to. (Niki, personal communication, 2021). Even where school administration and leaders were not actively promoting the use of social media as a professional resource and tool, there were no indications of any prohibitions or issues with doing so.

Benefits For Students

The respondents agreed that the chat group, and the participation as an art educator on Twitter, had benefits for themselves, but also for their students. As described in the best practices, there was clearly excitement around the use of new and interesting classroom ideas. Keri described it this way:

There's certain things in certain conversations... some of them spark interest in other things... it kind of takes me out of my own comfort zone of what I would normally be doing, what I would normally be trying, and it makes me change, it benefits my students in that way (Focus group – Keri, personal communication, 2021)

Twitter Versus Other Platforms

Only one respondent indicated that Twitter itself was only singled out by one respondent as being his exclusive platform of choice. He found, and the appeal of Twitter was to be the chat group and community. That said, Twitter as a platform was the subject of many comments. Some related to the greater appeal of Twitter, such as Niki's comment that "Twitter is actually the only social media I use. I don't have Facebook, I don't Tik Tok. I don't Snap or Instagram like Twitter is the only one." (Focus group – Niki, personal communication, 2021). In addition, Tim made an offhand comment about the differentiation of Twitter, noting that "one of the benefits of #K12ArtChat or, you know, any kind of Twitter based sort of PD is that it's very direct because of the character limit." (Focus group – Tim, personal communication, 2021).

Theme 2: Personal Relationships and Support

The personal relationships and support that the respondents participated in as part of the chat group were clearly an important part of their experience. Half of the respondents indicated that there were challenges to forming such relationships on Twitter, but all respondents agreed that it helped to mitigate feelings of isolation as art educators at work.

Challenges of Personal Relationships on Twitter

There was a consensus among the participants that it was more challenging to form relationships and interactivity using social media. Keri noted that while "It's a quick way and it's an unassuming way to collaborate and talk," there were issues in that a person had to "be a little

bit more willing to be out of your comfort zone... I have to put myself a little bit more out there in the chat” (Focus group – Keri, personal communication, 2021). This was echoed by other members, including Tim, who said “...you need a degree of confidence and permission... even if it's just yourself giving that permission to just go on a limb and try something new and experiment.” (Focus group – Tim, personal communication, 2021).

Personal Support Within the Chat Group

There was agreement that the #K12ArtChat group provided a foundation to build personal relationships. Personal support was presented as a core function of the chat group. Niki felt that it was an informal way to access knowledge and feedback from other art educators. “We text each other all the time to support each other if we have questions or just want to see how each other is going on” (Niki, personal communication, 2021). Keri stated:

I feel drawn to do it... I participate pretty consistently, weekly. I really enjoy being part of that. Being able to see what others are doing and thinking, and I like that they change the topic every week. It kind of opens it up to new groups of people every week, so you get new perspectives. (Focus group – Keri, personal communication, 2021)

Niki saw it as a matter of a good fit, noting that “the #K12ArtChat is focusing on what I love, and what everybody else loves...” (Focus group – Niki, personal communication, 2021).

Keri referred to personal relationships and support, stating that:

I think it goes into that relationship kind of aspects, I want to be part of it, and I want to be in there and I get kind of mad at myself when I miss a day...it kind of mimics your everyday social experiences where I feel like I have really, really, really close friends and I have like, Twitter acquaintances, and then I have like random comments too, sometimes. (Keri, personal communication, 2021)

Tim described a therapeutic aspect to the group that went beyond professional development, but saw the two issues as being interconnected:

So I kind of see like the PLC and the PD stuff, you know, tied together with the pedagogy and the sort of all the more, for lack of a better word, social, emotional, which you know I think there's one of the things that are really important about this is that there's a lot of frustration as an art teacher at times, and you know that will lead to negativity, if it's not dealt with, but like you know, then you occasionally will share. (Focus group – Tim, personal communication, 2021)

Niki's comments were similar in relation to the provision of support and learning:

It's like a safe place where if you have a question, you can ask it, and somebody were there to help you. So, I do. I mean, get it, it's just that feeling of having a support system, and somewhere where you can learn from other people that have been there, done that. (Niki, personal communication, 2021)

Kerri found that there was a novel component to the art chat group and the personal relationships, stating that:

It's the only professional development, I think that I've done where I'll get mad at myself for missing, which is an interesting thing and I don't know if it's because I like the people on it the most or because they like the connection in it the most, but I think that everything kind of comes together in this nice package and it makes me feel good about being an art teacher. (Focus group – Keri, personal communication, 2021)

A Response to Feelings of Isolation at Work

Another common thread among responses was a feeling of isolation in the work environment. The origin story of the #K12ArtChat, Tim describes that it was a form of loneliness that led him to find the group: “When I began with #K12ArtChat. I certainly felt sort of alone at

my school. ...teachers don't always get along in their departments or like the art teacher that I work with here, we don't really talk” (Focus group – Tim, personal communication, 2021). Keri added similar sentiments, saying that “It's really easy to be a one-man island in your own school, it gets lonely, people burn out a lot easier. But when you're reaching out to other people, you have a security blanket that you're not alone” (Keri, personal communication, 2021).

These art teachers tended to feel that their profession was one that tended towards isolation in the school environment. Niki described that “Usually most art teachers work by themselves in the building, so it's nice when you have somewhere to go for communication purposes and just you know so you don't feel like you're alone all the time.” (Niki, personal communication, 2021). Tim had a similar point, stating that “I think it's important for our teachers specially to collaborate and to connect, because, you know, they tend to be smaller departments in schools.” (Focus group – Tim, personal communication, 2021). Niki indicated that this was also true for her, saying “I don't work with any other art teachers in my building, so I like to see what other people are doing everywhere else...” (Focus group – Niki, personal communication, 2021). The isolation factor appeared to be a strong motivator to participate in the chat group and other Twitter communities.

Personal Connection Facilitating Professional Development

Tim and others focused on the personal connection as a facilitator of professional development, particularly because there is trust among group members as well as a ready source of feedback. Tim said:

There's certain times when I want to try something or experiment with that idea and I feel comfortable... reaching out to the people I know from the #K12ArtChat and kind of saying... What do you think of this idea? Do you have any input? I'm always confident that people will

write back and kind of give me ideas, so it's a major part of it...you can't be a good artist if you're just, if you're not pushing yourself so I think that's, you know, that certainly comes into play in this kind of thing. (Focus group – Tim, personal communication, 2021)

Theme 3: Community Participation on Twitter

Community participation was mentioned repeatedly by respondents in the context of interactions and events which had led from the chat group. The creation of the group, and spinoff effects of connection to other art teachers and areas of the education subject Twitter ecosystem, led to a new capacity, to participate in the community using the Twitter platform. The respondents in the chat group appreciated the Twitter community of art educators and supporters, describing many interconnections between the two group levels. They also described how being an art educator on Twitter resulted in being part of a supportive community that extended beyond the chat group. This support network helped them in both sustaining their art programs and actively participating in the art education community. The benefits include crowdsourcing ideas and solutions, but also participation, supporting, and being supported by other art educators.

The Broader Support Community

Tim described the supportive environment in this way:

As an educator, I've seen people ask for help and have a bunch of people... as teachers we are willing to help each other, and all you need to do is ask... something simple like you know I want to purchase... a laser cutter or something like that, you know I put out something and then you know five different people share what laser cutter they get and what kind of projects they do with it and you know how much they like it or dislike it. (Focus group – Tim, personal communication, 2021)

Respondents also reported having a chance to be more involved in art education at a broader level. Niki explained that:

...teachers from other states, when they had a fundraiser happening, someone was creating a calendar trying to support their program and advocate for their program. So, I purchased a calendar from an art teacher in Kentucky. And my buddy, they sent me their product and I was able to help with their programs. (Niki, personal communication, 2021)

Benefits of Participation and Interconnection

The group felt there was a great benefit to participation in the broader community. Both Niki and Tim described the community, both on the chat group and Twitter, as having a positive impact: “I think it's just about having a community behind me even if you don't see the people every day you get to see what they're doing” (Focus group – Niki, personal communication, 2021). Tim described it as an imperative, noting that “... it was really important to just connect to other people and feel like you know you're part of a community... it really did connect me to other people and gave me the confidence to try things that I wouldn't.” (Focus group – Tim, personal communication, 2021). There was a positive interconnection not only between the chat group and the broader Twitter community, but also in terms of live events. Niki explained that as a result of participating in the Twitter community, she was also more connected to the community of live people she encountered at conferences and events:

...at the state level, now that there is social media, people remember you or know your profile or this idea. It is a lot of different teachers every year that go to the events, and it is a lot of the same teachers that presented with you... it is kind of like a little community in itself and you get to see them all the time. (Niki, personal communication, 2021).

In addition to feeling more a part of the community, Tim felt that participants become more confident and as individuals:

And it was something that built over time so that like, you know, after a number of years I have, you know, a great deal more confidence and you have this... creative community, which is really helpful and you know, especially at like you know NAEA conferences and things like that. It is nice being able to suddenly recognize all the people. I remember my first art conference. I knew two people, you know, and now I go, and I know like 200.

(Focus group – Tim, personal communication, 2021)

Supporting and Support for Their Art Programs

Each of the respondents saw the Twitter platform as a way of creating awareness and promotion of their art education programs. As Keri (2021) reported, “So, Twitter kind of gives you a way to celebrate what you're doing”. Tim noted that “There's power in numbers” (Tim, personal communication, 2021).

They further reported that the chat group had value in facilitating the practice. Advocacy for their own students, classes, and programs provided a key strategy reported by respondents. Matt indicated that “I am an advocate big on my classroom and my kids and, and just putting that out there, but just trying to use that as leverage” (Matt, personal communication, 2021). Keri similarly felt that it was important to promote her students and their learning, saying that “You know some people have said bragging but if you're not, I don't know, like it's okay to brag on your students it's okay to brag on their successes.” (Focus group – Keri, personal communication, 2021). All was not, however, positive.

Respondents went on to describe some of the reasons why they needed to advocate for and promote their programs. A theme was the fear or belief that the art program received little

respect or importance within their schools and districts. Keri described that having a supportive community on Twitter through the chat group and more broadly helped to mitigate the situation of many art schools, especially “in schools where your admin might not be as supportive you kind of get in your room and those are your four walls, and you don't really get out of them.” (Focus group – Keri, personal communication, 2021). Tim described how the Twitter followers interested in his program provided a layer of protection as well as leveraging support from administration:

I would argue that my Twitter account is my best way of advocating for my program... because my superintendent, so many of the parents of the community, follow me....

#K12ArtChat there's times that like I'll answer a question, and then people the next day or retweeting the answer... my superintendents are like you know what? He's agreeing with, you know what I'm saying about my students, and you know their student artwork has examples on those tweets ... By him retweeting some of those things like it's bringing it out to the entire school community. (Focus group – Tim, personal communication, 2021)

Matt agreed, explaining that:

I get a lot of support from that [#K12ArtChat] and I do other chats too. And I get a lot of support from other schools, other school districts, people in different states, different countries. Without that, I mean, my voice only goes so far here. (Matt, personal communication, 2021)

Theme 4: Professional Development and Learning Communities

The participants described an eagerness to engage in professional development (PD) and professional learning community (PLC) activities, with conferences being an often-mentioned goal. As Niki described, “I really enjoy those conferences and getting to work with people in my

content area... just the sharing of ideas and dealing with people that are in the same situation and do the same thing as you every day." (Niki, personal communication, 2021).

Current Challenges Accessing PD

It was acknowledged that there were many challenges concerning professional development as an art educator. A lack of opportunities was reported, especially those related to the art education specialty. This, alongside a lack of funding and the perception of art as secondary, resulted in limited capacities to develop specifically as art educators. Due to this lack of professional development opportunities, many art educators have turned to social media. As Keri explained, while “we have an approach to education where we need to... teach to the needs of the students, but we are not doing that with the staff members” (Keri, personal communication, 2021).

Another issue was that professional development tended to focus on areas that had little perceived relevance to the art classroom. For example, Keri indicated that she was often offered training in Microsoft products, but “I wouldn't use a lot of it in my classroom... we don't have a lot of technology for the students to use ... for the most part, it doesn't line up to what I need.” (Keri, personal communication, 2021). Niki had a similar concern, stating that “I've been at my local school for five years and the only training I have received was in... Microsoft programs like PowerPoint, and how to communicate using Office 365... it wasn't tailored to my subject area... I don't have technology in my classroom... really not something we can do in the art room” (Niki, personal communication, 2021).

No Specialty-Related Professional Development

A general perception was that when professional development was offered in the work context, it was tied to teaching generally or technology in education, with few opportunities for

the art educator to further their personal development concerning fine arts and as a teacher of the arts. This was evident in Matt's statement that "Professional development here is tied around basic teaching strategies... Nothing, definitely nothing, to do with visual art" (Matt, personal communication, 2021). Keri stated that "There hasn't been any training for me individually as an art teacher at my school" (Keri, personal communication, 2021). Matt saw this as indicative of art programs in school as an afterthought or extra, stating wistfully that "...everything gets lost in the shuffle for the arts, so much gets lost in the shuffle ... So, that is very frustrating" (Matt, personal communication, 2021).

While some of the respondents did have opportunities for art education-related professional development, they acknowledged that this was not the norm. Keri, for example, reported that she felt supported at the district level by the visual arts supervisor, stating that "I'm able to go to the national conferences... Not everyone can do that." (Keri, personal communication, 2021). Keri felt that she had a comparative advantage, concerning many teachers, in part due to her professional network strategy which went beyond her school and district:

"I'm on the board for the Georgia Art Education Association. So, I do a lot with them. ... I like a lot of digital conferences, and I present at the art of education conferences and the Georgia Art Education Association conferences" (Keri, personal communication, 2021).

There is a growing potential opportunity for professional development outside of the traditional conference and workshop events sponsored by the district or school board. As described by Matt and Niki, online sources of professional development were another strategy, and she was provided with access to these opportunities through a county-level program. Again, the convenience factor was primary. Niki explained that "it allows me on my own time to look

through workshops, take online classes, and earn certificates and ideas for my subjects specifically” (Niki, personal communication, 2021). Online professional development tools are also provided for respondents to contribute to the knowledge base through webinars and other self-help projects. Tim said that:

I have a bunch of webinars I recently just did for ISTE. That was open to anyone. I usually tweet that kind of thing out. And I did one for NAEA recently as well so sometimes they're open to everyone so the ISTE one was nice because anyone can take it. I share this information on #K12ArtChat and people attend because you're always kind of hungry for good professional development (Tim, personal communication, 2021).

Convergence

There was a convergence of themes in terms of the Twitter platform and chat group, community participation, personal relationships, PD and PLD, and pedagogical development. This concerned how the personal and social factors facilitated the development and learning opportunity, and how this reflected the same learning theories that were used in the classroom:

The relationships were the driving factor and then the sort of learning came after that, I would argue that the same thing is true with classrooms right because it's like when you build a relationship with students, then you actually get to the learning, oftentimes, some students are going to offer resistance and like you need to you need to build a relationship before you get to learning, I would say looking at this, that relationship, inspiration, and self-efficacy, are sort of all related, like you know what I mean like that seems to me like, all of those three things are related and then certainly the pedagogy and the CPD so is related so like you know there's, I think the relationships kind of come first” (Focus group – Tim, personal communication, 2021).

This is similar to the findings of the thematic analysis, in that interconnections between the personal, social, and professional communities created expanded access to professional development and community participation, including opportunities for exposure to innovative ideas and pedagogy, better recognition of other art educators, and a greater level of support from a now more close-knit community.

Theme 5: Pedagogy

An important purpose of professional development for educators is improving pedagogical knowledge and teaching strategies. Considerable effort and expense often go towards the initial training in this area, followed by learning that continues for one's entire career, at least ideally. Participants viewed Twitter as a tool to enhance their teaching methods. The respondents described how best practices and pedagogical discussions came naturally as a part of the group chat. They benefitted from the lesson planning and ideas that were shared within the chat. Additionally, one respondent expressed how she hoped she had influenced the minds of her chat group peers with her teaching approach and philosophy.

Best Practices and Pedagogical Discussion

A variety of best practices as well as pedagogical issues were discussed as part of the chat group, providing opportunities to be exposed to, participate in, and learn about professional aspects relating to the education discipline. Niki's summary of content and discussion topics in the #K12ArtChat included "what's happening in our schools, how to plan vertically, create lesson plans, etc. so they kind of pick different topics to discuss every week." (Niki, personal communication, 2021). Keri found that:

I like being able to see what others are doing and thinking, and I like that they change the topic every week. It kind of opens it up to new groups of people every week, so you get new perspectives. (Keri, personal communication, 2021).

Tim indicated that for him, the subject matter of the discussion went beyond what he had been exposed to previously. He stated that:

...before our chat there were lots of things that were considered important in education that I wasn't that aware of. And just by proxy was sort of even just lurking. I think you get an idea of some of these, you know what the important trends in education are... it does keep you informed. (Focus group – Tim, personal communication, 2021)

This is a function similar to that provided by, for example, conferences and workshops. Niki described that the group would discuss pedagogy both within the chat, and using video and email, indicating that they would talk about:

...what's working or not working, and then we'll talk through emails... will share like this lesson plan worked really well. I'm doing this sketchbook part with my students this week. Why don't you try this? Then on Teams, we meet, usually at least once a month, if not more, then we share ideas and the same thing..." (Niki, personal communication, 2021)

Lesson Content and Planning Ideas

Lesson content and planning ideas provided for lively discussion and response from all the participants. "In the past I'm always looking for different things to try there [#K12ArtChat], but really everything helps you... if you have someone out there to communicate with" (Niki, personal communication, 2021). Niki noted that she felt this gave her more positive ideas and teaching opportunities in the classroom, describing that "The #K12ArtChat provides me access to other teachers... different ways of using media, classroom management...you can hop on and

work with teachers around the world, it's not just specific to my school district." (Niki, personal communication, 2021).

The participants wanted to share many specific instances where they adopted content from the chat in the classroom. Niki (2021) indicated that "I have played with the site [Twitter] for planning purposes so I have actually used a lesson plan for portraits actually with my seventh and eighth graders that I took, directly from the #K12ArtChat". Tim (2021) described ideas that came from the group chat, noting that:

I brought lots of the stuff I've seen on the chat to the classroom, like... 3D printing... I had no idea how to do it and I was curious... thanks to the chat...they mentioned 3D printing apps that worked well with art... (that) they use regularly (Tim, personal communication, 2021)

Participants also enjoyed putting their own ideas out in the community and supporting others to try their best practices. Matt said that "I try to tweet out a lot of like self-help videos ... a lot of people don't know how to use a clay processor, so I tweet out... a five-part series... I got a lot of feedback on that." (Matt, personal communication, 2021).

Sharing Pedagogical Philosophy

One respondent in particular saw the group and Twitter generally as a way to share their focus on, and appreciation for TAB (teaching artistic behavior). First, Keri described how the group had helped her to expand her use of artistic approaches:

I've been more TAB oriented, not 100% teaching artistic behaviors within the classroom, I still do some discipline-based stuff. But I've been more choice oriented with my students. And I really do think that has come directly from the #K12ArtChat. Because I've been able to see what other people are doing in the classroom, what works, and what doesn't work. (Keri, personal communication, 2021)

Keri also helped to identify what the TAB teaching philosophy was, clarifying that it provided students with teaching moments where they were able to make their own choices based on artistic and creative sensibilities, rather than following the set curriculum. Keri said that “I have been offering students more opportunities to choose the parameters within their own projects within their own lessons, choosing the materials they want to use, and which direction they want to take something in” (Keri, personal communication, 2021). Keri felt strongly about the potential of the TAB teaching strategy, noting that “I feel like more expressive students, who have more choices, can become more confident within the classroom. So, I feel from my perspective, that I am seeing children flourish in ways they haven't really flourished before...” (Keri, personal communication, 2021). In addition to the benefits for her students, she hoped that exposure to the TAB strategy had been of interest to others in the group and on Twitter, stating “it actually might open up more teachers to this TAB learning style, which could be quite interesting” (Keri, personal communication, 2021).

Summary

Twitter has appeared to earn a position as a critical tool for PD/PLC for these art educators. There is a great appeal of social media as a PD and PLC opportunity given the lack of other options and the novel capacity for a window on many other art educators and their classrooms. Further, Twitter provides ways to increase potential collaborative partnerships and possibilities. There is a new interest in social media, including Twitter, by school authorities and leaders, and this has also helped to facilitate participation, which is often explicitly encouraged. Benefits for the student were perceived to be related to the professional development and pedagogical support received by art educators. Twitter was discussed versus other platforms, although not all respondents had a strong preference. The personal relationships and support

theme described that before achieving the benefits of the chat group and the wider participation in the art education community, there was a need to grow more confident as an art educator on Twitter. The personal support in the chat group helped to provide that growth, and it was a contrast to the feelings of isolation that were experienced by art educators at work. That personal connection also appeared to be facilitating professional connection and development. The pedagogy theme included opportunities to learn about the best practices of others, ideas for lesson planning and content, artistic techniques, and for one respondent the potential to share pedagogical philosophy. The community participation theme included findings that respondents perceived a great benefit to being part of the Twitter community, and that there appeared to be an interrelationship between that participation and the art chat group function and benefits for all engaged. Further, respondents appreciated the broader support community, including opportunities to support others as well as promoting their programs and classrooms. Professional development and learning communities were a theme for the respondents, to the extent that they had poor access at work to these resources. Furthermore, where it was offered it was not usually relevant to their specialty. Online strategies, in this context, made a lot of sense to each of the respondents. The convergence of each of these points was made explicit by the site's founder, Tim, as one where the personal aspects led to greater awareness and capacity to participate in professional and personal development on other levels.

Chapter 5: Discussion and Implications of Findings

In this chapter, the focus shifts towards a comprehensive analysis of the findings, which have emerged from an in-depth exploration of the research questions. Traditional professional learning experiences, the bedrock of educators' ongoing development, have undergone a profound transformation in the context of K-12 art education. The main emphasis of professional development (PD) frequently centers on enhancing teaching techniques and deepening subject-specific expertise. However, it is equally vital to acknowledge the unique learning requirements of educators themselves (Fullan, 2015). Historically, workshops and conferences have dominated the educational landscape. However, participants in this study have suggested several challenges associated with these conventional platforms. Prominent among these challenges are limited time availability, financial factors, and a noticeable disparity between the content provided and its direct application in the classroom environment, particularly for art educators. These observations from these participants have emphasized a clear gap in addressing the specific professional requirements of art educators, who often lack subject-specific content in their professional development.

Benefits of Online Professional Development

Research indicates that PD programs exceeding 15 hours show more significant positive impacts. Online PD, with its inherent flexibility, allows for these extended durations without overwhelming educators, fostering a sense of self-efficacy and confidence in implementing new teaching strategies (Wong et al., 2023).

The findings of this study shed light on the dynamic role played by Twitter chats as an alternative avenue for professional development. Uniquely defined by their real-time interaction, scalability, and adaptability, Twitter chats have brought about a significant shift in how

educators in this study pursue continuous growth. This change inherently acknowledges the importance of personalized and customized learning paths, reflecting a broader transformation in the field. This evolution also aligns with modern pedagogical aims, exemplified by resources like the Georgia Department of Education (2020), which are thoughtfully crafted to empower educators in shaping their professional growth to match their unique classroom environments (Darling-Hammond et al., 2022).

The value of social media outlets, such as Twitter, in fostering professional growth among educators has been highlighted in recent studies conducted by Carpenter and Krutka (2015) and Visser et al. (2014). These digital platforms provide educators with the opportunity to engage in real-time discussions, share educational resources, and collaborate with peers from diverse geographical locations.

Twitter as a Professional Learning Network

The utilization of Twitter chats by K-12 art educators in this study for building a professional learning network underscores the transformative impact of online platforms on fostering collaboration and knowledge exchange. Through sharing resources, discussing pedagogical strategies, and engaging in reflective conversations, these participants harnessed the potential of Twitter chats to expand their learning community beyond geographic boundaries. This finding resonates with research by Kumpulainen and Sefton-Green (2014), who emphasized the role of online communities in promoting collaborative learning among educators. Furthermore, the study conducted by Trust et al. (2016) revealed that educators who engage in active participation in Twitter conversations frequently see notable improvements in their professional development and an expanded professional network. Twitter chats offer a dynamic

platform that empowers art educators in this study to access diverse perspectives and resources, enriching their teaching practices.

Educator Self-Efficacy

The findings in this study shed light on a significant boost in educator self-efficacy, among these participants. This rise in self-efficacy signifies the platform's role in bolstering educators' confidence in their teaching prowess. Bandura's self-efficacy theory (1977a) aligns seamlessly with the findings from this study, underlining the close link between augmented self-assurance and effective professional development. The positive influence of online professional learning networks on educators' self-efficacy has been emphasized in recent research, as exemplified by Carpenter and Harvey's (2019) study.

Taking Bandura's theory into account, the findings from this study underscore the pivotal role that self-efficacy plays in shaping instructional practices, thereby influencing student outcomes. The observed surge in self-confidence among these participants resonates with prior research indicating that self-efficacy profoundly impacts teacher growth and ultimately benefits student performance (Tschannen-Moran & Hoy, 2007; Yada et al, 2022). This discovery accentuates the importance of well-directed interventions aimed at nurturing educators' self-efficacy, which in turn can positively elevate the quality of teaching and learning, especially within the realm of art education.

The positive correlation between active participation in Twitter chats and heightened self-efficacy underscores the potential of online professional development to act as a robust tool for fortifying educators' confidence. By actively engaging with a diverse peer community, art educators can exchange valuable insights, celebrate accomplishments, and learn from shared challenges, collectively contributing to a growing sense of competence. As educators seek ways

to refine their instructional methods, the role of Twitter_Chats in this study cultivating self-efficacy becomes more pronounced as a promising avenue for facilitating impactful professional growth.

Pedagogy

The findings underscore the potential of Twitter chats to catalyze instructional innovation among participating art educators. This discovery accentuates the role of effective professional development in inspiring educators to experiment with novel teaching techniques (Fullan, 2015). Notably, the collaborative essence of Twitter chats serves as a conduit for the exchange of creative teaching ideas and strategies, resonating with prior research emphasizing the positive impact of collaborative learning experiences (Vescio et al., 2008). Additionally, Luo et al. (2017) found that educators who engage in online professional learning communities, such as Twitter chats, often report increased pedagogical knowledge and a willingness to experiment with innovative teaching strategies. This pedagogical shift illuminated in the findings of this study reflects the capacity of Twitter chats to serve as a motivating force, empowering educators to explore inventive methods that amplify student engagement and elevate achievement levels.

Furthermore, the transformative power of Twitter chats in nurturing instructional growth is especially pronounced in the context of art education. The discovery of new pedagogical strategies among these participants suggests that the platform engenders a renewed enthusiasm for pedagogical exploration. As art educators encounter a myriad of challenges unique to their field, the collaborative nature of Twitter chats provides a responsive environment to discuss and address these challenges collectively. This aspect reinforces the significance of targeted professional development in igniting innovative pedagogical approaches, which, in turn, can foster enriched learning experiences for art students.

The implications of this theme extend beyond individual classrooms. By fostering inventive teaching techniques, Twitter chats can contribute to the broader enhancement of art education practices. The alignment of these findings from this study with Fullan's (2007) notion of professional development as a catalyst for instructional change underscores the transformative impact of tailored online platforms. In the realm of art education, these findings serve as a testament to the platform's capacity to propel pedagogical innovation forward and ultimately elevate student learning outcomes.

Relationships

The theme of relationships underscores the paramount significance of networking and connectivity in nurturing educators' professional growth. The establishment of meaningful connections through Twitter chats contributes to a collaborative milieu that not only fosters a sense of community but also enriches the collective knowledge of participants. This revelation aligns with the fundamental concept of professional learning communities, which places emphasis on the pivotal role of collaborative environments in propelling educators' growth (DuFour, 2004). It is worth noting that the dynamic and diverse nature of Twitter chats extends the boundaries of educators' connections, enabling them to interact with peers beyond their immediate school context. This expansive reach facilitates the exchange of insights, experiences, and best practices, elevating the quality of professional discourse and learning.

Furthermore, the collaborative exchanges fostered by Twitter chats reflect the essence of social constructivist learning theories. Vygotsky's (1978) Zone of Proximal Development posits that learning is enhanced when individuals engage in collective activities that challenge their cognitive boundaries. The platform's interactive nature embodies this principle, enabling educators to collaboratively navigate challenges and innovations in their pedagogical practice.

Recent research, by Britt and Paulus (2016), has also highlighted the role of online communities in fostering social constructivist learning experiences. The findings of this study suggest that Twitter chats serve as modern-day platforms for social constructivist learning, leveraging digital connectivity to transcend geographic and institutional barriers, thus nurturing a robust professional network.

The ability of Twitter chats to foster relationships takes on particular significance in the context of art education. Often, art educators encounter professional isolation due to the specialized nature of their subject area. Twitter chats effectively bridge this isolation by providing a virtual space where educators can connect, share, and support one another. This aspect reinforces the role of social networks in professional development, echoing research that emphasizes the role of relationships in enhancing instructional practices and promoting job satisfaction (Little, 1993; Tschannen-Moran & Woolfolk Hoy, 2007). The findings of this study suggest that Twitter chats play a vital role in addressing the unique challenges faced by art educators, offering a sense of camaraderie and empowerment that is crucial in overcoming feelings of professional isolation.

In conclusion, the theme of relationships magnifies the potency of networking and collaborative learning through Twitter chats in driving educators' professional growth. By extending the boundaries of connections, these online platforms empower educators to engage in collective activities that foster a sense of community and enhance their pedagogical knowledge. In the realm of art education, the implications of this theme are particularly notable, as it provides a remedy for professional isolation and cultivates a supportive environment for growth. The resonance of these findings with social constructivist learning theories further validates the

transformative power of Twitter chats in expanding educators' horizons, both pedagogically and socially.

Research Question One

Do some K-12 art educators use Twitter chats to foster online professional learning? If so, why?

The initial research query addressed in this study investigates whether Twitter chats serve as a means for K-12 art educators to cultivate online professional learning and, if so, the reasons motivating their engagement. The contextual framework underpinning this research question explores the evolving landscape of professional development in the realm of K-12 art education. Traditional avenues, such as workshops and conferences, are constrained by various challenges, including scheduling conflicts, financial constraints, and a potential mismatch between content and practical applicability. This backdrop creates a discernible void in addressing the nuanced professional needs of educators.

Recent studies, such as those by Carpenter and Krutka (2015) as well as Visser et al. (2014), have emphasized the growing significance of social media platforms, including Twitter, in facilitating educators' professional development. These platforms offer opportunities for educators to participate in live discussions, share resources, and collaborate with peers spanning diverse geographical locations (Carpenter & Krutka, 2015; Visser et al., 2014). Recent research has shown that systematic interventions on platforms like Twitter can enhance pre-service teachers' perceptions of the educational potential of social media for professional development (López-Torres et al., 2022). These digital conversations, characterized by real-time interaction, scalability, and adaptability, have ushered in a paradigm shift in educators' pursuit of continuous growth. This transformation underscores the importance of tailored, personalized learning

pathways, aligning with the contemporary pedagogical aspirations exemplified by resources like the Georgia Department of Education (2020). These resources empower educators to tailor their professional growth, aligning with their unique classroom contexts.

The study's participants underscored the relevance of self-efficacy and relationships in their utilization of Twitter chats for online professional learning. The newfound self-efficacy reported among participants suggests that Twitter chats contribute to bolstering educators' confidence in their teaching prowess. Bandura's self-efficacy theory resonates with these findings, as heightened self-assurance is intrinsically linked with professional development and instructional practices. The study establishes a connection between cultivating educators' self-efficacy and targeted interventions, reinforcing existing research indicating self-efficacy's pivotal role in enhancing teaching practices and student outcomes.

Moreover, the theme of relationships emerged as a cornerstone in educators' professional growth facilitated by Twitter chats. Meaningful connections forged through these digital conversations foster collaboration, cultivate a sense of community, and enhance participants' collective knowledge. The study aligns with the concept of professional learning communities, emphasizing the role of collaborative environments in nurturing educators' growth. The dynamic nature of Twitter chats enables educators to connect beyond their immediate school contexts, promoting the exchange of insights and experiences, albeit within the digital sphere.

In conclusion, the findings illuminate the ways in which Twitter chats have transformed professional learning for K-12 art educators. By providing an alternative to traditional avenues, fostering self-efficacy, and nurturing relationships, Twitter chats have become a catalyst for shaping online professional development that aligns with educators' specific needs and aspirations.

Research Question Two

How do these K-12 art educators use Twitter chats for online professional learning?

Exploring how K-12 art educators use Twitter chats for online professional learning reveals a variety of strategies and approaches that come together harmoniously. As the study went on, it became clear that educators are discovering ways to adapt Twitter chats to suit their own teaching environments. The platform itself is designed to be interactive and responsive, providing an exciting avenue for teachers to gather and exchange knowledge. Their personal stories, filled with authenticity, truly shine a light on the various and creative ways educators are leveraging Twitter chats to meet their unique professional learning needs. This is further emphasized by the fact that each weekly Twitter Chat revolves around a specific topic, giving participants a heads-up on what is coming, and often featuring guest presenters who bring their own expertise to the table.

Among the revelations, the data showcase educators harnessing Twitter chats as a versatile medium for resource exchange, illuminating best practices, and forging new avenues of thought. The asynchronous nature of Twitter chats provides a flexible space for educators to engage in collaborative discourse, irrespective of geographic constraints. Furthermore, these discussions extend beyond mere information dissemination, fostering mutual empowerment and transformation. The diverse approaches, both synchronous and asynchronous, mirror the distinctive preferences of educators in tapping into the potential of Twitter chats for online professional learning.

The stories shared by the study participants really highlight how there's been a shared move towards a different way of learning, something that goes beyond the usual boundaries. Instead of just simple conversations, educators are using Twitter chats to dive into meaningful

discussions and unravel intricate teaching challenges. The evidence highlights their engagement in intellectual adventures, delving into deeper aspects of pedagogy. Through Twitter chats, they are creating personalized learning paths, and the fact that it's a shared experience adds a sense of community to it all. This change in how they learn fits in perfectly with modern education trends that stress independent learning, teamwork, and always striving for improvement.

Research Question Three

Does participation in Twitter chats impact art educators teaching practice? If so, how?

Investigating this question shows a detailed story that helps us understand how art teachers using Twitter chats can lead to changes in how they teach. The data highlights a distinctive pattern, indicating that while the direct correlation between Twitter chat participation and substantial changes in teaching practices might not be as pronounced, the influence on educators' pedagogical reflections and adaptations is unmistakable (Carpenter & Krutka, 2014).

Participants' accounts underscore the transformative power of shared ideas, showcasing how discussions within Twitter chats prompt art educators to contemplate and reconsider their existing pedagogical methods. The process of engaging in meaningful interactions often serves as a catalyst for educators to question their instructional choices, leading to subtle shifts in their approach to teaching (Desimone, 2009; Trust, 2012).

Additionally, educators describe instances where the collaborative nature of Twitter chats sparks a sense of curiosity, leading them to experiment with new teaching strategies or integrate creative elements into their lessons. While the immediate changes in practice might not be revolutionary, the cumulative impact of these small adjustments contributes to a gradual evolution in their teaching methods over time (Ebner et al., 2010).

The data also indicates that Twitter chats act as a platform for educators to explore diverse viewpoints and engage in critical self-reflection. Educators recognize the value of considering alternative perspectives and incorporating fresh ideas into their teaching practices, even if the changes are more subtle, and are seen more slowly.

In summary, while the study may not have found a direct and immediate correlation between participation in Twitter chats and dramatic changes in art educators' teaching practices, the data unequivocally demonstrates the influence of these digital interactions on stimulating reflective thought and encouraging gradual adaptations in pedagogical approaches for these participants. Twitter chats can be a catalyst for educators to engage in ongoing dialogue, contemplate their instructional choices, and iteratively refine their teaching methods in response to shared insights and perspectives (Homewood, 2022; Lybarger, 2021).

Limitations of the Study

While this study has provided valuable insights into the realm of K-12 art educators' engagement in Twitter chats, it is important to acknowledge the boundaries that shape our understanding. The research's qualitative nature implies that the findings pertain directly to the participants and the specific context of the study and may not have broad applicability across all educational settings. One notable limitation is the size of our research sample. Although we carefully selected a diverse group of K-12 art educators to participate, the sample size was relatively small. This may impact how much our findings can be generalized to more educators (Snyder, 2019). Additionally, the nature of self-selection among participants could introduce some bias into the study. Those who chose to participate may have had pre-existing interests or experiences related to Twitter chats, potentially skewing the results (Desimone, 2009).

Another constraint that we must consider is the timing of the study. The COVID-19 pandemic, with its accompanying disruptions to education and daily life, had an unforeseen influence on the research process. The sudden shift to remote learning and the subsequent time constraints imposed on educators may have affected their ability to fully engage in the study. The pandemic also brought the tragic loss of one of our participants, who passed away before the study could be completed. This unfortunate event further underscores the challenges and unpredictability that can arise when conducting research during extraordinary circumstances.

Lastly, the reliance on self-report data is another limitation to consider. While participants' perspectives are invaluable, they might not always accurately represent their actual behaviors or experiences. The potential for social desirability bias, where participants may present themselves in a favorable light, could impact the validity of our findings (Hooker, 2008).

In summary, while this study provides meaningful insights into K-12 art educators' use of Twitter chats, we must be mindful of its limitations. The small sample size, the effects of the pandemic, self-selection biases, and the reliance on self-report data all contribute to the generalizability of this research. These considerations underscore the need for cautious interpretation and the potential for future studies to further explore these aspects.

The study's constraints notwithstanding, the findings resonate strongly with practical implications for the field of art education. Educational institutions have a promising avenue in integrating Twitter chats into their professional development initiatives, acknowledging the platform's potential to address the evolving demands of educators. Art educators, in particular, can use Twitter chats to cultivate and nurture professional learning networks, fostering collaboration and knowledge exchange. This underscores the significance of adapting

professional development strategies to accommodate educators' unique needs (Dempsey & Mestry, 2023).

Implications for Practice

Despite the limitations of the study the results have implications, for art education. Educational institutions have an opportunity to incorporate Twitter chats into their development programs recognizing how this platform can meet the changing needs of isolated art educators. Art teachers can utilize Twitter chats to cultivate networks, for learning promoting collaboration and sharing knowledge. This highlights the importance of adjusting development approaches to cater to the needs of educators (Georgia Department of Education, 2020).

A meaningful change is needed in how educators approach their professional development. While professional learning networks and communities are often praised for their innovation, a practical suggestion for the future is for educators and educational decision-makers to prioritize Twitter as a primary platform for professional growth. To put it simply, schools could start their presence on Twitter, allowing educators to connect with a wider network beyond their local surroundings.

In comparison to other methods like webinars, Twitter's user-friendly accessibility and adaptability offer distinct advantages for educators from various backgrounds to engage effectively. Just as we evaluate the effectiveness of other professional learning methods, assessing the impact of Twitter experiences can help us accurately understand its influence on educators' growth and practices. This step aligns with the goal of enhancing professional development to benefit both educators and the students they teach.

While the study's primary focus was not solely on teacher isolation, insights suggest that addressing this issue is paramount. Conversations with research participants indicate the

presence of teacher isolation in educational contexts, which is often overlooked. School administrators, teacher leaders, and colleagues must confront this issue to prevent negative repercussions. Although Twitter serves as a virtual platform mitigating feelings of isolation, it unintentionally hampers local collaborative experiences.

Implications for Future Research

The realm of online professional learning via Twitter presents a novel arena for research. Future inquiries can delve deeper into educators' experiences with Twitter, following a similar methodological approach as in this study. Despite its increasing adoption, there remains a substantial segment of educators yet to embrace Twitter as a professional learning network. Additional research could bolster the endorsement of Twitter as an effective tool for professional growth.

Examining how educators use Twitter for professional learning reveals a unique community. Understanding their habits, experiences, and characteristics can help us use Twitter more effectively. Further research could investigate how the online world affects teacher isolation, especially in pre-professional stages. Starting early with a professional learning network might set the stage for strong support systems and personalized learning (Carpenter & Krutka, 2015).

Another research avenue is evaluating the efficacy of Twitter as a professional learning network. This exploration involves delving into the impact of Twitter on educators' practices and even its potential influence on student achievement. By employing specialized evaluative tools, participants could engage in a process of self-assessment, allowing them to critically reflect on their experiences with Twitter-based professional learning.

This investigation offers the chance to compare Twitter with traditional learning methods and delves deeper into understanding how educators perceive each approach's effectiveness. It allows educators to provide insights into the unique benefits they derive from Twitter as a platform for ongoing learning and development. The collected data could provide valuable information about whether Twitter's dynamic, real-time interactions truly translate into meaningful changes in instructional practices.

Extending this research could potentially involve exploring the correlations between educators' engagement in Twitter chats and their students' outcomes. This could encompass various aspects such as increased student engagement, improved academic performance, and even enhanced classroom dynamics. Such insights could offer a more comprehensive picture of the holistic impact of using Twitter as a professional learning network.

By expanding this line of inquiry, the educational community can gain a better grasp of the role Twitter plays in professional growth and educational outcomes. This research not only opens avenues for improving professional development strategies but also aligns with the broader goals of enhancing teaching practices and ultimately benefiting students.

In conclusion, this study contributes to the realm of art education by shining a light on how Twitter chats can truly transform the way K-12 art educators learn and grow professionally. The themes that emerged highlight how these chats affect traditional professional development, networking, boosting confidence, trying new teaching methods, and building strong relationships. In the ever-changing world of education, these findings offer exciting opportunities to improve teaching, promote collaboration, and create a thriving community of art educators.

This research emphasizes the importance of Twitter chats, inviting educators, schools, and leaders to use this tool for positive change and continuous growth. By embracing this way of

learning, educators can better adapt to the evolving educational landscape, improving art education overall. As the journey in education continues, this study guides educators towards more collaboration, innovation, and inspiration in K-12 art education.

References

- Abderrahim, L., & Plana, M. G. C. (2021). A theoretical journey from social constructivism to digital storytelling. *The EUROCALL Review*, 29(1), 38-49.
- Alam, M. K. (2021). A systematic qualitative case study: questions, data collection, NVivo analysis and saturation. *Qualitative Research in Organizations and Management: An International Journal*, 16(1), 1-31.
- Anderson, T., & Dron, J. (2011). Three generations of distance education pedagogy. *International Review of Research in Open and Distributed Learning*, 12(3), 80-97.
- Attwell, G. (2007). Personal learning environments-the future of eLearning. *Elearning Papers*, 2(1), 1-8.
- Avalos, B. (2011). Teacher professional development in teaching and teacher education over ten years. *Teaching and Teacher Education*, 27(1), 10-20.
- Balsley, J. (2013). Why art teachers need content specific professional development. *National Art Education Association Advisory Bulletin*. Reston, VA: Accessed September, 3, 2013.
- Bandura, A. (1977a). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191.
- Bandura, A. (1977b). Social learning. *The Fontana Dictionary of Modern Thought*, 84, 191-215.
- Battersby, S. L., & Verdi, B. (2015). The culture of professional learning communities and connections to improve teacher efficacy and support student learning. *Arts Education Policy Review*, 116(1), 22-29.
- Bautista, A., Stanley, A. M., & Candusso, F. (2021). Policy strategies to remedy isolation of specialist arts and music teachers. *Arts Education Policy Review*, 122(1), 42-53.

- Bell, F. (2011). Connectivism: Its place in theory-informed research and innovation in technology-enabled learning. *International Review of Research in Open and Distributed Learning, 12*(3), 98-118.
- Bell-Robertson, C. G. (2014). "Staying on our feet" Novice music teachers' sharing of emotions and experiences within an online community. *Journal of Research in Music Education, 61*(4), 431-451.
- Bingham, T., & Conner, M. (2015). *The new social learning: Connect. Collaborate. Work.* American Society for Training and Development.
- Blitz, C. L. (2013). Can online learning communities achieve the goals of traditional professional learning communities? What the literature says. REL 2013-003. Regional Educational Laboratory Mid-Atlantic.
- Bower, M. (2019). Technology-mediated learning theory. *British Journal of Educational Technology, 50*(3), 1035-1048.
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*(1), 210-230.
- Britt, V. G., & Paulus, T. (2016). "Beyond the four walls of my building": A case study of #Edchat as a community of practice. *American Journal of Distance Education, 30*(1), 48-59.
- Broad, J. H. (2015). So many worlds, so much to do: Identifying barriers to engagement with continued professional development for teachers in the further education and training sector. *London Review of Education.*
- Brooks, A. W. (2015). Using connectivism to guide information literacy instruction with tablets. *Journal of Information Literacy 9*(2).

- Buffington, M. L. (2008). Creating and consuming Web 2.0 in art education. *Computers in the Schools, 25*(3-4), 303-313.
- Burr, V. (2015). *Social constructionism*. Routledge.
- Burton, D. (2016). A quartile analysis of selected variables from the 2008 NAEP visual arts report card. *Studies in Art Education, 57*(2), 165-178.
- Callanan, M., Cervantes, C., & Loomis, M. (2011). Informal learning. *Wiley Interdisciplinary Reviews: Cognitive Science, 2*(6), 646-655.
- Carpenter, J. P. (2014). Twitter's capacity to support collaborative learning. *International Journal of Social Media and Interactive Learning Environments, 2*(2), 103-118.
- Carpenter, J. P., & Harvey, S. (2019). "There's no referee on social media": Challenges in educator professional social media use. *Teaching and Teacher Education, 86*, 102904.
- Carpenter, J. P., & Krutka, D. G. (2014). How and why educators use Twitter: A survey of the field. *Journal of Research on Technology in Education, 46*(4), 414-434.
- Carpenter, J. P., & Krutka, D. G. (2015). Engagement through microblogging: Educator professional development via Twitter. *Professional Development in Education, 41*(4), 707-728.
- Carpenter, J. P., & Morrison, S. A. (2018). Enhancing teacher education... with Twitter?. *Phi Delta Kappan, 100*(1), 25-28.
- Carpenter, J. P., Morrison, S. A., Craft, M., & Lee, M. (2020). How and why are educators using Instagram?. *Teaching and Teacher Education, 96*, 103-149.
- Carpenter, J., Tani, T., Morrison, S., & Keane, J. (2022). Exploring the landscape of educator professional activity on Twitter: An analysis of 16 education-related Twitter hashtags. *Professional Development in Education, 48*(5), 784-805.

- Carr, C. T., & Hayes, R. A. (2015). Social media: Defining, developing, and divining. *Atlantic Journal of Communication*, 23(1), 46-65.
- Casteel, H. R. (2018). *Effective art education practices: Evaluation, policy, and discourse*. [Doctoral dissertation, University of Tennessee-Knoxville]. TRACE Digital Archive. https://trace.tennessee.edu/utk_graddiss/5328/
- Conlon, T. J. (2004). A review of informal learning literature, theory and implications for practice in developing global professional competence. *Journal of European Industrial Training*, 28(2/3/4), 283-295.
- Conradie, P. W. (2014). Supporting self-directed learning by connectivism and personal learning environments. *International Journal of Information and Education Technology*, 4(3), 254-259.
- Corbin, J., & Strauss, A. (2007). *Qualitative research. Techniques and procedures for developing grounded theory*. SAGE Publications.
- Corcoran, T. B. (1995). *Helping teachers teach well: Transforming professional development*. CPRE Policy Brief. Consortium for Policy Research in Education. <https://repository.upenn.edu/entities/publication/6bbef413-b4be-4a3a-b2fe-671d9fff6e99>
- Couros, A. (2009). Open, connected, social—implications for educational design. *Campus-wide information systems*, 26(3), 232-239.
- Courtnage, L., & Smith-Davis, J. (1987). Interdisciplinary team training: A national survey of special education teacher training programs. *Exceptional Children*, 53(5), 451-458.
- Cox, A. (2005). What are communities of practice? A comparative review of four seminal works. *Journal of Information Science*, 31(6), 527-540.
- Crabtree, B. F., & Miller, W. L. (2022). *Doing qualitative research*. Sage publications.

- Creswell, J. W. (2009). Mapping the field of mixed methods research. *Journal of Mixed Methods Research, 3*(2), 95-108.
- Creswell, J. W. (2013, November 14). *Steps in conducting a scholarly mixed methods study*. Discipline-Based Education Research Group Speaker Series, Lincoln, NE.
<https://digitalcommons.unl.edu/dberspeakers/48/>
- Dabbagh, N., & Kitsantas, A. (2012). Personal Learning Environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. *The Internet and Higher Education, 15*(1), 3-8.
- Darling-Hammond, L., Burns, D., Campbell, C., Goodwin, A. L., Hammerness, K., Low, E. L., ... & Zeichner, K. (2017). *Empowered educators: How high-performing systems shape teaching quality around the world*. John Wiley & Sons.
- Darling-Hammond, L., & Richardson, N. (2009). Research review/teacher learning: What matters. *Educational Leadership, 66*(5), 46-53.
- Darling-Hammond, L., Wechsler, M. E., Levin, S., & Tozer, S. (2022). Developing Effective Principals: What Kind of Learning Matters?. *Learning Policy Institute*.
- Davidson, J., & Dwyer, R. (2014). The role of professional learning in reducing isolation experienced by classroom music teachers. *Australian Journal of Music Education, 1*(1), 38-51.
- Dempsey, T., & Mestry, R. (2023). Teachers' Perceptions and Experiences of Navigating Continuing Professional Development during the COVID-19 Pandemic. *Education Sciences, 13*(9), 933.
- Denzin, N. K., Lincoln, Y. S., Giardina, M. D., & Cannella, G. S. (Eds.). (2023). *The SAGE handbook of qualitative research*. SAGE publications.

- Derry, S. J. (1999). A fish called peer learning: Searching for common themes. *Cognitive Perspectives on Peer Learning*, 9(1), 197-211.
- Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, 38(3), 181-199.
- Desimone, L. M., & Garet, M. S. (2015). Best practices in teachers' professional development in the United States. *Psychology, Society, & Education* 7(3), 252-263.
- Dewey, J. (1986). Experience and education. *The Educational Forum* 50(3), 241-252).
- Dewey, J. (1980). John Dewey. *The middle works of John Dewey, Volume 9, 1899–1924: Democracy and education, 1916 (Volume 9)(Collected works of John Dewey)*. Southern Illinois University Press.
- Deyamport III, W. H. (2013). *An implementation of a Twitter-supported personal learning network to individualize teacher professional development* [Doctoral dissertation]. Capella University).
- Downes, S. (2007). Learning networks in practice. *Emerging Technologies for Learning*, 2(4), 20.
- Downes, S. (2009). Learning networks and connective knowledge. In H. Yang & S,C, Yuen (Eds.) *Collective intelligence and E-Learning 2.0: Implications of web-based communities and networking* (1st ed. pp. 1-26). IGI Global.
- Downes, S. (2022). Connectivism. *Asian Journal of Distance Education*, 17(1).
- Draves, T. J. (2017). Collaborations that promote growth: music student teachers as peer mentors. *Music Education Research*, 19(3), 327-338.
- DuFour, R. (2004). Leading edge: The best staff development is in the workplace, not in a workshop. *Journal of Staff Development*, 25(2), 63-64.

- Ebner, M., Lienhardt, C., Rohs, M., & Meyer, I. (2010). Microblogs in Higher Education—A chance to facilitate informal and process-oriented learning?. *Computers & Education*, 55(1), 92-100.
- Eisner, E. W. (2017). *The enlightened eye: Qualitative inquiry and the enhancement of educational practice*. Teachers College Press.
- Eisner, E. W., & Day, M. D. (Eds.). (2004). *Handbook of research and policy in art education*. Routledge.
- Erbas, M. K. (2021). Professional marginalization and isolation: a study of Physical Education teachers. *European Journal of Education and Pedagogy*, 2(5), 47-50.
- Ferguson, H., & Wheat, K. L. (2015). Early career academic mentoring using Twitter: the case of# ECRchat. *Journal of Higher Education Policy and Management*, 37(1), 3-13.
- Frechtling, J. A. (1995). *Teacher enhancement programs: A perspective on the last four decades*. National Science Foundation.
- Fullan, M. (2007). Educational reform as continuous improvement. In W.D. Hawley (Ed.), *The keys to effective schools: Educational reform as continuous improvement*. (1st ed. pp. 1-12). Corwin Press.
- Gagnon, G. W., & Collay, M. (2005). *Constructivist learning design: Key questions for teaching to standards*. Corwin Press.
- Gaikwad, S., & Brantley, P. (1992). Teacher isolation: Loneliness in the classroom. *Journal of Adventist Education*, 54(4), 14-15.
- Georgia Department of Education. (2020). *Georgia's path to recovery for K-12 schools*. Georgia Department of Education and Georgia Department of Public Health.

- Gess-Newsome, J., Taylor, J. A., Carlson, J., Gardner, A. L., Wilson, C. D., & Stuhlsatz, M. A. (2019). Teacher pedagogical content knowledge, practice, and student achievement. *International Journal of Science Education, 41*(7), 944-963.
- Glaser, B. G. (1978). *Theoretical sensitivity*. University of California,.
- Goodyear, V. A., Parker, M., & Casey, A. (2019). Social media and teacher professional learning communities. *Physical Education and Sport Pedagogy, 24*(5), 421-433.
- Gunawardena, C. N., Lowe, C. A., & Anderson, T. (1997). Analysis of a global online debate and the development of an interaction analysis model for examining social construction of knowledge in computer conferencing. *Journal of Educational Computing Research, 17*(4), 397-431.
- Guskey, T. R. (1991). Enhancing the effectiveness of professional development programs. *Journal of Educational and Psychological Consultation, 2*(3), 239-247.
- Guskey, T. R. (2000). *Evaluating professional development*. Corwin press.
- Guskey, T. R. (2002). Professional development and teacher change. *Teachers and Teaching, 8*(3), 381-391.
- Guskey, T. R., & Huberman, M. (1995). *Professional development in education: New paradigms and practices*. Teachers College Press, New York.
- Hargreaves, A. (2001). The emotional geographies of teachers' relations with colleagues. *International Journal of Educational Research, 35*(5), 503-527.
- Harvey, S., & Hyndman, B. (2018). An investigation into the reasons physical education professionals use Twitter. *Journal of Teaching in Physical Education, 37*(4), 383-396.
- Hicks, A., & Graber, A. (2010). Shifting paradigms: teaching, learning and Web 2.0. *Reference Services Review, 38*(4), 621-633.

- Hill, J. R., Song, L., & West, R. E. (2009). Social learning theory and web-based learning environments: A review of research and discussion of implications. *The American Journal of Distance Education, 23*(2), 88-103.
- Hirsh, S. (2022). The evolution of standards for professional learning. *The Learning Professional, 43*(3), 34-37.
- Hirsh-Pasek, K., Zosh, J. M., Golinkoff, R. M., Gray, J. H., Robb, M. B., & Kaufman, J. (2015). Putting education in “educational” apps: Lessons from the science of learning. *Psychological Science in the Public Interest, 16*(1), 3-34.
- Homewood, M. J. (2022). Twitteryvision: Using Twitter live chat to guild communities of practice as a legal learning tool. In A. Thanaraj (Ed.), *Teaching legal education in the digital age* (pp. 36-46). Routledge.
- Hooker, M. (2008). *Best practices in teacher professional development*.
http://www.gesciorg/old/files/docman/Teacher_Professional_Development_Models.pdf
(accessed on 20 January 2022).
- Hord, S. M. (2008). Evolution of the professional learning community. *The Learning Professional, 29*(3), 10.
- Hourigan, R. (2011). Race to the top: Implications for professional development in arts education. *Arts Education Policy Review, 112*(2), 60-64.
- Ingersoll, R. (2001). Teacher shortages and turnover in rural schools in the US: An organizational analysis. *Educational Administration Quarterly, 59*(2), 396-431.
<https://doi.org/10.1177/0013161X231159922>

- International Society for Technology in Education. (2000). *National educational technology standards for students: Connecting curriculum and technology*. International Society for Technology in Education.
- Intrator, S. M., & Kunzman, R. (2007, March). The person in the profession: Renewing teacher vitality through professional development. *The Educational Forum*, 71(1), 16-32.
- Jacob, B. A., & Lefgren, L. (2004). Remedial education and student achievement: A regression-discontinuity analysis. *Review of Economics and Statistics*, 86(1), 226-244.
- Jamieson, M. K., Govaart, G. H., & Pownall, M. (2023). Reflexivity in quantitative research: A rationale and beginner's guide. *Social and Personality Psychology Compass*, e12735.
- Johnson, S. M., Berg, J. H., & Donaldson, M. L. (2005). *Who stays in teaching and why: A review of the literature on teacher retention*. Harvard Graduate School of Education. https://assets.aarp.org/www.aarp.org_/articles/NRTA/Harvard_report.pdf
- Johnson, S. M., Kraft, M. A., & Papay, J. P. (2012). How context matters in high-need schools: The effects of teachers' working conditions on their professional satisfaction and their students' achievement. *Teachers College Record*, 114(10), 1-39.
- Johnson, P. R., & Yang, S. (2009, August). *Uses and gratifications of Twitter: An examination of user motives and satisfaction of Twitter use*. [Paper presentation]. Association for Education in Journalism and Mass Communication, Boston, MA, United States.
- Kabilan, M. K., Adlina, W. F. W., & Embi, M. A. (2011). Online collaboration of English language teachers for meaningful professional development experiences. *English Teaching: Practice and Critique*, 10(4), 94-115.
- Kauffman, S. A. (2000). *Investigations*. Oxford University Press.

- Keiper, S., Sandene, B. A., Persky, H. R., & Kuang, M. (2009). The Nation's Report Card: Arts 2008--Music & Visual Arts. National Assessment of Educational Progress at Grade 8. NCES 2009-488. National Center for Education Statistics.
- Killion, J. (2011). A bold move forward. *Journal of Staff Development*, 32(3), 10-14.
- Kim, B. (2001). Social constructivism. In M. Orey (Ed.), *Emerging perspectives on learning, teaching, and technology*. <http://www.coe.uga.edu/epltt/SocialConstructivism.htm>
- Kivunja, C., & Kuyini, A. B. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education*, 6(5), 26-41.
- Knowles, M. S., & Overstreet, H. A. (1950). Informal adult education: A guide for administrators, leaders, and teachers. (*No Title*).
- Kukla, A. (2013). *Social constructivism and the philosophy of science*. Routledge.
- Kumpulainen, K., & Sefton-Green, J. (2014). *What is connected learning and how to research it?*. https://doi:10.1162/IJLM_a_00091
- Kwakman, K. (2001). Work stress and work-based learning in secondary education: Testing the Karasek model. *Human Resource Development International*, 4(4), 487-501.
- Le Clus, M. (2011). Informal learning in the workplace: A review of the literature. *Australian Journal of Adult Learning*, 51(2), 355-373.
- Lefstein, A., Louie, N., Segal, A., & Becher, A. (2020). Taking stock of research on teacher collaborative discourse: Theory and method in a nascent field. *Teaching and Teacher Education*, 88, 102954.
- Luo, T., Sickel, J., & Cheng, L. (2017). Preservice teachers' participation and perceptions of Twitter live chats as personal learning networks. *TechTrends*, 61, 226-235.

- Lieberman, A., & Miller, L. (2008). *Teachers in professional communities: Improving teaching and learning*. Teachers College Press.
- Little, J. W. (1993). Teachers' professional development in a climate of educational reform. *Educational Evaluation and Policy Analysis, 15*(2), 129-151.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
- López-Torres, E., Carril-Merino, M. T., Miguel-Revilla, D., Verdú, M. J., & de la Calle-Carracedo, M. (2022). Twitter in initial teacher training: Interaction with social media as a source of teacher professional development for social studies prospective educators. *Sustainability, 14*(23), 16134
- Lortie, D. C. (2020). *Schoolteacher: A sociological study*. University of Chicago Press.
- Luo, T., Sickel, J., & Cheng, L. (2017). Preservice teachers' participation and perceptions of Twitter live chats as personal learning networks. *TechTrends, 61*, 226-235.
- Luo, T., Freeman, C., & Stefaniak, J. (2020). "Like, comment, and share"—professional development through social media in higher education: A systematic review. *Educational Technology Research and Development, 68*, 1659-1683.
- Lybarger, D. L. (2021). *Educators' experiences with Twitter chats as opportunities for personal and professional learning*. Wilmington University (Delaware).
- Machles, D. (2003). Situated learning. *Professional Safety, 48*(9), 22-28.
- Markello, C. (2013). A research journey: Narrative inquiry with three artist-teachers. *Practice Theory, 227-230*.
- Marsick, V. J., & Volpe, M. (1999). The nature and need for informal learning. *Advances in Developing Human Resources, 1*(3), 1-9.

- Marsick, V. J., & Watkins, K. (2015). *Informal and incidental learning in the workplace*.
Routledge.
- May, S., & Clapp, E. P. (2017). Considering the role of the arts and aesthetics within maker-centered learning. *Studies in Art Education*, 58(4), 335-350.
- McMahon, M. (1997, December). Social constructivism and the World Wide Web-A paradigm for learning. In ASCILITE conference. Perth, Australia (Vol. 327).
- Merriam, S. B., & Grenier, R. S. (Eds.). (2019). *Qualitative research in practice. Examples for discussion and analysis*. John Wiley & Sons.
- Milbrandt, M. K., Miraglia, K. M., & Zimmerman, E. (2018). An analysis of current research in Studies in Art Education and the International Journal of Education Through Art. *Studies in Art Education*, 59(1), 39-54.
- Mills, K. A., & Chandra, V. (2011). Microblogging as a literacy practice for educational communities. *Journal of Adolescent & Adult Literacy*, 55(1), 35-45.
- Mizell, H. (2010). *Why Professional Development Matters*. Learning Forward. 504 South Locust Street, Oxford, OH 45056.
- Moore, A. L., & Klein, J. D. (2020). Facilitating informal learning at work. *TechTrends*, 64(2), 219-228.
- Nguyen, H. C. (2019). An investigation of professional development among educational policy-makers, institutional leaders and teachers. *Management in Education*, 33(1), 32-36.
- No Child Left Behind Act of 2001, Pub. L. No. 107-110.
- Nordgren, R. D. (2015). The Age of Accountability in Education: Modernist Approaches to School Reform. *Journal of Research in Innovative Teaching*, 8(1).

- Ostovar-Nameghi, S. A., & Sheikahmadi, M. (2016). From teacher isolation to teacher collaboration: Theoretical perspectives and empirical findings. *English Language Teaching, 9*(5), 197-205.
- Partnership for the 21st Century Skills. (2015). P21 Framework Definitions.
- Patton, M. Q. (2005). Qualitative Research. In B. S. Everitt & D. C. Howell (Eds.), *Encyclopedia of Statistics in Behavioral Science* (p. bsa514). Hoboken: John Wiley & Sons, Ltd.
<https://doi.org/10.1002/0470013192.bsa514>
- Philipsen, B., Tondeur, J., Pareja Roblin, N., Vanslambrouck, S., & Zhu, C. (2019). Improving teacher professional development for online and blended learning: A systematic meta-aggregative review. *Educational Technology Research and Development, 67*, 1145-1174.
- Piaget, J. (1970). *Piaget's theory* (Vol. 1, pp. 703-732). Wiley.
- Puppe, L., Jossberger, H., Stein, I., & Gruber, H. (2020). Professional development in visual arts. *Vocations and Learning, 13*(3), 389-417.
- Reilly, C. (2017). Twitter as a professional development tool for teachers and aspiring teachers: A review of literature. *National Teacher Education Journal, 10*(2).
- Richards, K. A. R., Gaudreault, K. L., Starck, J. R., & Mays Woods, A. (2018). Physical education teachers' perceptions of perceived mattering and marginalization. *Physical Education and Sport Pedagogy, 23*(4), 445-459.
- Richardson, W., & Mancabelli, R. (2011). *Personal learning networks: Using the power of connections to transform education*. Solution Tree Press.
- Rolandson, D. M., & Ross-Hekkel, L. E. (2022). Virtual professional learning communities: A case study in rural music teacher professional development. *Journal of Music Teacher Education, 31*(3), 81-94.

- Rowley, J. (2002). Using case studies in research. *Management Research News*, 25(1), 16-27.
- Sabol, F. R. (2006). *Professional development in art education: A study of needs, issues, and concerns of art educators*. Reston, VA: National Art Education Foundation and National Art Education Association.
- Sabol, F. R. (2013). Seismic shifts in the education landscape: What do they mean for arts education and arts education policy? *Arts Education Policy Review*, 114(1), 33-45.
- Sales, B. D., & Folkman, S. E. (2000). *Ethics in research with human participants*. American Psychological Association.
- Schlichte, J., Yssel, N., & Merbler, J. (2005). Pathways to burnout: Case studies in teacher isolation and alienation. *Preventing School Failure: Alternative Education for Children and Youth*, 50(1), 35-40.
- Schreiber, L. M., & Valle, B. E. (2013). Social constructivist teaching strategies in the small group classroom. *Small Group Research*, 44(4), 395-411.
- Selwyn, N. (2011). Digitally distanced learning: A study of international distance learners' (non) use of technology. *Distance Education*, 32(1), 85-99.
- Shaw, R. D. (2019). Examining arts education policy development through policy frameworks. *Arts Education Policy Review*, 120(4), 185-197.
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology & Distance Learning*, 2, 3-10.
- Sims, S., & Fletcher-Wood, H. (2021). Identifying the characteristics of effective teacher professional development: a critical review. *School Effectiveness and School Improvement*, 32(1), 47-63.

- Sinclair, C., Jeanneret, N., & O'Toole, J. (Eds.). (2009). *Education in the arts: Teaching and learning in the contemporary curriculum*. Oxford University Press, USA.
- Sindberg, L. (2011). Alone all together—The conundrum of music teacher isolation and connectedness. *Bulletin of the Council for Research in Music Education*, (189), 7-22.
- Sindberg, L. K. (2014). Perceptions and perspectives of music teachers in urban settings: Isolation, conversation and collaboration. *Music Education Research*, 16(4), 387-403.
- Sindberg, L., & Lipscomb, S. D. (2005). Professional isolation and the public school music teacher. *Bulletin of the Council for Research in Music Education*, 43-56.
- Singh, L. (2020). A systematic review of higher education academics' use of microblogging for professional development: Case of Twitter. *Open Education Studies*, 2(1), 66-81.
- Sloep, P. B. (2013). Networked professional learning. *Technology-Enhanced Professional Learning: Processes, Practices and Tools*, 97-108.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333-339.
- Sparks, D., & Loucks-Horsley, S. (1989). Five models of staff development for teachers. *Journal of Staff Development*, 10(4), 40-57.
- Spicer, C., & Robinson, D. B. (2021). Alone in the gym: A review of literature related to physical education teachers and isolation. *Kinesiology Review*, 10(1), 66-77.
- Stake, R. E. (2010). *Qualitative Research: Studying How Things Work*. Guilford Publications, Inc.
- Stanley, A. M., Snell, A., & Edgar, S. (2014). Collaboration as effective music professional development: Success stories from the field. *Journal of Music Teacher Education*, 24(1), 76-88.

- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Sage Publications, Inc.
- Taylor, M., Yates, A., Meyer, L. H., & Kinsella, P. (2011). Teacher professional leadership in support of teacher professional development. *Teaching and Teacher Education, 27*(1), 8-94.
- Third, A., Richardson, I., Collin, P., Rahilly, K., & Bolzan, N. (2011). *Intergenerational attitude towards social networking and cybersafety: A living lab*. Retrieved from <http://apo.org.au/research/intergenerational-attitudes-towards-social-networking-and-cybersafety>
- Thornton, A. (2011). Being an artist teacher: A liberating identity?. *International Journal of Art & Design Education, 30*(1), 31-36.
- Trust, T. (2012). Professional learning networks designed for teacher learning. *Journal of Digital Learning in Teacher Education, 28*(4), 133-138.
- Trust, T., Krutka, D. G., & Carpenter, J. P. (2016). “Together we are better”: Professional learning networks for teachers. *Computers & Education, 102*, 15-34.
- Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education, 23*(6), 944-956.
- Twitter, Inc. (n.d.). Twitter. <https://twitter.com>
- Unrath, K., & Kerridge, D. (2009). Becoming an art teacher: Storied reflections of two preservice students. *Studies in Art Education, 50*(3), 272-286.
- US Department of Education. (2009). Race to the Top Program: Executive Summary. <http://www2.ed.gov/programs/racetothetop/executive-summary.pdf>

- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education, 24*(1), 80-91–91.
- Visser, R. D., Evering, L. C., & Barrett, D. E. (2014). # Twitter for Teachers: The implications of Twitter as a self-directed professional development tool for K–12 teachers. *Journal of Research on Technology in Education, 46*(4), 396-413.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Walter, C., & Briggs, J. (2012). *What professional development makes the most difference to teachers*. Oxford University Press. Retrieved on July, 20, 2015.
- Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems thinker, 9*(5), 2-3.
- Wesely, P. M. (2013). Investigating the community of practice of world language educators on Twitter. *Journal of Teacher Education, 64*(4), 305-318.
- Wheeler, S., & Ebner, M. (2010). *All I need to know about Twitter in education I learned in kindergarten*. Springer Press. <https://doi.org/10.1007/978-3-642-15378-5>
- Williams, J. (2014). Teacher educator professional learning in the third space: Implications for identity and practice. *Journal of Teacher Education, 65*(4), 315-326.
- Wong, J. T., Bui, N. N., Fields, D. T., & Hughes, B. S. (2023). A learning experience design approach to online professional development for teaching science through the arts: Evaluation of teacher content knowledge, self-efficacy and STEAM perceptions. *Journal of Science Teacher Education, 34*(6), 593-623.

- Yada, A., Leskinen, M., Savolainen, H., & Schwab, S. (2022). Meta-analysis of the relationship between teachers' self-efficacy and attitudes toward inclusive education. *Teaching and Teacher Education, 109*, 103521.
- Yarger, S. J., & Smith, P. L. (1990). Issues in research on teacher education. *Handbook of Research on Teacher Education, 25-41*. Macmillan.
- Yin, R. K. (2003). Designing case studies. *Qualitative Research methods, 5*(14), 359-386.

Appendix A

Participant Interest Survey

Study #20-042: Twitter Chats As An Online Learning Network For Art Educators

Researcher's Contact Information:

Jennifer Heyser /404.909.9243/jheyser@students.kennesaw.edu

Introduction

You are being invited to take part in a research study conducted by Jennifer Heyser of Kennesaw State University. Before you decide to participate in this study, you should read this form and ask questions about anything that you do not understand.

Description of Project

The purpose of the study is to better understand the potential use of Twitter Chats as a tool for informal professional development for art educators. The anticipated findings include; why some art teachers use Twitter chats to foster online professional learning, how art educators use Twitter chats as an online professional learning tool, and if their participation impacts art educator teaching practice, and if so, how.

Explanation of Procedures

Participants will complete a pre-survey that shows interest in participation in the study. Then they will continue to participate in the weekly #k12art chat on Twitter. Researcher will monitor transcripts from #K12ArtChat for one month but will not interact with participants during this time. After the month is over, the researcher will conduct a 30-45 minute recorded Skype interview with each participant. Additionally, participants will be asked to participate in one recorded 30 minute focus group on Skype.

Time Required

Pre-Survey – 5 minutes

Twitter Chats – subject dependent, they will participate at their usual level

Interview – 30-45 minutes

Focus Group – 30 minutes

Risks or Discomforts

There are no known risks anticipated due of taking part in this study.

Benefits

The possible benefits from this study for participants will be a better knowledge of the effects of using Twitter for content specific professional development and its effects on student learning in individual's classrooms.

Compensation

There is no compensation for participation in this research study.

Confidentiality

Data collected online will be handled in a confidential manner (identifiers will be used), but Internet Protocol addresses WILL NOT be collected by the survey program. Written transcripts will be stored in a locked filing cabinet in the office of the researcher and on a password protected Atlas.ti account for one year following the completion of the study. The written transcripts will be stored on the campus of Kennesaw State University for at least three years.

Inclusion Criteria for Participation

Participants in this study must be 21+ years of age and be an employed K-12 public school art educator working in the United States of America.

Use of Online Survey

IP addresses will not be collected through this online survey.

Statement of Understanding

The purpose of this research has been explained and my participation is voluntary. I have the right to stop participation at any time without penalty. I understand that the research has no known risks, and I will not be identified. By completing this survey, I am agreeing to participate in this research project.

Research at Kennesaw State University that involves human participants is carried out under the oversight of an Institutional Review Board. Questions or problems regarding these activities should be addressed to the Institutional Review Board, Kennesaw State University, 585 Cobb Avenue, KH3417, Kennesaw, GA 30144-5591, (470) 578-6407.

PLEASE PRINT A COPY OF THIS CONSENT DOCUMENT FOR YOUR RECORDS, OR IF YOU DO NOT HAVE PRINT CAPABILITIES, YOU MAY CONTACT THE RESEARCHER TO OBTAIN A COPY

- I agree and give my consent to participate in this research project. I understand that participation is voluntary and that I may withdraw my consent at any time without penalty.
- I do not agree to participate and will be excluded from the remainder of the questions.

2. Name (First, Last)

3. Twitter handle?

4. Where do you live? (City, State)

5. How long have you been teaching art?

6. What grade level(s) of art do you currently teach?

7. How long have you been using Twitter?

8. How frequently do you participate in the #k12art chat?

9. Are you willing to participate in the #k12art chat at least twice a month (during the fall of 2019)?

Yes

No

10. Are you willing to participate in a 30–45-minute online interview with the researcher?

Yes

No

11. Are you willing to participate in a 30-minute online focus group with the researcher?

Yes

No

Thank you for your interest and participation.

Appendix B

Interview Questions

1. Please describe any professional learning experiences you have had in your current role as an art educator at your local school.
2. How do you feel about the effectiveness of these professional learning experiences? What contributing factors have led you to feeling this way?
3. Please describe any professional learning experiences you have had in your current role as an art educator outside of your local school setting.
4. How do these professional learning experiences compare to the professional learning experiences you receive at your local school?
5. What goals would you personally want to achieve from your professional learning experiences?
6. How did you come to participating in the #K12ArtChat?
7. Why do you participate in the #K12ArtChat?
8. Do you participate in any other Twitter chats for professional learning? Which ones? Why?
9. How would you describe your Twitter online learning community?
10. What kind of information, if any, have you gained from your participation in the #K12ArtChat?
11. How have you used this information to change your teaching practice?
12. Can you provide a specific example(s) of your participation in #K12ArtChat changed your teaching practice?

Appendix C

Focus Group Questions

1. What are your thoughts about the K-12 art chat group?
2. What do you think are the pros and cons of using K-12 Art chat as a form of professional development?
3. What about the K-12 art chat has impacted your teaching practice the most and why?
4. Can you describe your motivation and reasons for participating in the K-12 art chat group as a form of professional development?
5. Could you share specific examples of how you have used K-12 Art chat for online professional learning, such as resources you've discovered or connections you've made?
6. In what ways have your interactions on K-12 Art chat influenced your teaching practices?
Can you provide any concrete examples of changes, improvements, or lessons you've used in your teaching as a result?
7. Have you observed any common themes or trends in the discussions or content shared on K-12 Art chat that have impacted your approach to teaching art?
8. How do you balance your participation in K-12 Art chat with other forms of professional development, and do you find one more effective than the other?
9. Can you describe any challenges or obstacles you've encountered while participating in K-12 Art chat for professional development, and how have you addressed them?
10. In what ways, if any, has your involvement in K-12 Art chat influenced your advocacy for arts education or your role as an art educator within your school or community?
11. Is there anything else you would like to share or any additional insights you feel are important for me to consider?

Appendix D

Building Bridges Code Tree

