

THE USE OF TWITTER IN THE CREATION OF  
EDUCATIONAL PROFESSIONAL  
LEARNING OPPORTUNITIES

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By

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## TWITTER AND PROFESSIONAL DEVELOPMENT

### **Abstract**

Technology and social networking are changing the way students are learning, and, if teachers plan to keep up with globally competitive 21<sup>st</sup> century education, educators need to become connected to other educators through networking and community learning. This study sought to prove that educators are using Twitter to increase their professional learning opportunities beyond the boundaries of traditional professional development offers, and educators feel a greater sense of fulfillment receiving professional development through networking and community learning than they do through traditional means of learning. A population of 160 educators, 105 females and 55 males between the ages of 22 and 65, were surveyed directly through education related hashtags on Twitter. An additional 32 educators from the survey population elected to participate in an interview. The study discovered that educators are frequently using Twitter professionally to collaborate, network, and engage in professional development, 90% of educators are extremely likely to use Twitter for professional development in the next 6 months, and 69% of educators say their use of Twitter for professional learning will increase over the coming school year. The interview portion of the study found that 71% of 32 educators felt a greater sense of fulfillment from professional development received via Twitter. The data indicate educators are using Twitter for professional learning opportunities because they feel a greater sense of fulfillment from the networking and community learning taking place.

Keywords: *Twitter, professional development, education*

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## Chapter 1: Introduction

### Background

Professional development opportunities and professional learning networks where educators meet to exchange ideas, learn new knowledge, and receive feedback have existed almost since the beginnings of education itself (Kabilan, Adlina, & Embi, 2011; Killion, 2011). Social media platforms, such as Twitter, Facebook, wikis, and blogs, have recently come onto the world-wide-web scene only in the last ten years. Over the course of these past ten years, technology has moved into every facet of the classroom as students and teachers are being prepared to interact with and compete in a 21<sup>st</sup>-century digital world (King, 2011).

Educators must be able to navigate this world in order to prepare students appropriately. The melding of social media, professional development, and professional learning networks are expanding the way educators acquire information from “one-size-fits-all, sit-and-get professional development”(Killion, 2011, p. 4) sessions that have little transference to the classroom to highly engaging, dynamic and interactive applications that allow for individualized learning through the management and selection of content, co-construction of knowledge, demonstration of competencies, and generation of networks for ongoing learning. Connectivism, a learning theory that combines behaviorism, cognitivism, and constructivism, focuses on the network of learning created by the changing nature of the digital world (Siemens, 2005). The Connectivist learning theory is based on the premise that learning and knowledge rests in diversity of others’ opinions. Seeking the opinions of others in multiple personal and professional connections and shifting the foundation of information that exists outside of one’s own head allows for formation of knowledge and demonstration of true understanding (Siemens, 2005).

Just as education is pushing students to become accountable for their education in navigating and evaluating an ever-expanding network of information, highly effective teachers must model this process by collaborating, engaging in anytime professional development, reflecting through communication and feedback, and using instructional technology tools to enhance instruction (Reich, Levinson, & Johnston, 2011; Trust 2012). Teachers who build a professional learning network through social media have less demands on time that might detract from classroom instruction and preparation and more time to have conversations with other educators worldwide to “receive feedback on new ideas, discuss lesson plans, ask for support, solve problems, and collaborate” (Trust, 2012, p. 134). This opportunity for asynchronous and synchronous learning is allowing educators to transform the traditional ideas of professional development and the creation of professional networks restricted by boundaries and time (Trust, 2012). In making this transition, educators move from isolation into a true life-long learner who grows and shares expertise with others and who models this perpetual learning to students (Trust, 2012).

### **Definition of Terms**

*21<sup>st</sup> -century Learning* – a movement to redefine the goals of education, to transform how learning is practiced, and expand the range of measurement of student achievement; commonly comprised of skills such as digital literacy, collaboration, critical thinking, and problem solving.

*Asynchronous Learning* – a method that uses online learning to facilitate information sharing outside the constraints of time and place among a network of people.

***Backchannel*** – conversations and professional development that happen over social media or Web 2.0 tools alongside and in addition to a traditional professional development opportunity.

***Connectivism*** – a learning theory based on the premise that knowledge exists in the world rather than the head of an individual; reminiscent of a network.

***Google Form*** – a web based tool through Google that allows responses to be linked to an interactive spreadsheet

***Hashtag*** - a tag embedded in a Twitter text message; used to mark keywords and disseminate these messages under searchable, content related labels.

***Likert scale*** – an approach to scaling responses in survey research.

***Microblogging*** – a broadcast medium in the form of blogging; a brief text message, most often seen in social media, specifically Twitter, in which its content is smaller in file size than traditional blogging.

***Professional/Personal Learning Network*** – an informal learning network where a learner interacts with persons, whom they may or may not have met, and derives knowledge from that interaction; personal connections that contribute directly to professional development and knowledge.

***Social Media*** – platforms for electronic communication through which users create online communities to share information, ideas, personal messages, and other content.

***Social Network*** – online communities of people with a common interest who use a Web site or other technologies to communicate, collaborate, and share information and resources.

***Synchronous Learning*** – a group of people learning the same thing at the same time; often refers to real-time chats and interactions using social media or Web 2.0 tools.

*Tweet* – a microblog of up to 140-characters posted using the social media platform Twitter.

*Twitter* – a social media platform that allows users to send out a brief 140-character text message to followers and followers of hashtags.

### **Statement of the Problem**

The way humans are learning is changing – for students and for teachers. If teachers expect to implement 21<sup>st</sup>-century learning into classrooms in order to prepare students to succeed in a globally connected and emergent world, they need to develop their own expertise with new learning technologies (Killion, 2011). Professional development today is the main pathway to improving student learning and to increasing job satisfaction. Recent trends in education and education financing for schools have put constraints on schools and districts in terms of the professional development opportunities and resources being offered and made available. Educators face a growing scarcity of relevant and poignant professional development; those seeking growth and those responsible for providing professional development are forced to explore other avenues for educators' professional growth through technology and social media.

### **Research Questions**

Are educators turning to Twitter to create, use, and manage professional learning networks for professional development? Is online professional development facilitated by Twitter more fulfilling than traditional professional development? Insufficient research has been conducted in the area of Twitter-based professional learning networks and professional development. Educators are experiencing both first hand and in observation the power of personalized professional development through Twitter.

The study sought to prove that there was a strong correlation between those who engaged in the self-directed creation of professional learning networks for professional development and those who found and experienced greater satisfaction, learning, and application of knowledge gained in professional development opportunities. By gathering data quantitatively through a Likert scale survey and qualitative data gathered through interview questions Tweeted out to various education related hashtags on Twitter, this study added to the body of research focused on shedding positive light on the use of Twitter for professional development.

### **Limitations**

Live interviews using Twitter were neither currently preferred nor traditionally valid methods of data gathering, and, as such, this activity may have affected the reaction of readers. Because the survey and the interview were to be available to persons around the world who followed hashtags, followed those who retweeted, and followed the researcher, the respondents could not be randomly selected nor assigned to experimental or control groups. Limitations were placed on the type of data collected.

The responses gathered for data purposes came from Twitter users so there was an assumed level of associated bias. Twitter is an open social media platform, so it was nearly impossible to know how many active users were accessing Tweets. Although hashtags related specifically to education were used, there was no way to know whether or not only educators accessed these hashtags.

### **Delimitations**

The results of this study were intended to apply to those individuals involved in education who were either studying the role of Twitter in professional development, tentatively testing the uses of Twitter for professional learning opportunities, or actively engaged in using social media

platforms to create, use, and manage professional learning networks for the purposes of professional development, attainment of further knowledge, and personal growth.

### **Assumptions**

It was assumed that respondents provided truthful information during data collection and interviews without feeling bias against the use of Twitter to obtain respondents' information.

This study also assumed that the use of Twitter to create professional learning opportunities was one of main options 21<sup>st</sup>-century educators selected for professional development. This research study assumed that the use of Twitter for professional learning was an effective substitute, if not a more engaging and successful, form of professional development over traditional methods of professional development delivery. Since the link to the survey was sent out through an education related hashtag, it is assumed that respondents were involved in education in some form.

## **Chapter 2: Literature Review**

### **Traditional Professional Development**

Professional development comprises those skills and knowledge attained for both personal growth and career advancement. Traditional models of professional development include courses offered by school districts, universities, technical assistance agencies, professional associations, nonprofit organizations, and for-profit vendors. Traditional models of delivery are not providing meaningful experiences required to enhance teachers' professional learning and competencies (Kabilan et al., 2011). The professional development being organized lacks pedagogical content and structural characteristics and merely repeats what has previously been studied during the initial phases of teacher education in college (Kabilan et al., 2011).

### **Effective Professional Development**

Professional development should be praxis oriented in that it allows educators to continually learn from each other as they engage in interplay of reflection and action (Reich et al., 2011). Studies by Bauer (2010), King (2011), and Reich, Levinson and Johnston (2011) have shown that extended experiences of professional learning that become ongoing, rather than concentrated, are more beneficial. Additionally, effective professional development should engage educators in learning that is both dynamic and flexible in that it takes advantage of mentors and both formal and informal modes of learning to enhance teachers' awareness of their own strengths, weaknesses, practices, and philosophies (Bauer, 2010; Kabilan et al., 2011).

Beach (2012) sums up that:

Effective professional development is flexible, provides sustained follow up, includes on-going coaching, engages teacher in active learning experiences with teaching methods, focuses on integration of specific subject matter content, involves reflection on

instruction and beliefs, fosters collaboration with colleagues, and examines the impact of instruction on student outcomes. (p. 256)

In contrast to traditional models of professional development that focus on a set criterion of goals in order to meet the various needs and levels of educators in attendance, effective professional development does not need to be a focused effort; it may simply be a self-directed, professional and academic curiosity through a virtual dialogue with educators of like minds (King, 2011). Part of increasing effectiveness of professional development is to “grow the teaching of digital literacies” and “capitalizing on the affordances of digital tools and social networking capabilities to collaborate, plan with, and learn from other teachers” (Beach, 2012, p. 256).

### **Connectivism, Networking, and Community Learning**

Technology has reorganized the way living, communicating, and learning occur, and learning principles and processes should reflect these changes in social environments (Siemens, 2005). Connectivism, a learning theory based on the premise that learning and knowledge rests in diversity of opinions through the formation of connections, has emerged to explain how learning is interwoven with making meaning, sharing social and historical practices, forming identity, and belonging to a community (Killion, 2011; Mackey & Evans, 2011; Siemens, 2005). In a network-based learning theory, individuals feed knowledge into organizations and institutions, the nodes of the network responsible for learning exchange, which feeds back to the individual allowing for continued learning (Siemens, 2005). Connectivism uses social learning to provide merit in the “multimembership of communities of practice, enabled by e-learning and virtual learning environments” (Mackey & Evans, 2011, p. 3). George Couros, principal of Forest Green School in Alberta, Canada, and author of “Connected Principals” blog, in an interview by *Principal Magazine* agrees with the connectivist learning theory claiming that:

It is through conversation and connections that our learning really develops. Learning should be social, but, in our time, it should not be limited only to the divisions/districts or schools that we are a part of. We have an opportunity to connect with people and ideas all over the world. (Social Media as a Professional Tool, 2011, p. 36)

### **Community Learning through Social Networking**

No longer made up of the familiar four walls of the school and the surrounding community, the school community extends beyond geographic boundaries (Social Media as a Professional Tool, 2011). Social networks promise a potentially vast reservoir of information for educators who are actively engaged in connected network learning opportunities. Embracing connectivism and the need for integration of new ways of learning, The National Education Technology Plan calls for improving learning through “connected teaching” where teachers “connect to content, expertise, and activities through online communities” (Office of Educational Technology, 2010, p. 42). The National Education Technology Plan also calls for social networking sites to become an integral role in teacher preparation and ongoing professional development. The timeliness, immediacy, and “just-in-time” learning social media affords allows for emphasis to be placed on personalized, collaborative, and student-centered learning (Demski, 2012, p. 45).

Counterintuitive to what many accept as appropriate means of acquiring professional development, access to community learning through social networking allows for self-directed, voluntary, and informal learning that refuses isolated learning experiences in favor of “dynamic collaboration and dialogue inherent to life-changing online professional development” (King, 2011, p. 40). Social media does not only provide immediate access to information and learning opportunities, it provides access to authentic, global audiences, multimodal means of

communication, meaning making and knowledge, expert and immediate feedback, and vast opportunities for identity development (Craig & Stevens, 2011; Kabilan et al., 2011; King, 2011; Mackey & Evans, 2011; Reich et al., 2011).

### **Professional Learning Networks and Professional Growth through Twitter**

Professional Learning Networks (PLNs) are defined as a system of interpersonal connections and relationships and resources that support information learning (Trust, 2012). These networks provide connections to others worldwide that can offer support, feedback, and collaboration opportunities that allow educators to stay up to date on the latest teaching techniques, pedagogies and practices, and updates in the field of education (Beach, 2012; Cox, 2010; Dobler, 2012; Killion, 2011; Trust, 2012). Twitter fills the gap between face-to-face professional learning by allowing these connections to take place in providing opportunities for educators to share information, knowledge, resources, classroom experience, and to collaborate and reflect with other educators (Cox, 2012; Dobler, 2012; Killion, 2011; Trust 2012).

Echoing connectivist-learning theory, the concept behind PLNs and professional growth through Twitter is allowing many educators to transform the paradigm of the isolated teacher into that of a lifelong, connected learner. Novice teachers engaged in collaboration and reflection with PLNs and receiving feedback from veteran teachers, who are also engaged with the same PLNs, benefit through the application of praxis and world knowledge afforded through said collaboration and reflection (Beach 2012; Craig & Stevens, 2011; Kabilan et al., 2011; King, 2011; Mackey & Evans, 2011; Reich et al., 2011; Trust 2012). Twitter supports teachers' PLNs by creating and facilitating interactions among the educators involved in connected, collaborative, and interactive meaning making.

**Summary**

The literature indicates that the integration of technology into life, communication, and learning has shifted how meaning making and knowledge occurs. Educators worldwide are experiencing a shift in their own learning and professional growth by seeking alternatives to traditional professional development in favor of networking. The change in how knowledge and true understanding is acquired has helped facilitate this movement towards effective professional development by enforcing the ideas of ongoing collaboration, connection, and reflection. Social networking, like Twitter, is providing the access for teachers to create thriving PLNs that provide immediate feedback, resources, support, and knowledge. Further research is need to determine exactly how teachers are engaging with their PLNs, how successful PLNs are in providing feedback, resources, support and knowledge, and whether there is a shift in preferring informal, asynchronous professional development to traditional models of knowledge acquisition.

### **Chapter 3: Methods**

#### **Participants**

The participants in this study were pre-service, current, or retired educators and persons serving in a variety of support and leadership roles in education of various backgrounds from around the United States and the world. Table 1 provides a breakdown of education related hashtags on Twitter that were used to access the subjects for this study. Subjects who clicked the hyperlink in the Tweet and selected to participate were informed of their option to not respond, and they were informed that their response and submission of any portion of the survey was considered as their option to participate and as permission to use their anonymous data. Educators in EC-12, administrative roles, higher education professor positions, support roles, policy makers, and Educator Service Centers and professional development providers were all represented through the responses.

Table 1

*Education Related Twitter Hashtags*

<b>Hashtag</b>	<b>Geographic Area</b>	<b>Content Area</b>	<b>Synchronous Opportunities</b>	<b>Asynchronous Opportunities</b>
#edchat	International	General education related topics	Meets on Tuesdays	Continuous
#engchat	International	English Language Arts	Meets on Mondays	Continuous
#ntchat	International	Education related topics and support central to new and pre-service teachers	Meets on Wednesdays	Continuous
#sschat	International	Social Studies	Meets on Mondays	Continuous
#mathchat	International	Mathematics	Meets on Mondays	Continuous
#scichat	International	Science	Meets on Tuesdays	Continuous
#txed	Texas – United States	General education related topics	Meets on Wednesdays	Continuous
#cpchat / #satchat	International	Connected principals and administration related topics	Meets on Saturdays	Continuous

**Instrument**

This research used a mixed method of a quantitative survey and a qualitative interview. The survey gathered data through user input and made use of three varying Likert-scale systems. When ‘frequency of general use’ was measured the survey range was: Never, Less than once a month, At least once a month, At least once day, and Several times a day. When ‘reasons for Twitter use’ was measured the response range was: Strongly Disagree, Disagree, Neutral, Agree,

and Strongly Agree. When ‘frequency of professional development use’ was measured the survey range was: Never, Rarely, Sometimes, Occasionally, and Frequently. While the response range from ‘frequency of professional development’ and ‘frequency of general use’ was worded differently, they were designed to measure similar output of Tweets and degree of participation. The interview questions Tweeted out at the conclusion of the survey were open-ended in nature and measured specific uses of Twitter for professional development.

**Procedure**

Participants were asked once a day for a week and a half through a Tweet to respond to a web-based Google Form survey which sought demographical information, average time use of Twitter, average uses for Twitter, professional development uses for Twitter, and satisfaction of professional growth and PLNs (see Figure 1).

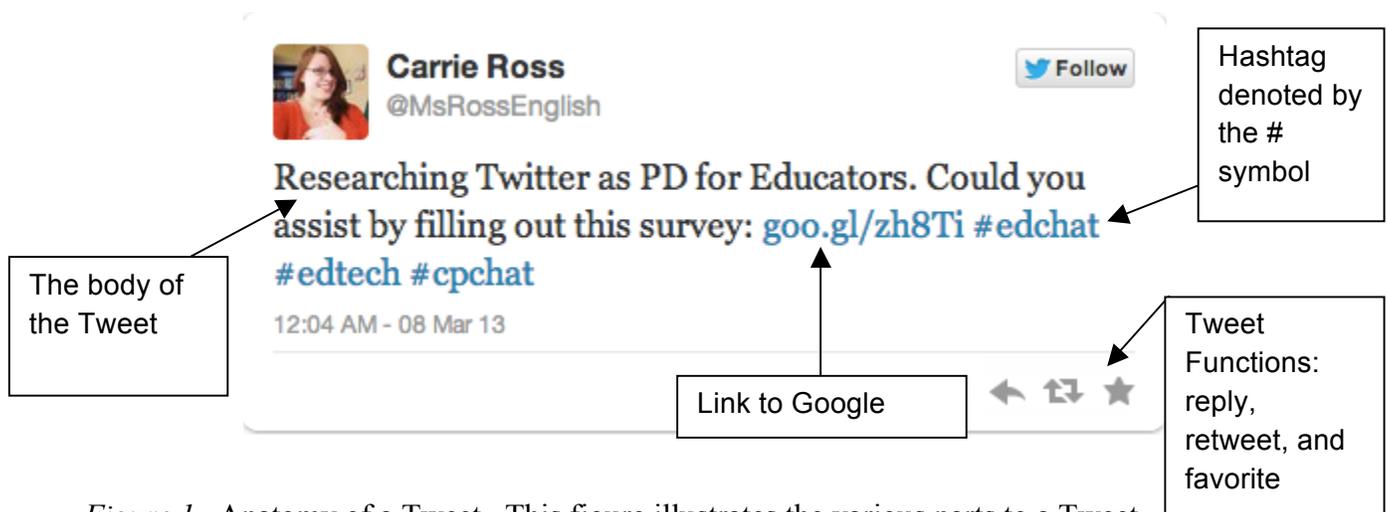


Figure 1. Anatomy of a Tweet. This figure illustrates the various parts to a Tweet.

Participants had the option of deciding whether or not they would like to be contacted for further information regarding clarification and additions to their responses. Tweets were sent out with a different link to the interview questions on a Google Form to those indicated on the survey that they would be interested in providing additional information. Interview questions

sought information regarding uses of Twitter for professional growth, whether Twitter was used for enhancing the professional development experience, and whether they felt more fulfilled using Twitter for professional development or more fulfilled attending traditional professional development.

## Chapter 4: Results

### Educators Using Twitter

This research surveyed educators who used Twitter for professional development. Responses to the survey totaled 160 with the youngest responder being 22 and the oldest responder being 65. The average age of respondents was 40 years of age. Females represented 66% of the survey population, a total of 105 individuals, and males represented 34% of the survey population, a total of 55 individuals. Table 2 illustrates participants' responses to whether or not they use Twitter. The majority of 98% of responses said they view and post Tweets.

Table 2

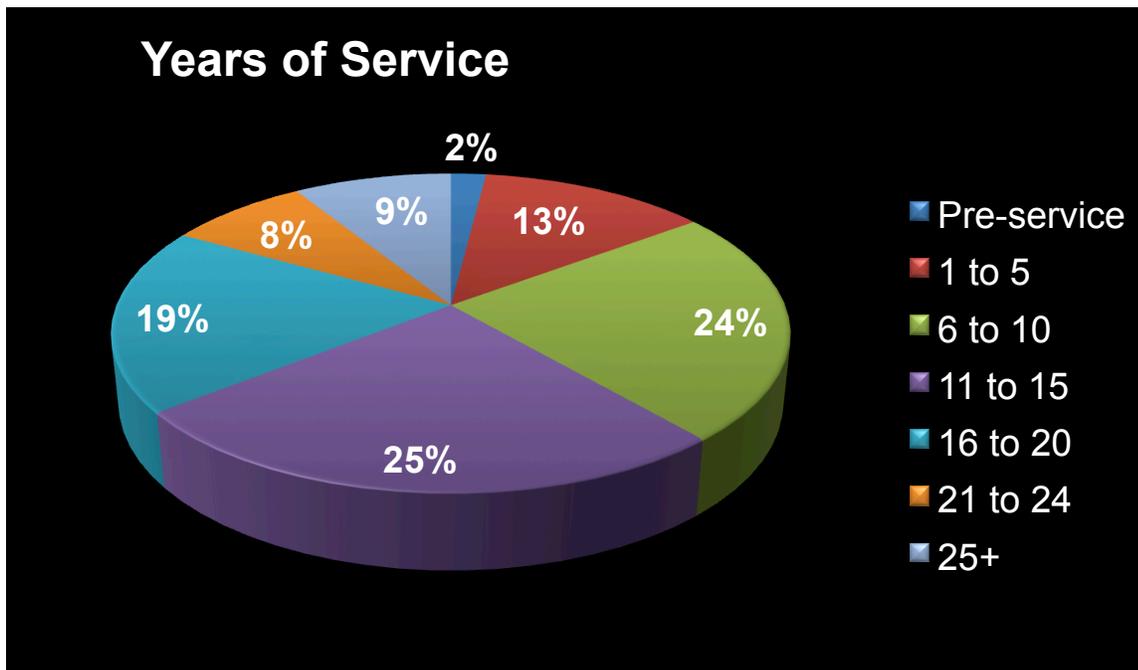
*Do Educators Use Twitter?*

Do you use Twitter?	Population	Percentage
Yes, I view and post Tweets.	156	98%
Yes, I only view Tweets.	4	2%
Yes I have used it, but I have stopped using it.	0	0%
No, I have not used it before.	0	0%

The geographical location of educators who use Twitter came from a wide array around the world. Responses were received from 32 of the 50 states within the United States with the majority of responses centered on three general locations: the state of Texas, the Upper Midwest, and the East Coast. Responses were received from six out of ten provinces of Canada. The European continent showed responses from the countries of Ireland, England and Wales of

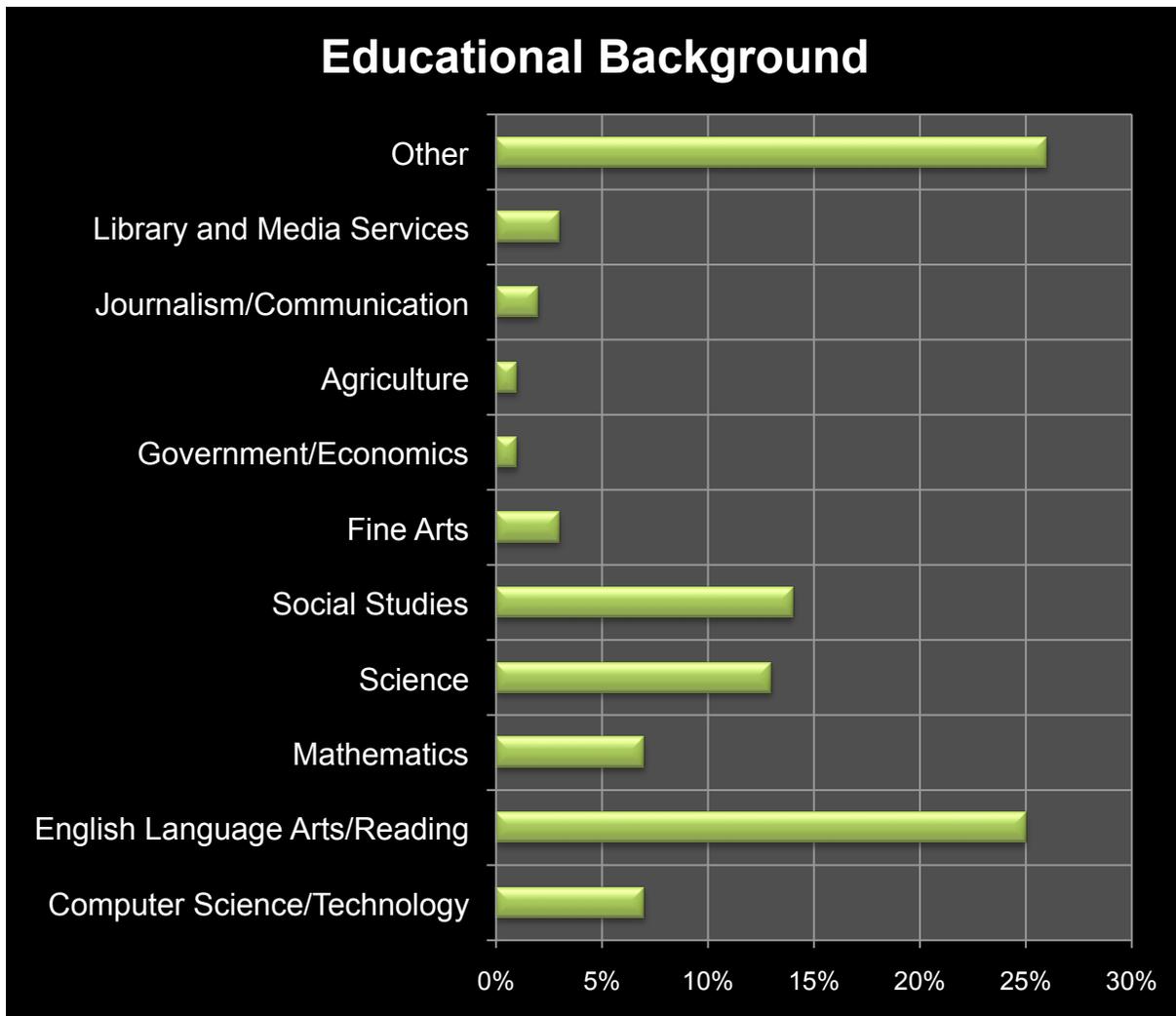
the United Kingdom, Germany, and Sweden. Asia showed one response from the country of Saudi Arabia.

A total of 80, or 50% of responders, have been in the field of education for 6-15 years. Each category of years of service had educator representatives (see Figure 2).



*Figure 2.* Years of experience in an education related field. This figure illustrates respondents' years of service in education and the total number of respondents at each category. Years 6-10, 11-15, and 16-20 showed the greatest number of responses. Pre-service teachers represented 2%, and educators with 25+ years of service represented 9% of the population.

Twenty-five percent of those surveyed have an English/Language Arts background. Science and Social Studies educators represented 13% and 14%, respectively. Twenty-six percent of those surveyed selected the choice "Other" and identified several background representations: School Psychology, Special Education, Instructional Technology, Physical Education, and Foreign Languages (see Figure 3).



*Figure 3.* Educational background. This figure illustrates the percentage breakdown of individual respondents' educational background. Educators from the four content areas of math, science, social studies, and English Language Arts represented 49% of the survey population.

Various roles in education were represented from the 160 responses. The role of "Teacher" accounted for 89 of those surveyed. The next largest role was that of "Administrator" at 18%. Almost every role in education was accounted for including pre-service teachers, a teacher who is also a student at a higher education institution, education professional development service providers, retired educators, and education policy makers. Of the 22 individuals who responded with a role of "Other" the common factor among this population was

the role of “Instructional Coach” for a campus or a district. The role of instructional coach is different from that of an instructional assistant as the instructional coach serves in an administrative capacity to train teachers while the assistant provides classroom teachers assistance in teaching students. Additionally, educators teaching at an institution of higher education represented 5% of the total population (see Figure 4).

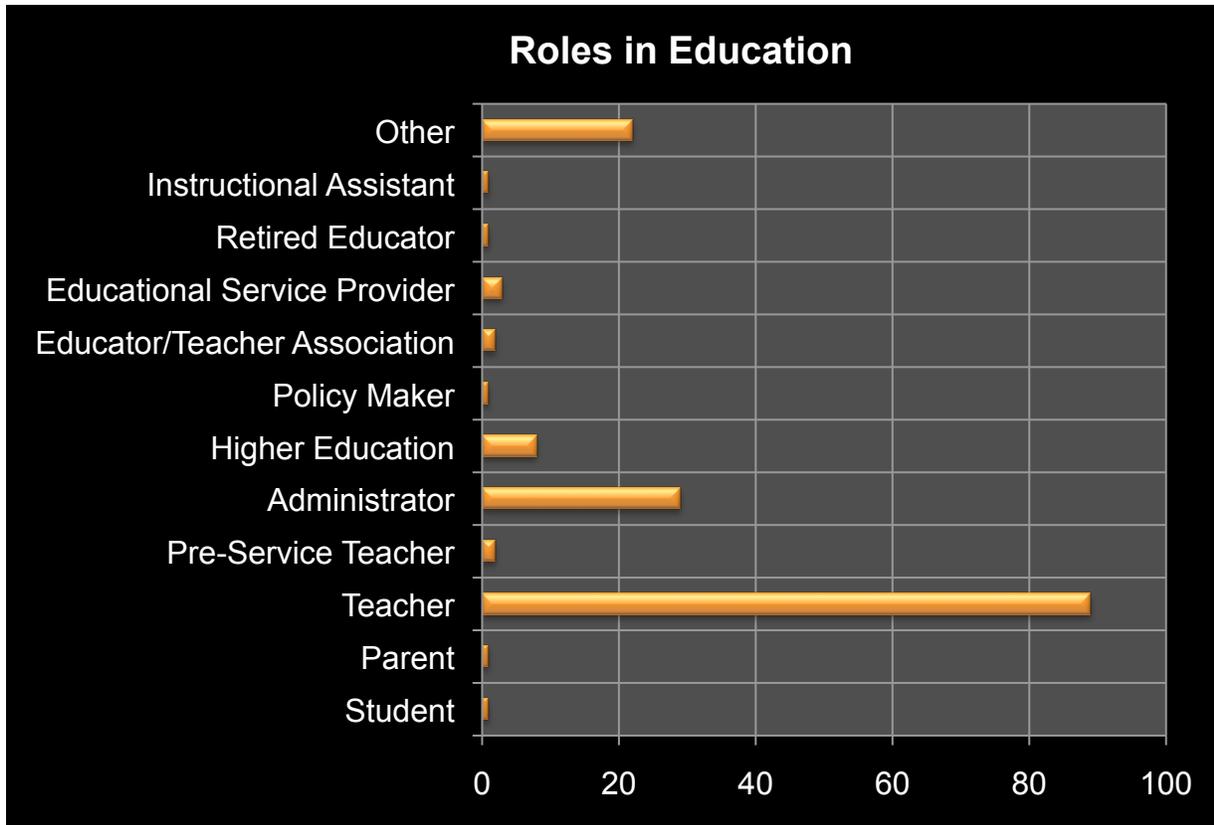
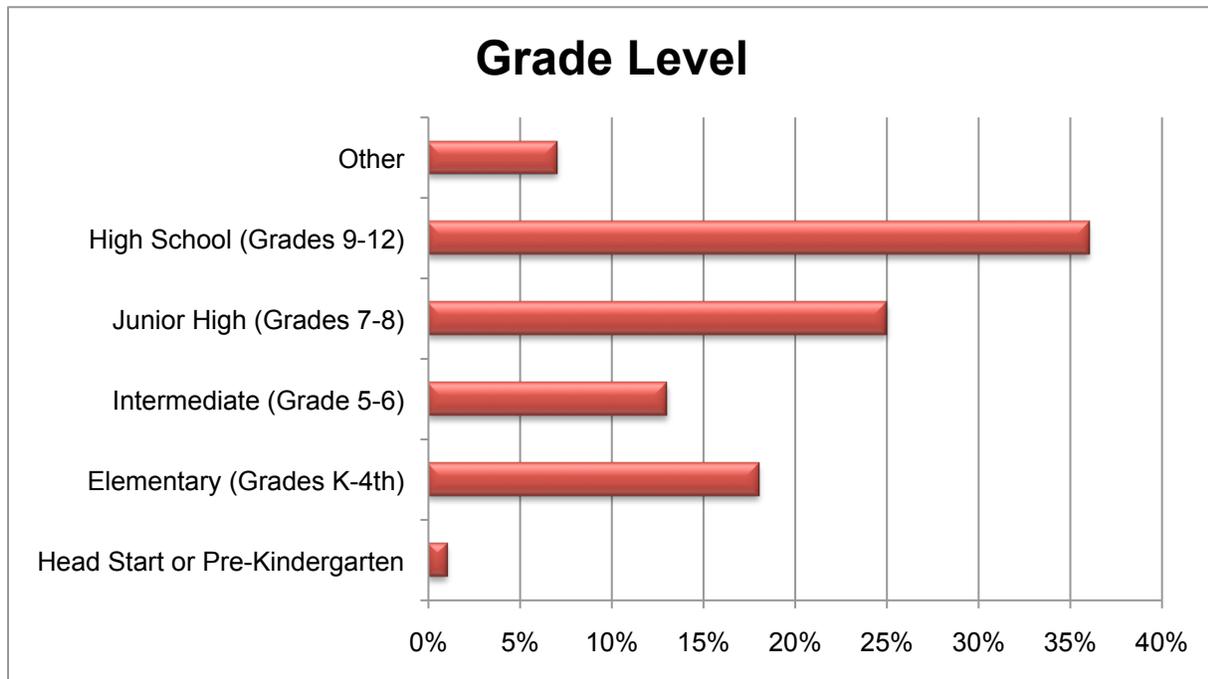


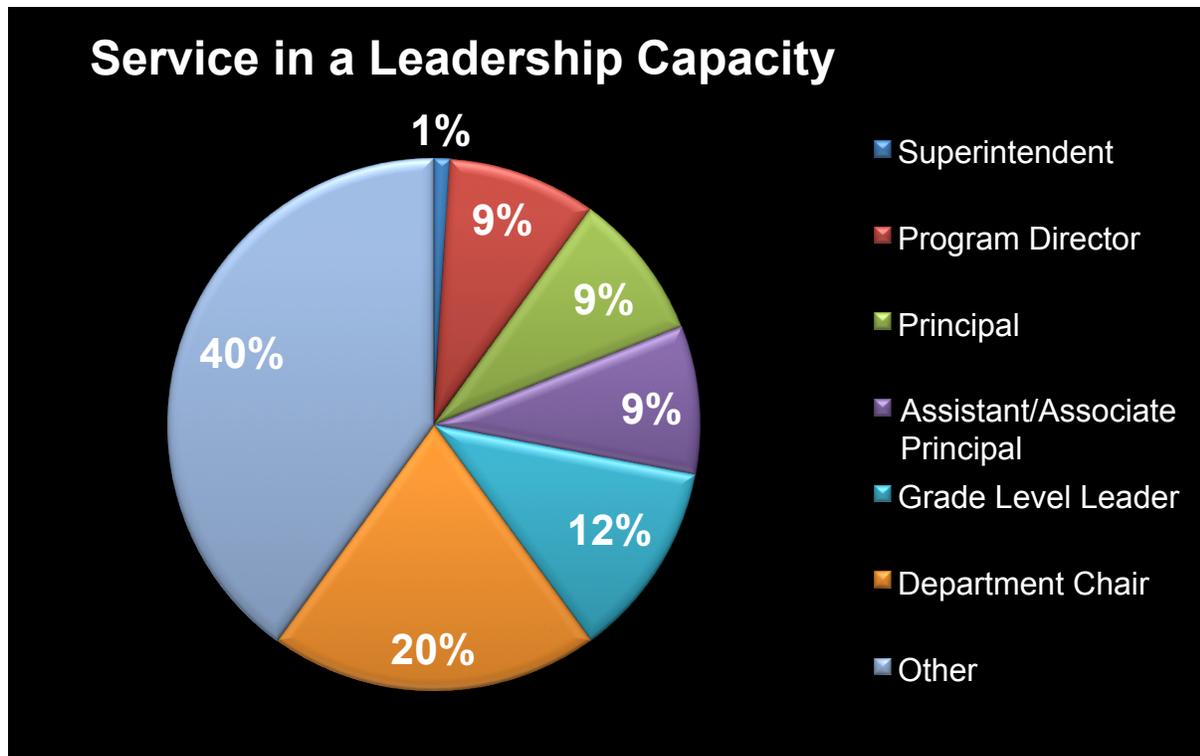
Figure 4. Roles in education. This figure illustrates the various roles that the population hold as it relates to education. Educators who either deal directly with students in the classroom or have the positional authority to make decisions that could impact students comprised 79% of the survey population.

Educators who selected the role of pre-service teacher, teacher, or administrator selected a grade level which represented the approximate age of the students taught (see Figure 5).



*Figure 5. Grade Level.* This figure illustrates the number of responses associated with the various grade levels in education. Head Start or Pre-Kindergarten educators represented the minority of respondents with a population of only 2 individuals. The 7% who selected “Other” did not specify their grade level. High School represented 36% and Middle School comprised 25% of the survey group. Intermediate and Elementary educators totaled 13% and 18% respectively.

Educators serving in a leadership capacity represented 120 individuals of the total population for a total 75% of those surveyed. Leadership roles identified included superintendent of a school district, principal of a campus, associate principal of a campus, program director, grade level leader, and department chair (see Figure 6).



*Figure 6.* Those serving in a leadership capacity. This figure illustrates the various leadership roles educators using Twitter serve and the number of respondents serving in these roles. The 7% who selected “Other” did not specify their leadership role. Of the specific leadership roles identified, department chair, which is a classroom teacher serving in a leadership role over other teachers related to their content area, represented 20% of those who responded.

### Frequency of Posting on Twitter

When looking at frequency of posting on Twitter, participants were asked how often they generally posted. Forty-two percent of educators responded that they post several times a day. Other designations that received a moderate distribution were “at least once a day” at 23% and “at least once a week” at 24%. Table 3 illustrates the distribution of participants’ responses.

Table 3

*How Often Educators Post on Twitter*

<b>How often do you post on Twitter?</b>	<b>Population</b>	<b>Percentage</b>
Never, I don't use Twitter	<b>1</b>	1%
Less than once a month	<b>6</b>	4%
At least once a month	<b>11</b>	7%
At least once a week	<b>38</b>	24%
At least once a day	<b>37</b>	23%
Several times a day	<b>67</b>	42%

Twitter users can produce six different types of interactions on Twitter: Tweet, Reply, Retweet, Mention, Direct Message and List. The survey used these six functions to gauge the frequency of the interactions educators were having on Twitter. A “Tweet” is designated as the educator sending out an original composition. A “Reply” is the designation given an original composition that extends the conversation from a Tweet another person has created and published. Retweets occur when an educator merely repeats the microblog posting of another Twitter user. A retweet typically has no original additions from the educator, and, often times, retweets have links to additional resources.

Twitter has built into it a function that allows one Twitter user to direct message another user who follows them. This information is kept between those two parties and is considered private information. The list feature in Twitter allows users to categorize and group together other users they may or may not follow. Using this function allows Twitter users to restrict the

information that they receive by looking specifically at those users they have listed. Mentioning in Twitter is the act of creating original content and including a specific user that will receive that information in the Tweet regardless of if they follow the sender. Mentions can also be seen by anyone who follows the sender, even if they are not cited in the Tweet specifically. The purpose of mentioning is intended to carry on a direction conversation with others even though that conversation is open for others to read and presents an opportunity for those not mentioned to join the conversation. The frequency of posting on Twitter for the six subgroups of actions showed a wide range of activity with Tweeting, retweeting, and replying occurring the most frequently (see Figure 7).

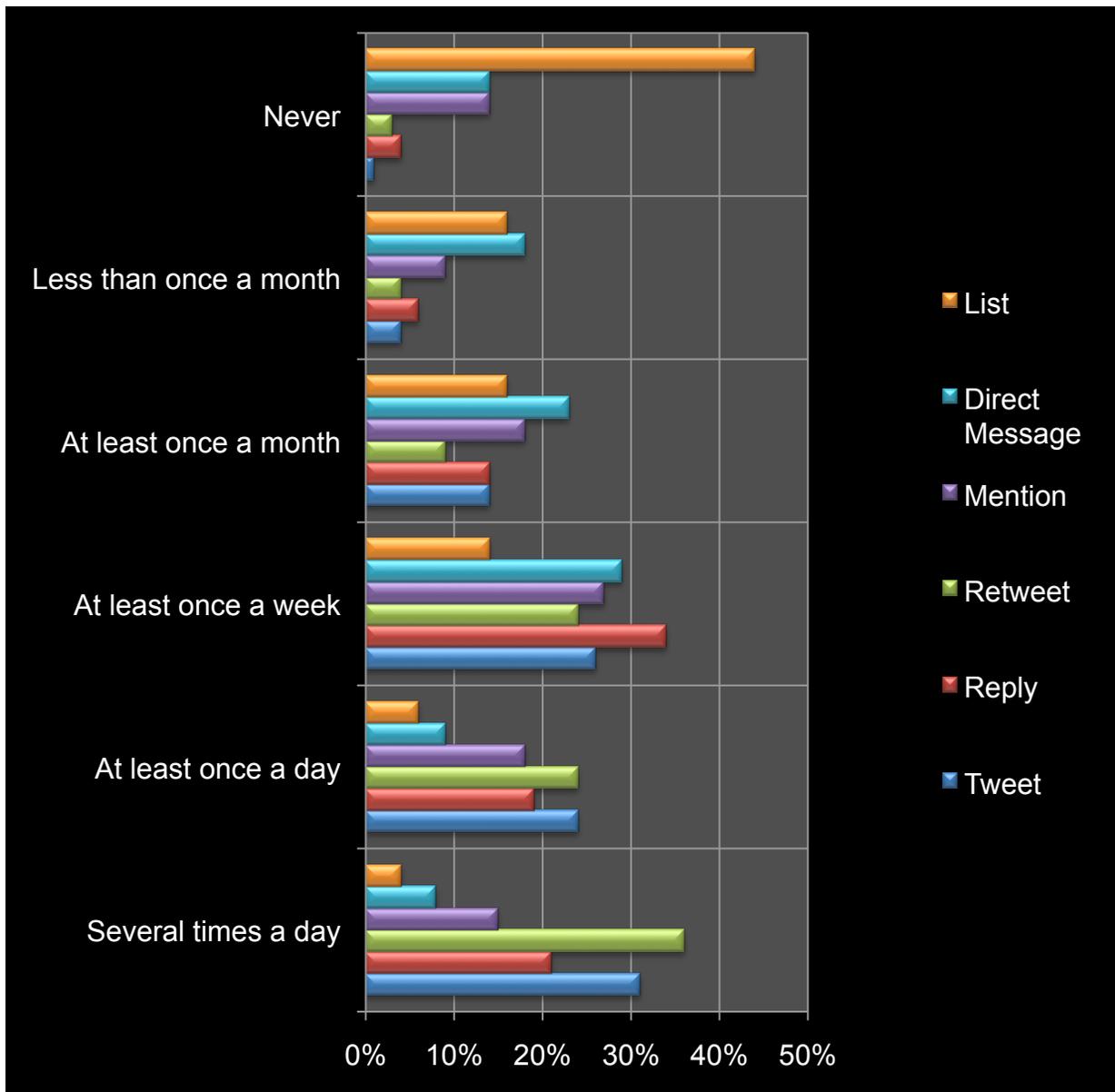


Figure 7. Frequency of Posting on Twitter. Of the educators who responded to the survey, a total of 96 individuals or 60% retweet others at least once a week. Educators’ use of direct messaging showed a significant decrease in frequency of use over other types of posting as only 15% of surveyed educators engage in this activity at least once a day. Results indicated that 44% of educators surveyed never restrict their Tweeting by using a list function. Of the educators surveyed, a 60% majority indicate that they use mentioning at least once a week or

more frequently. Fifty-five percent of respondents Tweeted at least once a day or more frequently, and 40% replied to a conversation at least once a day or more frequently.

**Uses of Twitter**

Educators surveyed were asked to select the types of content they viewed on Twitter. In addition to education related topics, several options were given that did not pertain to education. Respondents were instructed to select as many as applied to their preference. While all 21 categories registered as least one response, the categories of Education and Technology excelled over all others (see Figure 8).

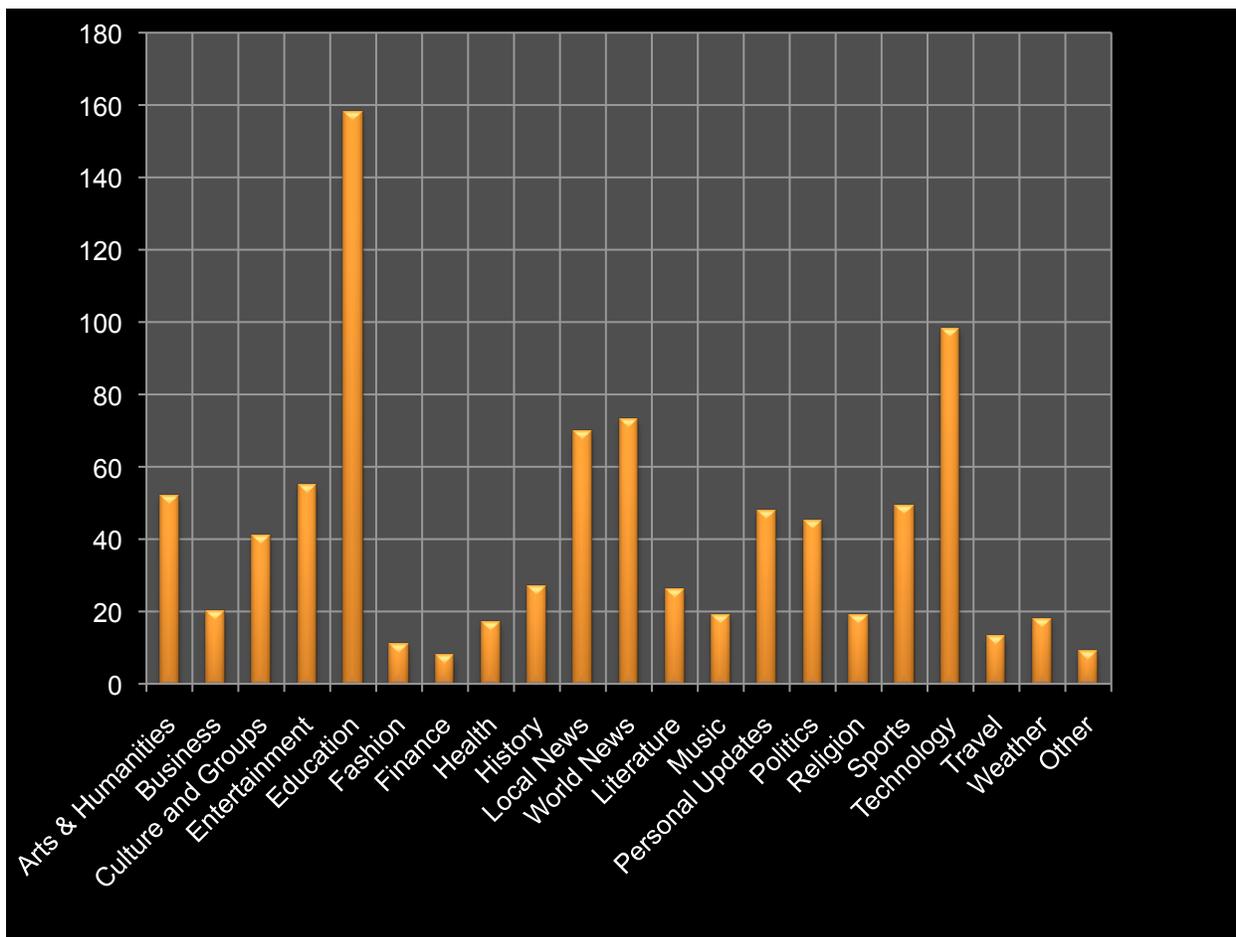


Figure 8. Types of content viewed on Twitter. This figure illustrates the various types of content educators surveyed are viewing on Twitter, and their preference for specific types of

content. Respondents have the choice to select as many as applied to their content preference. The category of Education accounted for 18% of selections received. In a more specific perspective, 158 survey participants or 99% of the population selected education as the type of content they view most on Twitter. Technology was the second highest totaling 11% of selections over other categories. World and Local News received equal amounts of selections and totaled 8%, each respectively, of the category selections.

General uses of Twitter received relatively high responses of agreement. Ninety-two percent of educators agreed or strongly agreed that Twitter's ease of use was one of the reasons they use Twitter. Coinciding with this data, 86% of respondents agreed or strongly agreed that one of the reasons they use Twitter is because it is easy to learn. Additionally, 93% of those surveyed agreed or strongly agreed that they use Twitter because it is free.

Participants were asked to respond to a set of statements designed to measure the reasons why they use Twitter. The scale respondents used was a range of choices: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree (see Figure 9).

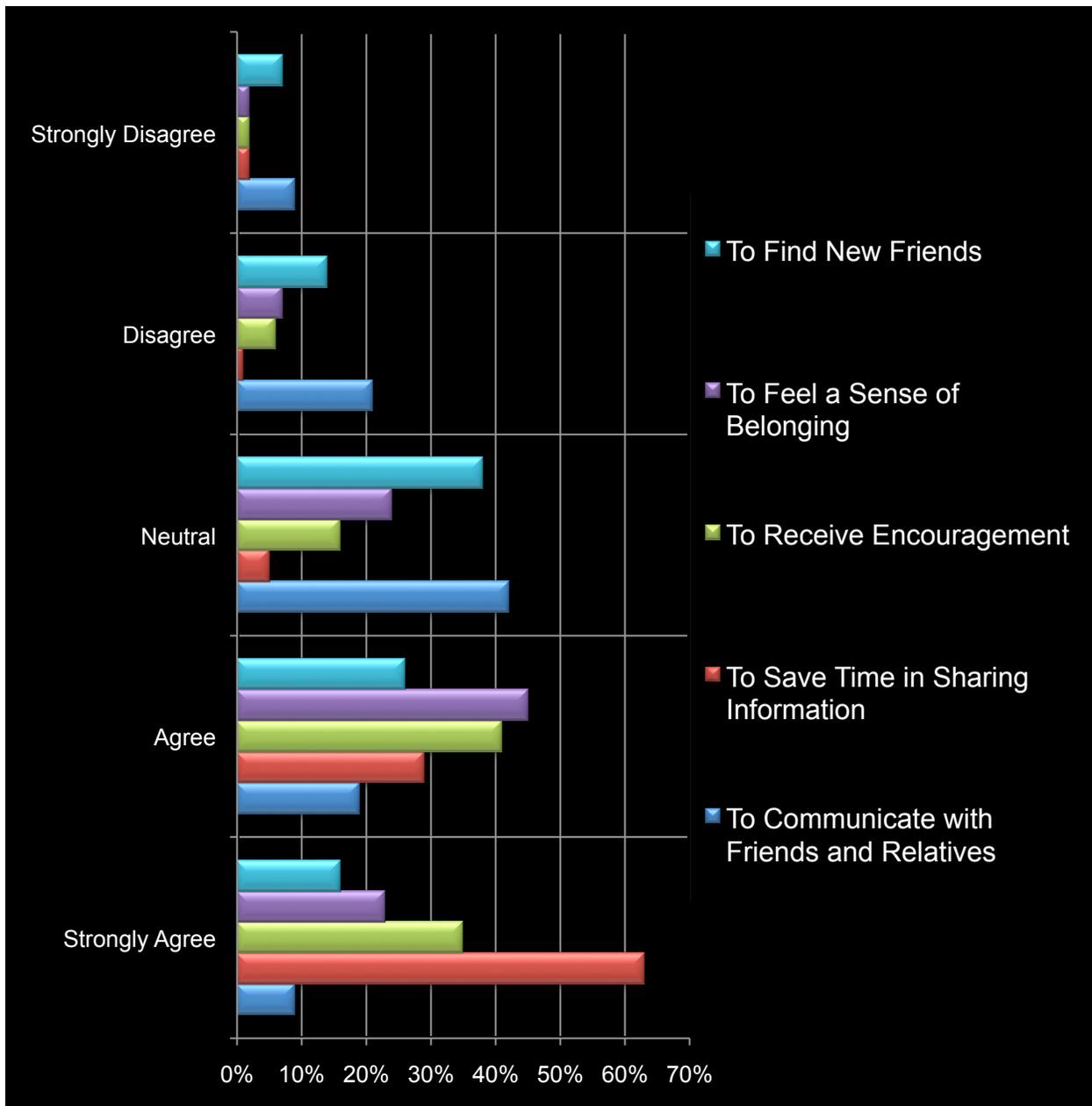
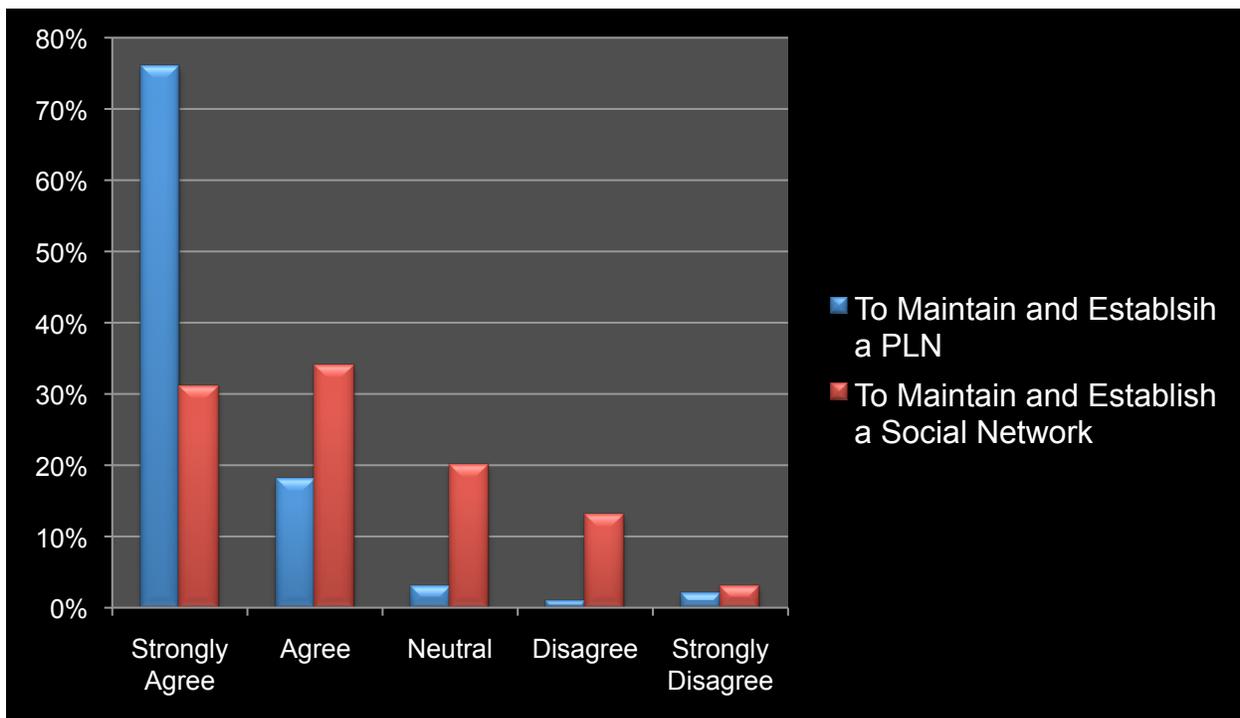


Figure 9. Reasons why educators use Twitter. Responding to their use of Twitter to communicate and keep up-to-date with friends and relatives, 67 respondents or 42% were neutral while 30% disagreed or strongly disagreed. Using Twitter for information sharing was assessed, and an overwhelming majority of 147 respondents or 92% of the total survey population agreed or strongly agreed that they use Twitter because it saves time in sharing information. Data showed that 86% of those surveyed agreed or strongly agreed that they use Twitter to get

encouragement from others. In accordance with using Twitter to form a support network for encouragement, 108 educators surveyed agreed or strongly agreed that they use Twitter because they feel a sense of belonging. Sixty-one subjects remained neutral to using Twitter to find new friends while 22 disagreed and 11 strongly disagreed with this statement.

PLNs deal in collaboration and sharing of resources and information that leads directly to professional development, a social network is a place of common interest where users share general resources and non-specific information. Subjects were asked to rate using Twitter to maintain and establish a social network and to maintain and establish a PLN (see Figure 10).



*Figure 10.* Use of Twitter to maintain and establish a PLN or social network. Finding new friends is a social activity on Twitter, and 38% of respondents remained neutral to using Twitter to find new friends while 14% disagreed and 7% strongly disagreed with this statement.

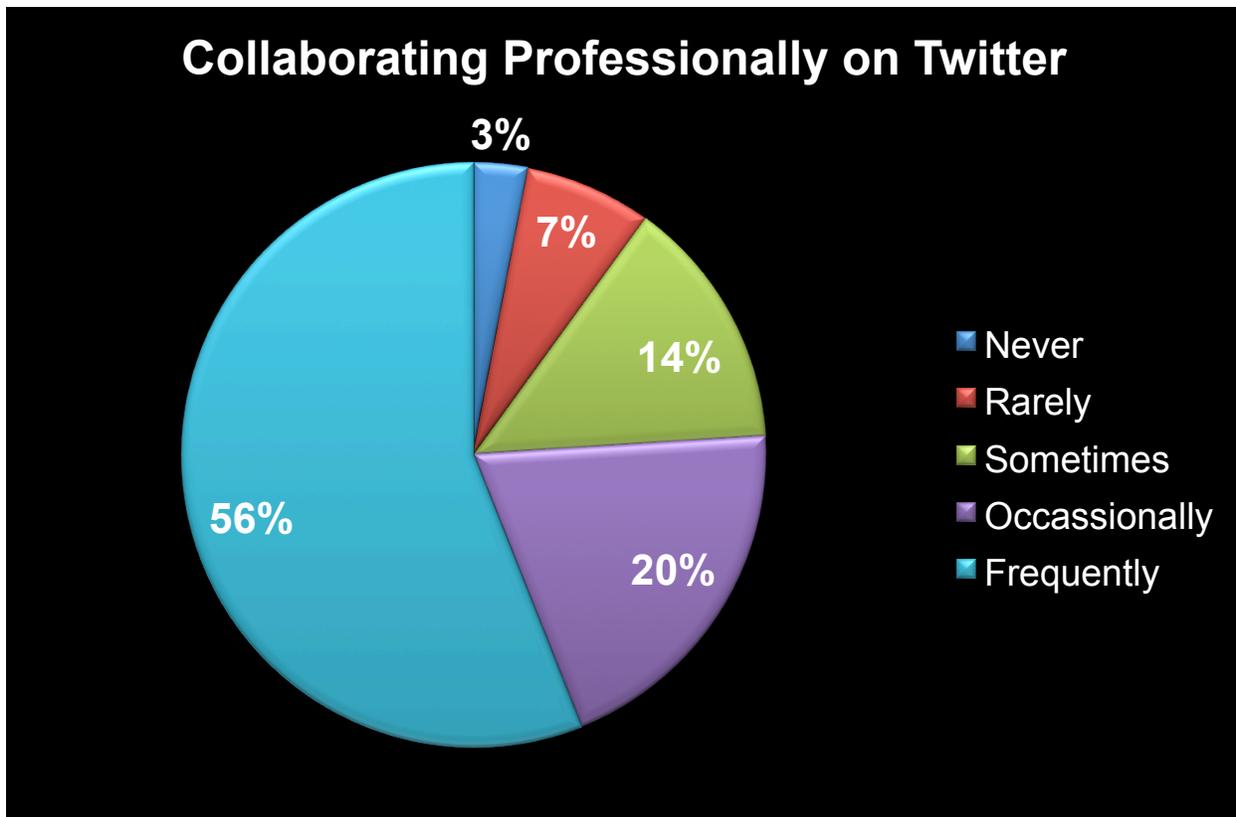
Responses to using Twitter to maintain and establish a professional learning network (PLN), a

professional activity, did not vary among the five rating categories as 121, 76% of the survey population, strongly agreed that the reason they use Twitter is to maintain and establish a PLN.

### **Professional Uses of Twitter**

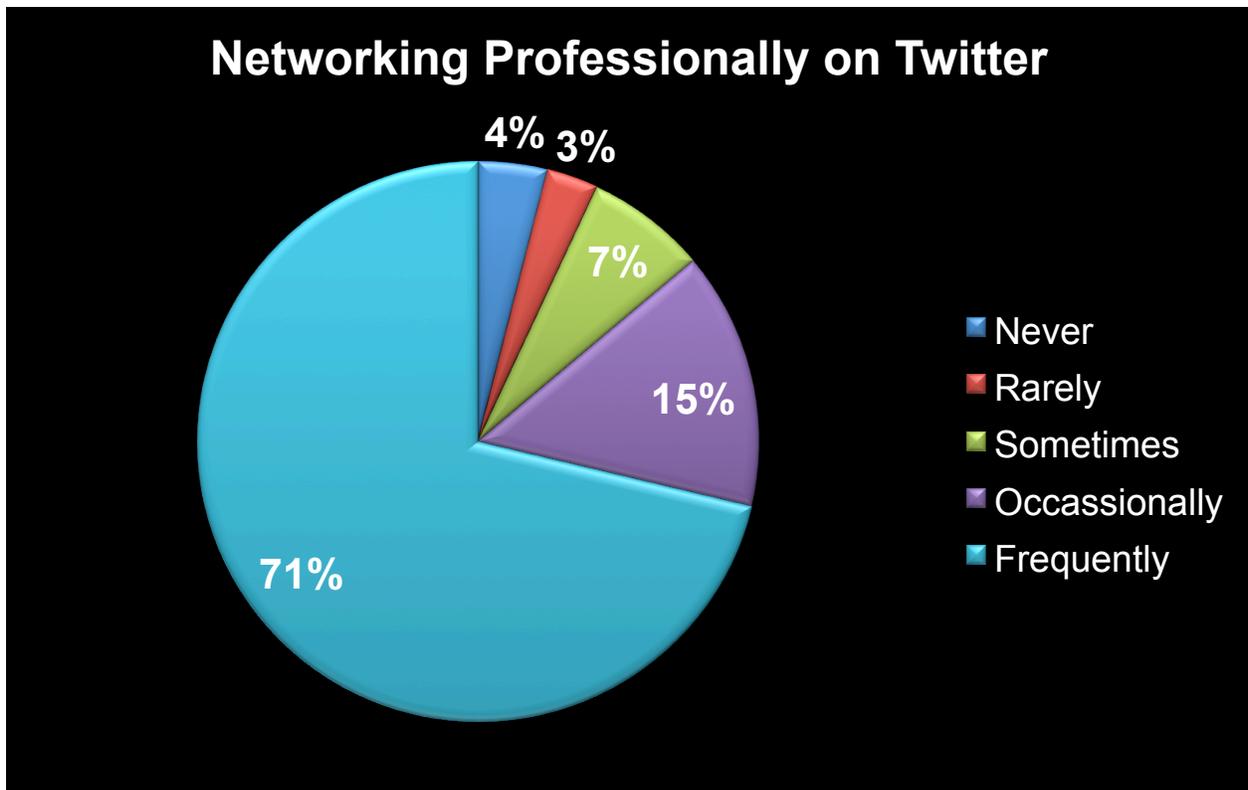
While looking at basic uses of Twitter in an effort to rule out mundane activities and find support for uses associated with professional development, the research tool looked specifically at the professional uses of Twitter. The scale used was: Frequently, Occasionally, Sometimes, Rarely, and Never. In relation to time frames, Frequently equaled once a day to several times a week, Occasionally equaled once a week, Sometimes equaled once every couple of weeks to once a month, and Rarely equaled once every couple of months. The quality of “Never” meant that at no point in time had the respondent used Twitter for the professional activity listed.

Participants were asked how frequently they used Twitter to collaborate with other colleagues in education (see Figure 11).



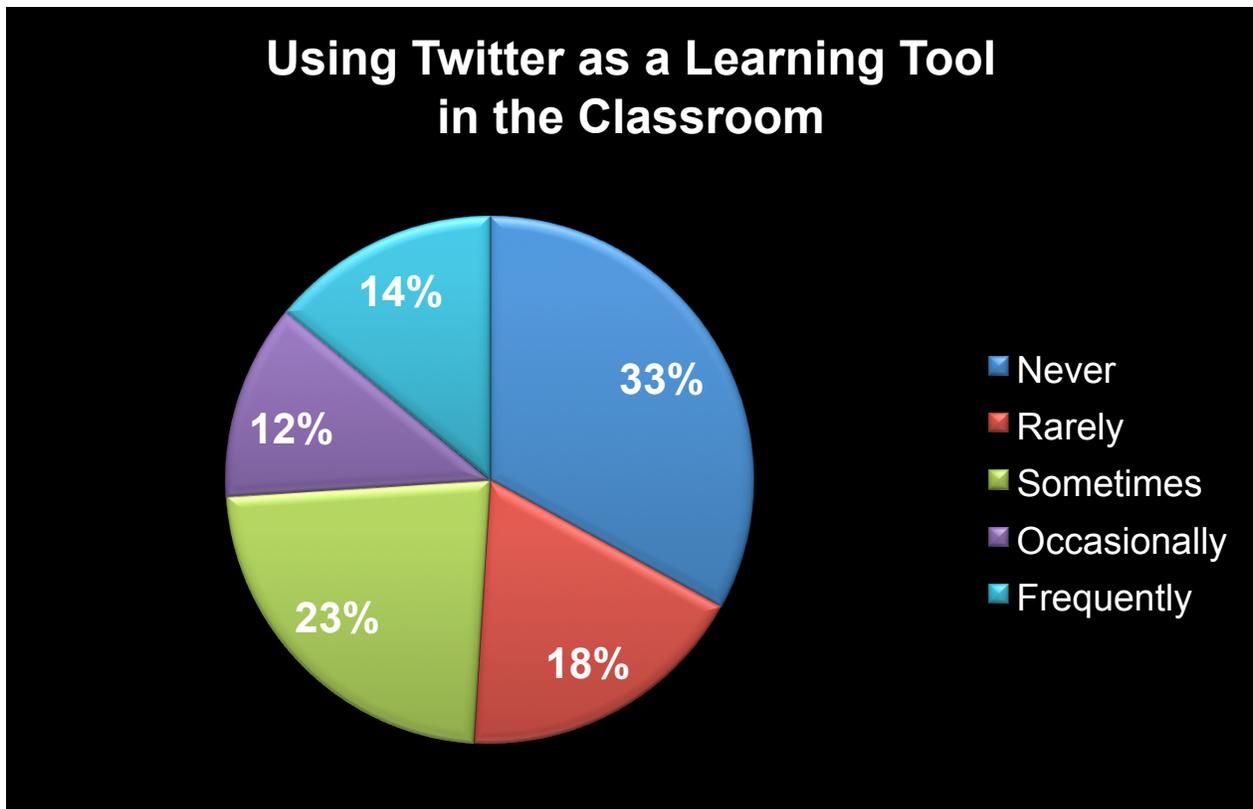
*Figure 11.* Frequency of collaborating professionally on Twitter. This figure illustrates that the majority of respondents use Twitter to collaborate professionally at least once a day to several times a week. The majority of respondents, a total of 90 individuals or 56%, indicated that they frequently use Twitter to collaborate professionally, and an additional 20% of participants indicated that they occasionally use Twitter to collaborate professionally. Only 5 individuals responded that they never use Twitter to collaborate professionally. The data indicates that educators are using Twitter to collaborate professionally multiple times a week.

The survey again looked at PLNs, but in this section, the professional uses of the PLN were addressed. Subjects were asked how frequently they use Twitter to network with colleagues (see Figure 12).



*Figure 12.* Frequency of networking professionally on Twitter. This figure illustrates that the educators who responded are networking professionally with colleagues at least once a day to several times a week. The majority, 115 individuals or 72% of the survey population, responded that they frequently use Twitter to network professionally. Only 4% of the survey population responded that they never use Twitter to network professionally with colleagues.

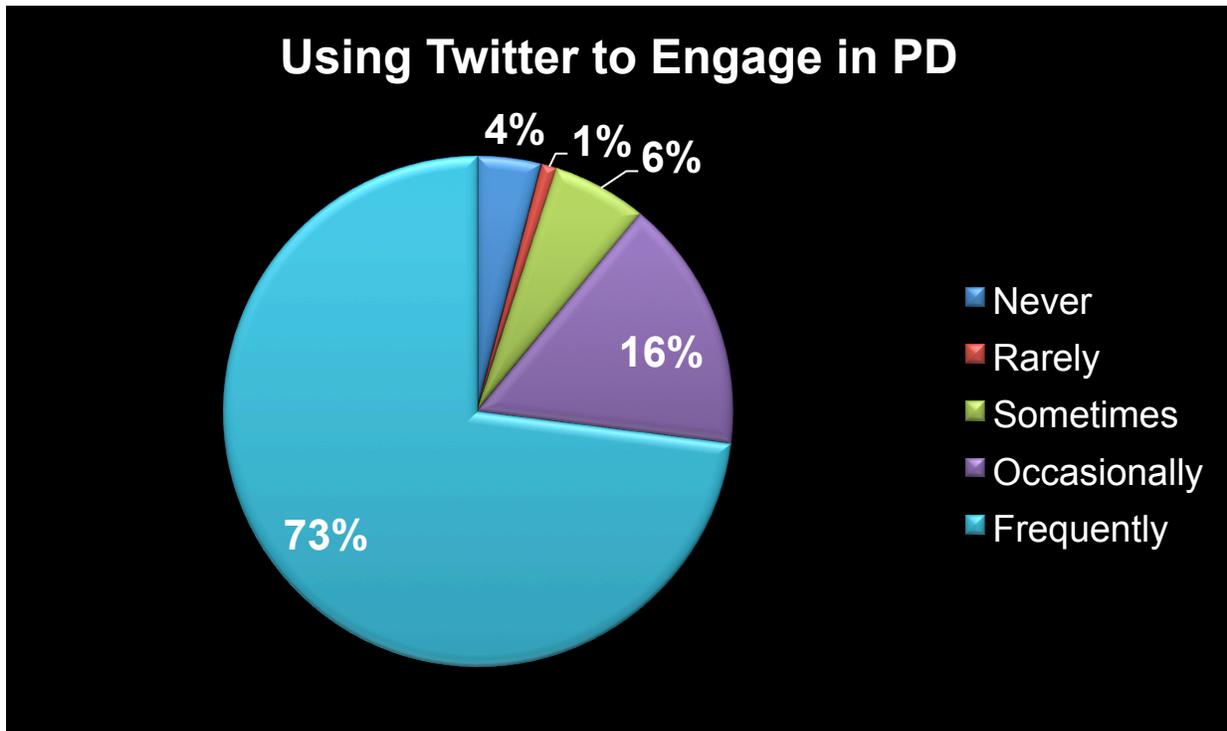
The research also looked at professional uses of Twitter for interacting with students in the classroom. Participants were asked how frequently they use Twitter to communicate with students and how frequently they use Twitter as a learning tool in the classroom. Both questions received mixed responses (see Figure 13).



*Figure 13.* Frequency of using Twitter as a learning tool in the classroom. This figure illustrates the wide array of responses from participants who use Twitter as a learning tool with students in the classroom. When using Twitter as a learning tool in the classroom for students, 33% of subjects responded that they never engage in this activity; however, 23% of participants responded that they sometimes use Twitter as a learning tool, a 10% difference. There are educators who are using Twitter as a learning tool as 26% of respondents indicated that they engage in this activity at least once a week to multiple times a week.

Professional use of Twitter to communicate with students produced clearer results than use of Twitter as a learning tool in the classroom. Forty-four percent of the population indicated that they never use Twitter in this capacity, and educators who rarely engaged in this activity totaled 21%. There were participants who professionally used Twitter for this activity. Thirteen percent frequently used Twitter to communicate with students.

The research instrument looked specifically at respondents' use of Twitter to participate in professional development (PD) (see Figure 14). The below illustrates the majority of respondents' who use Twitter to engage in professional development.



*Figure 14.* Frequency of using Twitter to engage in professional development. Results were clear as 73%, selected that they use Twitter for this goal frequently, and only 4% selected that they never use Twitter in this capacity

Interview responses shed greater light on the use of Twitter for PD. Responses centered around personalization, collaboration, and immediacy of information and resources. Participant A stated that "it meets my needs, anytime and anywhere, with deep thinking by smart people in the field", and Participant B enjoys the personalization because "it gives me PD that fills my needs." Participant C further explained the benefit of personalization:

Instead of seeking out conferences and attending endless hours of PD on a narrow topic from the perspective of one person, I can easily learn and discuss new ideas, new

initiatives, new practices, and new philosophies in a time that doesn't interview with my teaching or family.

Additionally, Participant D corroborated Participant C's response by explain that they "find things out for [themselves] rather than being sat in a lecture with presenters who do not follow the basic principles they are trying to teach me."

**Twitter for personalized professional development.** As with comments on personalization, respondents praised the use of Twitter for professional development because of collaboration opportunities. Respondent A explained that professional collaboration on Twitter "allows for networking and sharing ideas with people that I ordinarily wouldn't encounter – from all part of the world." Respondent B provided a specific example of their use of professional collaboration to enhance their classroom instruction:

I use Twitter daily to collaborate with other teachers on projects for my 7<sup>th</sup> grade [Language Arts] classes, to learn new way to motivate students to read more, to find quality young adult literature to read, to learn about new technology, and to reinforce ideas or to challenge ideas I've had.

**Twitter for collaborative professional development.** Respondent C used Twitter for professional collaboration because of a small school district: "I'm not just limited to the people in my school building for advice. I can be connected with people all over the country or world that are exploring ideas that I'm exploring." Respondent D provided a similar response to Respondent C but expanded that the collaboration "is an easy way to glean new ideas to reinvigorate teaching and learning."

**Twitter for immediate professional development** Information and resources and the speed at which these can be gathered garnered several responses from many subjects. Subject A

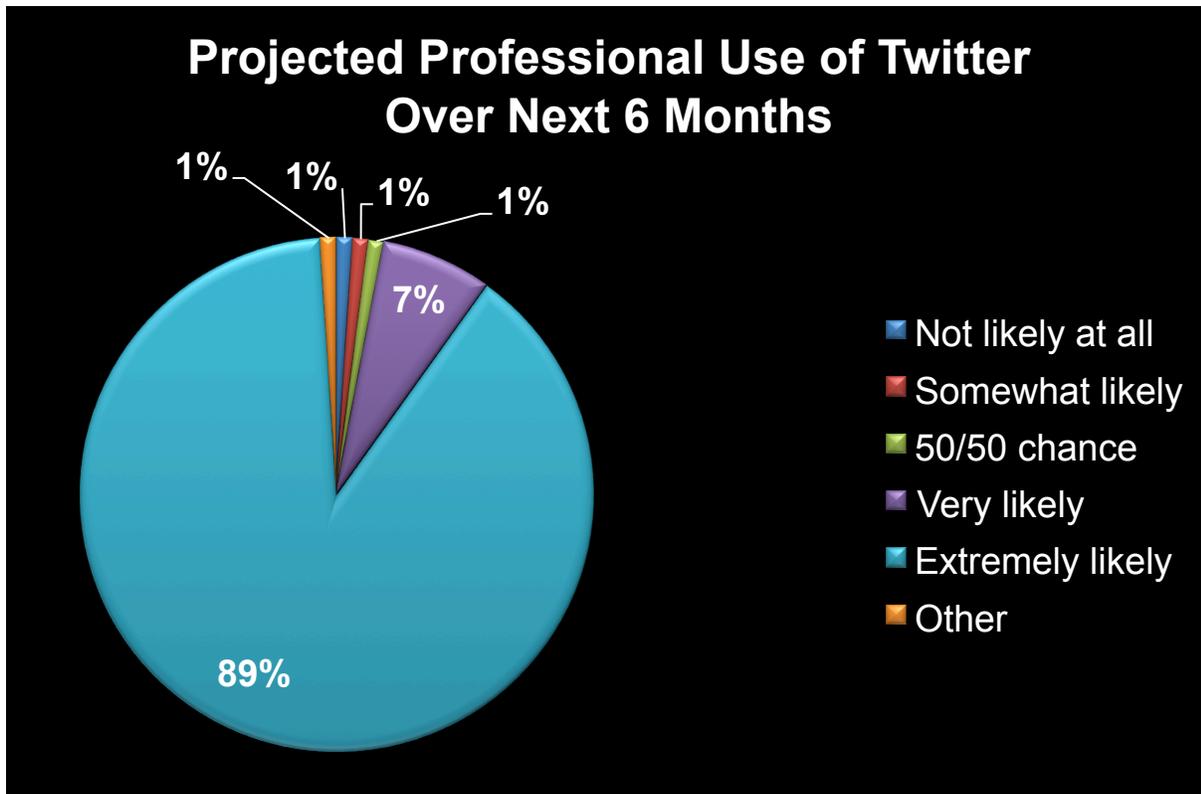
explained that Twitter is a “dynamic, responsive, and asynchronous resource.” Subject B’s statement agreed with Subject A but added that Twitter PD is “more up to date and relevant than any PD course I have ever been on.” Subject C’s statement added to the immediacy of the information and professional development as they used “Twitter [because] it is ‘ahead’ and visionary, so I get in contact with the most progressive and influencing teachers of my country.” Subject D admitted that they were “a bit skeptical at first” on using Twitter for PD, but their further explain indicates that they are converted to using Twitter for PD because it “provides a steady, succinct stream of curated sources for professional development.”

One participant succinctly summed up the reasons why educators who responded to the interview used Twitter for PD.

Because it offers a medium for connecting with others. For instance, I can track hashtags and get access to ideas and materials I’d not easily find in my school resource room. I can also use Twitter to enable other folk’s professional development – which I do by having a daily schedule of education-relevant Tweets from 3 a.m. to 11 p.m., Pacific Time. In this way, I hope to positively engage Twitter to enable other teachers’ professional development.

**Twitter’s future for professional development.** The survey looked briefly at future use. Subjects were asked how likely they were to use Twitter for professional purposes in the next six months. Respondents had a choice of extremely likely, very likely, 50/50 chance, somewhat likely, not likely at all, and other. The majority of respondents, 144 individuals or 90%, indicate that they are extremely likely to use Twitter professionally within the next six months (see Figure 15). Only one respondent selected other, but they did not specify the reason

for their selection. The data indicates that the majority of educators are currently using Twitter for professional purposes, and this activity will continue to occur.



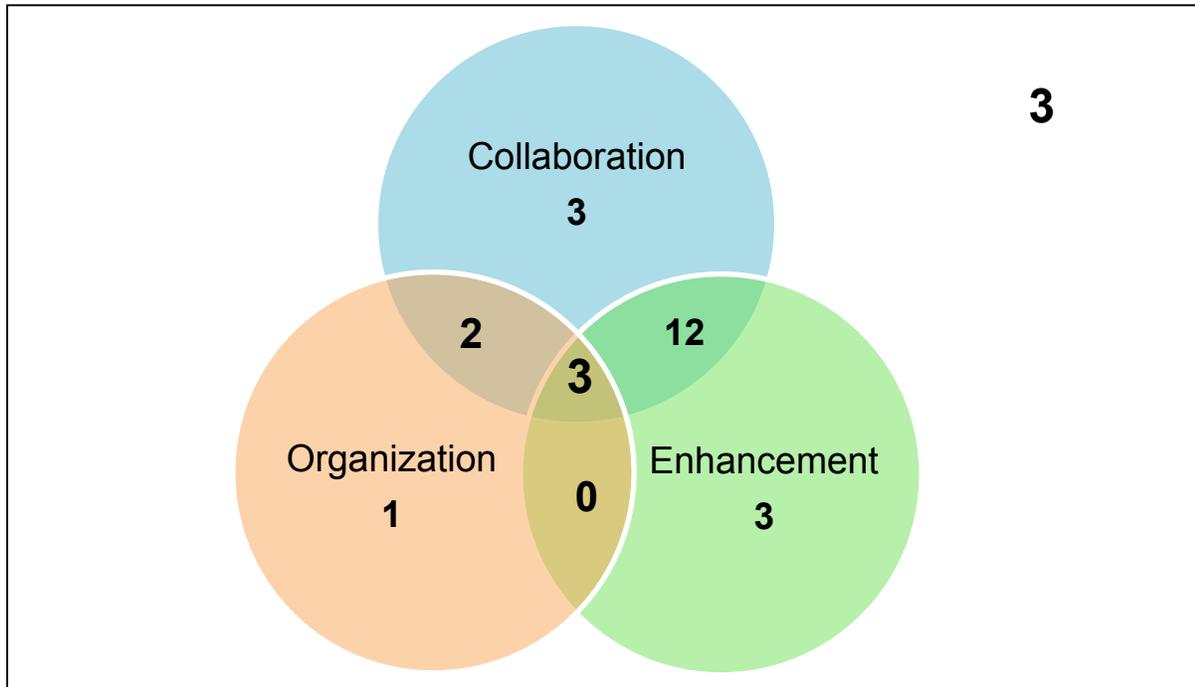
*Figure 15.* Projected professional use of Twitter over the next six months. This figure illustrates that 90% of respondents project that they are extremely likely to use Twitter for professionally purposes over the next six months.

Respondents were given an opportunity to respond personally if their preferred professional activity on Twitter was not listed. Participant A specified that they use Twitter to “connect with teachers around the world,” and Participant B used Twitter to “share information with colleagues and to commend colleagues on their achievements and good work.” Participant C summed up this concept of connecting through Twitter to “idea and resource gather.” A more specific comment from Participant D was geared specifically towards professional development (PD) as they use Twitter to “develop PD session ideas.” Research of education was another area

of professional use. Participant E used the “hashtags to research education topics,” and Participant F indicated that they use Twitter professionally to “keep up to date with research, both scientific and educational.” Other professional activities on Twitter included: job hunting, following Twitter chats, and education activism.

### **Learning Opportunities and Professional Development**

Twitter can be used as a backchannel for learning that happens in a nebulous atmosphere alongside traditional professional development. Thirty-two or 20% of the survey respondents elected to provide discussion responses. As part of the qualitative interview, subjects were asked to respond to whether or not they used Twitter as a backchannel to expand the learning opportunities happening at traditional professional development (see Figure 16). Collaboration responses focused on connecting with others and sharing of information, organization responses centered around the concept of note taking, and enhancement focused on reflection and additional learning opportunities alongside the professional development being offered.



*Figure 16.* Uses of Twitter as a backchannel for professional development. This figure illustrates the respondents' three common uses of Twitter as a backchannel for professional development. Of the 32 who responded: one participated strictly in organization, three participated strictly in collaboration, three participated strictly in enhancement, zero participated in organization and enhancement, two engaged in collaboration and organization, 12 engaged in collaboration and enhancement, and three participated in collaboration, organization, and enhancement. Three responses did not match any category and were removed from the figure's results. Subjects affirmed with an 84% majority their use of Twitter as a backchannel while 16% indicated that they did not use Twitter as a backchannel. Providing additional insight on using Twitter as a backchannel, respondents focused on three areas of benefit: collaboration, organization, and enhancement.

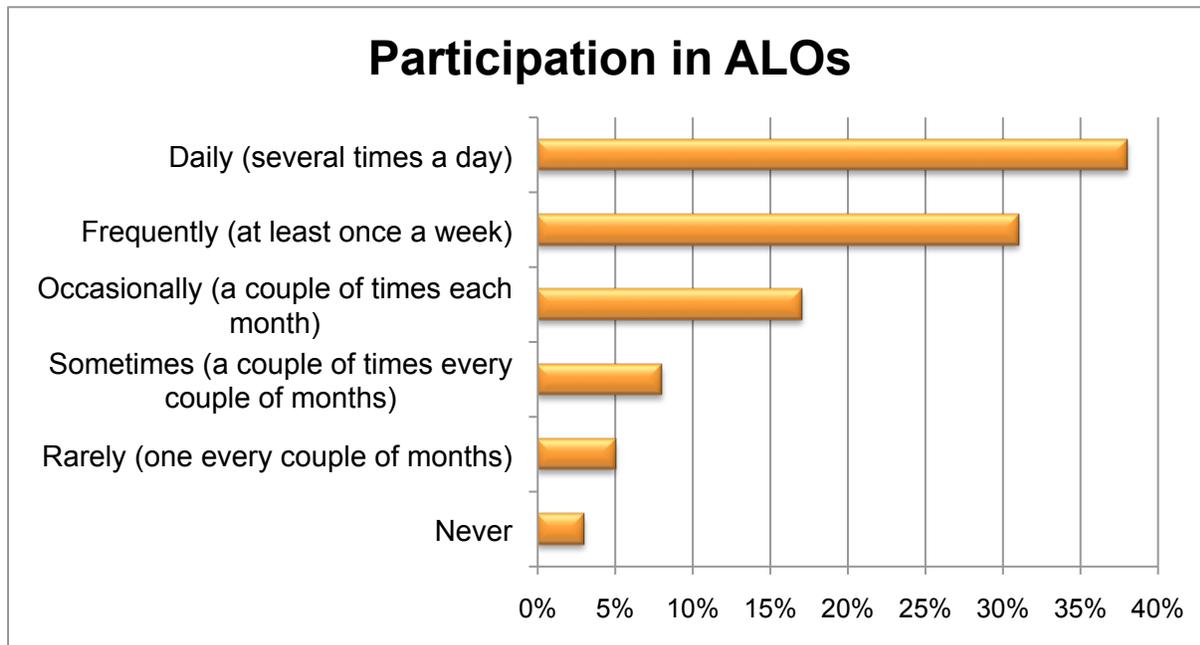
Respondent A discussed that using Twitter as a backchannel “extend[s] the discussion beyond just the people in the room [and] not only brings value to me but helps bring outside opinions into the traditional PD.” Respondent B used Twitter as a backchannel to “find specific

resources I can use in my classroom if the training is too general.” Respondent C used Twitter to take “notes for the PD that I share with my PLN – allows my notes to be interactive” which uses collaboration and organization to enhance learning. The use of Twitter as a backchannel provided Respondent D with “more personalized feedback” and Respondent E with a “great formative assessment check to see if I’m learning what I’m supposed to be learning.”

Respondent F provided a detailed explanation of why using Twitter as a backchannel to PD provides benefits of collaboration, organization, and enhancement:

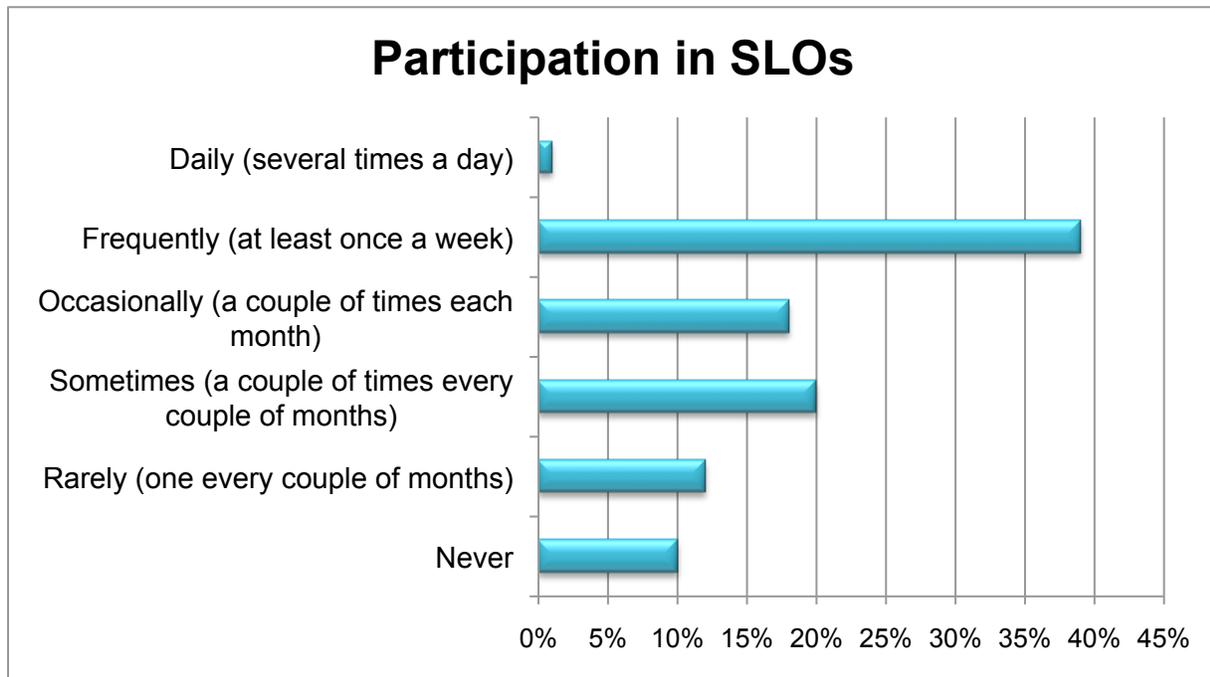
In a traditional setting, on a few people are able to question or comment, and I know that in a room full of educators there are many more discussion points and ideas to be shared than the time and space will allow for. Twitter helps to support and reinforce the learning in the PD by giving a place to share and discuss. Twitter seems to help things move forward as well so time isn’t hijacked by one or a few attendees with an agenda. It helps my time spent in PD to be more applicable and relevant.

With the exception of using Twitter as a back-channel to PD sessions, asynchronous and synchronous learning opportunities are the most direct line to professional development for educators. Asynchronous learning opportunities (ALOs) occur whenever the respondent has a desire for information and actively uses Twitter to seek out that information. Respondents were asked how frequently they participate in ALOs through the use of hashtags related to education (see Figure 17).



*Figure 17.* Frequency of participating in ALOs through education related hashtags. Results showed that 60 individuals, 38%, used Twitter daily and up to several times a day for ALOs, and 49 respondents, 31%, engaged frequently, at least once a week, in ALOs. Only four participants responded that they never participate in ALOs.

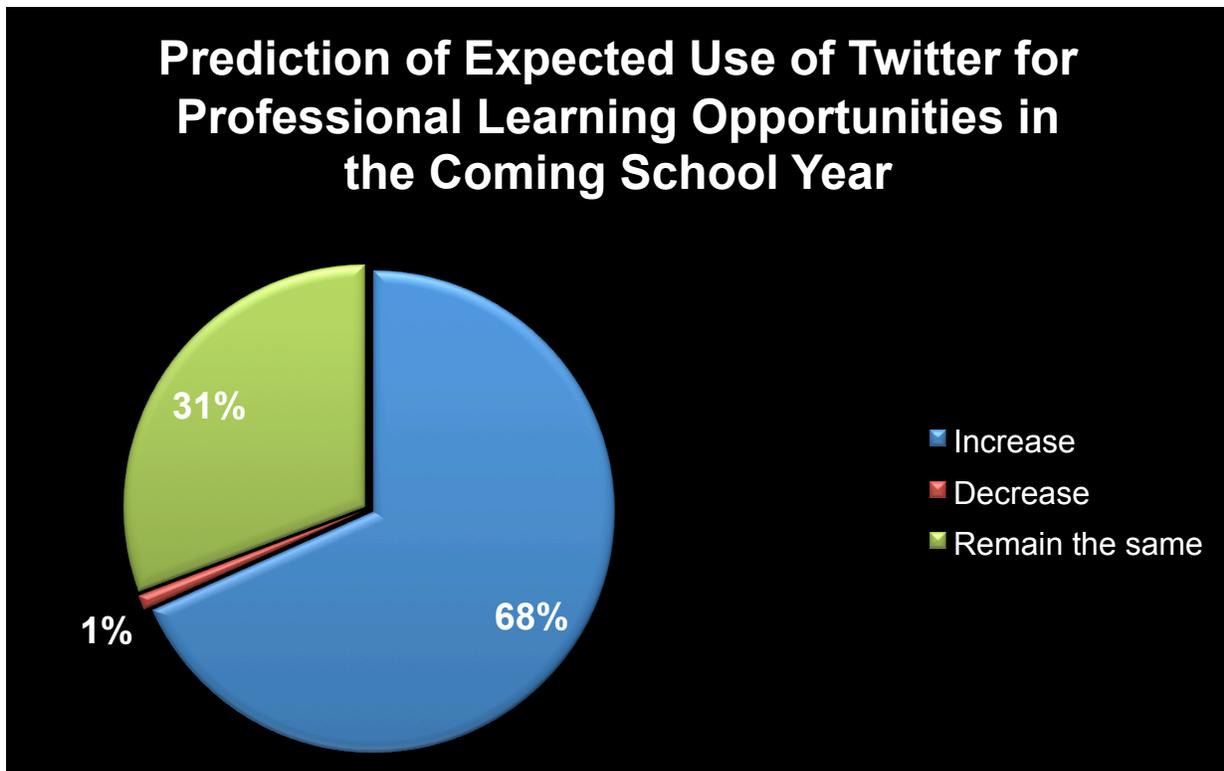
Synchronous learning opportunities (SLOs) occur at a specified time through a specified education related hashtag where educators from around the world have an opportunity to enter into a collaborative learning discussion. Subjects were asked how frequently they participated in SLOs through weekly chats related to education (see Figure 18). It should be noted that, participants could have participated in multiple SLOs on a single day as individual education related hashtags each have independent chats that can occur simultaneously as another chat. While the survey did not look specifically at the number of SLOs entered into, the total frequency of SLOs could be quite higher than the data originally indicated.



*Figure 18.* Frequency of participating in SLOs through weekly education related chats.

Participants responded that 62 individuals, 39% of the survey population, participated frequently, at least once a week, in SLOs, and 16 individuals, 10% of the population, never participated in SLOs. Two individuals selected “Daily” as their response.

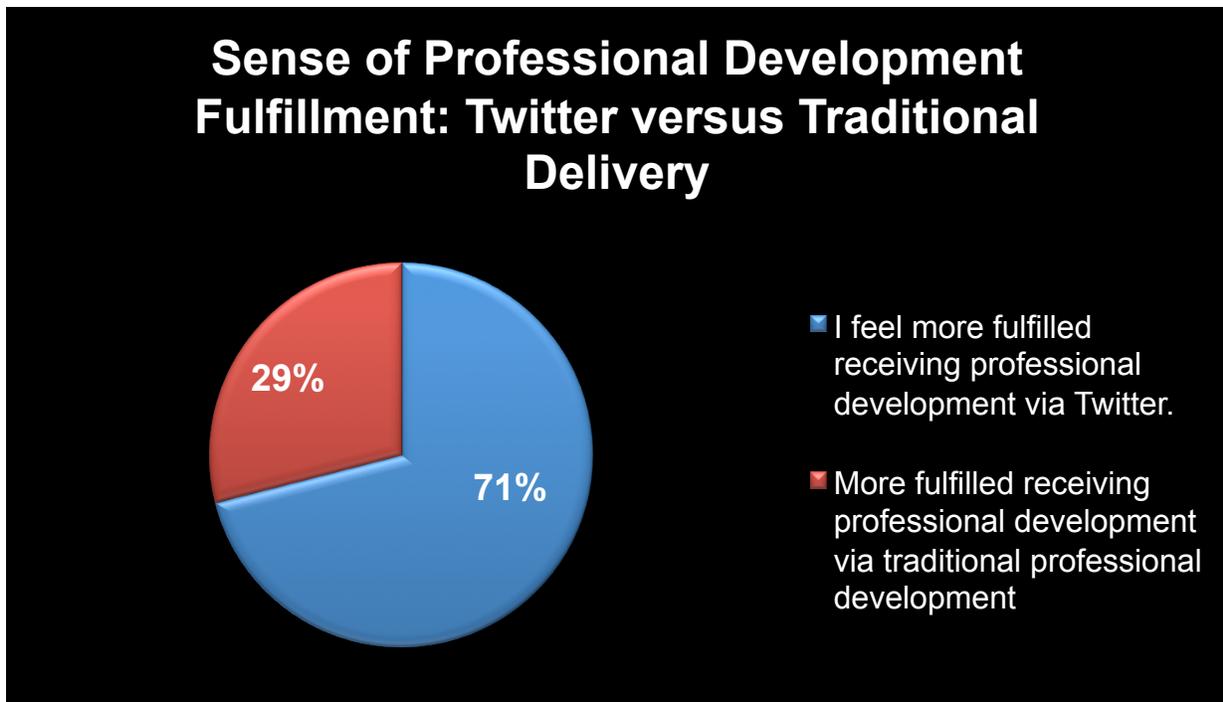
Subjects were asked to project their expectations for using Twitter for professional learning opportunities (PLOs) in the coming school year. Participants had the options of predicting an increase, a decrease, remain the same, or other (see Figure 19).



*Figure 19.* Prediction of expected use of Twitter for PLOs in the coming school year. The majority of educators, 110 or 69%, in the survey population indicated that they expect their use of Twitter for PLOs to increase. Forty-nine individuals or 30% of individuals expected their use to remain the same, and only one individual predicted a decrease in their use.

#### **Sense of Fulfillment: Twitter versus Traditional Professional Development**

Thirty-two subjects or 20% of the survey population, elected to participate in the interview questions. Interview subjects were asked to identify whether they felt more fulfilled receiving PD via Twitter or more fulfilled receiving traditional PD (see Figure 20).



*Figure 20.* Sense of professional development fulfillment: Twitter versus traditional delivery.

Of those who elected to respond, 71% felt more fulfilled receiving professional development via Twitter while 29% felt a greater sense of fulfillment receiving professional development via traditional delivery.

Discussion about feeling more fulfilled receiving PD via Twitter centered around anytime, anywhere, personalized learning. Subject A equated PD on Twitter to what students should receive in the classroom: “I get individualized feedback like teachers are supposed to give to students.” Subject B explained further that they feel fulfilled with PD via Twitter because “it is ongoing. There are many threads and individuals to follow and good ideas come from all sources. It doesn’t just happen on a Friday or Saturday but throughout each and every day.” Subject C commented on the fulfillment of PD via Twitter because they can “target [their] learning to what [they] are interested in and need. [They] can do it on [their own] time, on a

need to know or act basis.” Subject D’s response explained in detail why they feel more fulfilled receiving PD via Twitter:

I feel we have more opportunities to interact with one another via Twitter than we can in a meeting. Also, I like being able to go back and see discussions via Twitter to help me to retain what I have learned. I am much more likely to revisit a Twitter discussion to remember my training and ideas than I am to look for the power point note packet I am handed at a meeting. Twitter provides an opportunity for me to connect the learning back to me and my students and to engage with other educators who may be applying it in the same way.

Participants who felt more fulfilled receiving PD via traditional professional development cited that they enjoy the act of having a face-to-face conversation with others. Participant A explained that “there are times where I think it is important to have face-to-face PD. You learn more from others when you are interacting and doing hands on activities.” Participant B’s response aligned with Participant A’s:

Traditional professional development gives you face-to-face time beyond 140 characters to actually dig deep into a subject and connect with others on a personal level.

Traditional professional development makes for more efficient visual and natural communication and conversation.

A selection of subjects selected that they felt fulfilled receiving Twitter via PD but provided discussion about why they also felt fulfilled receiving PD traditionally. Subject A explained:

I believe [traditional professional development] is also a viable way to go, and I do attend traditional professional learning. This is especially effective with my peers as we can

collaborate and learn from and with one another. This is essentially what is done on Twitter during chats, but the peers are from all over the world. You can gain an International perspective this way.

Subject B's response further illuminated why they felt fulfilled receiving PD through both modes:

There is always something to face-to-face professional development and collaboration that should never be left out of expanding a teacher's knowledge. I just hope that as the shift to making class time more productive for our students, this will result in more productive professional development than the traditional sit and get style.

## Chapter 5: Discussion

### Summary of Findings

Are educators turning to Twitter to create, use, and manage professional learning networks (PLNs) for professional development? The data collected indicate that educators are creating PLNs, and it is through the use and management of these PLNs that educators are engaging in professional development. Survey responses from 160 educators, all accessed through education related hashtags, which are used specifically to facilitate education related discussion, showed that 94% are actively using Twitter to engage with their PLNs in professional learning. The frequency of the types of posts made on Twitter adds to the body of evidence to support the finding that educators are using Twitter to create, use, and manage PLNs for professional development.

Is online professional development facilitated by Twitter more fulfilling than traditional professional development? The data from the 32 educators in interview population provided an understanding that educators feel more fulfilled receiving professional development via Twitter. Detailed interview responses further clarified in what ways and why educators are feeling more fulfilled receiving professional development via Twitter. Twitter provided anytime, anywhere, personalized learning opportunities that met the needs of educators more so than traditional professional development.

While not specifically studied, Twitter is being used for self-directed professional development. The frequency of posting and various uses for professional purposes provide indication that educators are engaging in self-directed learning on Twitter. Additionally, the types of content educators are viewing indicate that their focus is on education and technology related topics or topics relevant to their content area.

**Interpretation**

The educators using Twitter for professional development is not limited to a certain age group, and, in fact, the more experienced educator is using Twitter for professional learning more than their less experienced colleagues. Less experienced and younger educators are using Twitter for professional development, but the number of participants fitting this category in this study may be implications of teacher preparation programs inhibiting or blaspheming the use of social media.

High school classroom teachers are leading the professional use of Twitter. All other roles and campus levels are active in using Twitter professionally, but the data indicate that the secondary classroom teacher may either have more freedom in their use of social media or may be looking for additional source of relevant and effective professional development. Also, while the majority of respondents came from the United States, educators across the world responded. Global educators' use of Twitter for professional development implies that a vast and unlimited reservoir of information, resources, and collaboration is available.

The marked difference in frequency between those interactions that happen to an open, global audience (reply, retweet, and Tweet) and those interactions that happen in private or semi-private, restricted spaces (mention, direct message, and list) indicate that conversations, learning, and sharing are happening on an open and global scale. The frequency of posting on Twitter indicates that educators are continually seeking out information and interaction, and they are creating content or extending learning conversations. The data indicates that while educators are viewing other types of content, the area of activity that occupies the majority of what they are viewing relates to education and technology. Along with uses of Twitter to share and receive information and resources, maintain and establish a professional learning network, and seek out

support and encouragement, the educators' general uses of Twitter distinctly imply a tendency towards professional capacity.

Professional uses of Twitter imply that educators are actively collaborating and networking with colleagues locally and globally. Educators who use Twitter are seeking a positive support network and positive feedback for encouragement instead of an opportunity to receive sympathy about perceived negatives in their position. Educators are also engaging in ongoing professional development through anytime, anywhere learning opportunities. Educators are participating frequently in asynchronous and synchronous learning opportunities. The data indicate that when it comes to attendance at traditional professional development events educators prefer and feel more fulfilled if they can interact via Twitter. Educators' preferred methods of use of Twitter over traditional professional development includes a backchannel for enhanced and extended learning opportunities or participation in professional development solely through Twitter. Implications of the data indicate that educators' use of Twitter for professional development will increase in the near future.

### **Implications for Future Research**

While this study examined the use of Twitter in creating professional learning networks for professional development, the body of information that exists on this subject is limited. Additional research is needed in the area of Twitter and professional development. Replications of this study are needed where a much larger population of educators are surveyed and interviewed on their uses of Twitter for professional development. Future research could be centered on: Are educators engaging in self-directed professional development? What types of self-directed professional development are educators are engaging in? What education related hashtags on Twitter do educators use the most for self-directed professional development? What

other modes of social networking are educators using for self-directed professional development?

Future research could also focus specifically on whether Twitter or social networking affects educator morale. Possible research questions could be: Are educators using Twitter as a support network? What types of encouragement are educators seeking? Do the connections made through Twitter have a positive or a negative effect on educator morale? What other modes of social networking are educators using to receive support and encouragement?

Additional research could focus on specific schools that use Twitter as an extension of learning networks and professional development through district created hashtags. Questions for research might be: Are school districts using hashtags to create learning networks among staff at all campuses? Are these district hashtags being used for professional development? How else are district hashtags being used to education related purposes? What type of growth has the district seen in professional development participation, learning exchanges, and staff collaboration? If the district is using hashtags and professional learning is taking place, how is the educator's learning translating to student success?

While not focused on Twitter or social networking, further research should be conducted on educators needs related to professional development. Probable research questions could be: Are educators dissatisfied with traditional delivery methods of professional development? Why are educators dissatisfied with traditional delivery methods of professional development? How can professional development become more effective? How can social networking increase the effectiveness of professional development? What blended methods of professional development are most effective? Are these blended methods of professional development using social networking?

**Recommendations**

The data from this study indicate that educators are already using, beginning to use, or want to use Twitter to form learning networks for professional development. While additional research is needed, the findings of this research recommend the inclusion of education related activity on Twitter into the definition of professional development.

As an extension of the inclusion of Twitter into the definition of professional development, training for educators on the use of Twitter for professional learning is needed within schools. A recommendation for administrators is to create district hashtags for on-campus professional learning opportunities. Another recommendation for district administrators would be allowing the opportunity for educators to use Twitter as a viable means for on-campus professional development instead of attending lengthy staff meetings.

A recommendation for the alteration of traditional professional development is also warranted. The data from the study, specifically the interview responses, indicate the need for professional development that integrates anytime, anywhere, personalized learning and learning networks.

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## Appendix A

### Research Cover Letter

**Sam Houston State University**  
**Cover Letter for Participation in Research**  
***The Use of Twitter in the Self-Directed Creation of***  
***Educational Professional Learning Opportunities***

#### **Why am I being asked?**

You are being asked to be a participant in a research study about the use of the social media application, Twitter, in the self-directed creation of educational professional learning networks and its use in attaining professional development conducted by Carrie Ross, Curriculum and Instruction graduate student at Sam Houston State University and insert names of any other cooperating institutions. You have been asked to participate in the research because your use of Twitter education related hashtags and interaction in online professional learning networks and may be eligible to participate. We ask that you read this form and ask any questions you may have before agreeing to be in the research.

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with Sam Houston State University. If you decide to participate, you are free to withdraw at any time without affecting that relationship.

#### **Why is this research being done?**

The way humans are learning is changing – for students and for teachers. If teachers expect to implement 21<sup>st</sup>-century learning into the classrooms in order to prepare students to succeed in today's globally connected and emergent world, they need to develop their own expertise with new learning technologies. Professional development today is the main pathway to improving student learning and to increasing job satisfaction. Recent trends in education and education financing for schools has put constraints on schools and districts in terms of the professional development opportunities and resources being offered and made available. Educators face this growing scarcity of relevant and poignant professional development, those seeking growth and those responsible for providing professional development are forced to explore other avenues of adult teacher learning through technology and social media.

**What is the purpose of this research?**

The purpose of this research is to determine whether there is a strong correlation between those who engage in the self-directed creation of professional learning networks for professional development and those who find and experience greater satisfaction, learning, and application of knowledge gained in professional development opportunities.

**What procedures are involved?**

If you agree to be in this research, we would ask you to do the following things:

Participants will be asked through a Tweet to respond to a Likert scale survey seeking demographical information, average time use of Twitter, average uses for Twitter, professional development uses for Twitter, what PLNs actively engaged in, and satisfaction of professional growth and PLNs. Additionally, 140-character Tweets will be sent out asking interview-based questions gathering further information on uses of Twitter for professional growth, satisfaction of knowledge attained, benefits of using social media for professional growth, and uses and satisfaction of PLNs.

**What are the potential risks and discomforts?**

There are no known potential risks and discomforts associated with the survey and interview questions.

**Are there benefits to taking part in the research?**

Benefits to participating in the research are helping contribute to the body of knowledge regarding Twitter and social media for educational purposes and to shed positive light on both self-directed professional development and social media as a means to professional and personal satisfaction and growth.

**What about privacy and confidentiality?**

The only people who will know that you are a research participant are members of the research team. No information about you, or provided by you during the research will be disclosed to others without your written permission, except:

- if necessary to protect your rights or welfare (for example, if you are injured and need emergency care or when the SHSU Protection of Human Subjects monitors the research or consent process); or
- if required by law.

When the results of the research are published or discussed in conferences, no information will be included that would reveal your identity. If photographs, videos, or

audiotape recordings of you will be used for educational purposes, your identity will be protected or disguised.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law.

### **What if I am injured as a result of my participation?**

In the event of injury related to this research study, you should contact your physician or the University Health Center. However, you or your third party payer, if any, will be responsible for payment of this treatment. There is no compensation and/or payment for medical treatment from Sam Houston State University for any injury you have from participating in this research, except as may be required of the University by law. If you feel you have been injured, you may contact the researcher, Carrie Ross at (512)731-0081.

### **What are the costs for participating in this research?**

There are no associated costs with participating in this research.

*Can I withdraw or be removed from the study?*

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

### **Who should I contact if I have questions?**

**The researchers conducting this study are Carrie Ross. You may ask any questions you have now. If you have questions later, you may contact the researchers at: Carrie Ross (512) 731-0081 and/or Samuel Sullivan (936) 294-1126**

### **What are my rights as a research subject?**

If you feel you have not been treated according to the descriptions in this form, or you have any questions about your rights as a research participant, you may call the Office of Research and Sponsored Programs – Sharla Miles at 936-294-4875 or e-mail ORSP at [sharla\\_miles@shsu.edu](mailto:sharla_miles@shsu.edu).

You may choose not to participate or to stop your participation in this research at any time. Your decision whether or not to participate will not affect your current or future relations with the University. You will not be offered or receive any special consideration if you participate in this research.

*Agreement to Participate*

I have read (*or someone has read to me*) the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. I agree to participate in this research. By proceeding to the survey, you certify that you are of 18 years of age or older.

**Consent:** I have read and understand the above information, and I willingly consent to participate in this study. I understand that if I should have any questions about my rights as a research subject, I can contact Carrie Ross at (512) 731-0081 or by email at [crr035@shsu.edu](mailto:crr035@shsu.edu). I have received a copy of this consent form.

Your name (printed): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix B

### Survey Questionnaire

# Twitter and Professional Development

The information gathered from this survey will be used to fulfill the requirements for a Master's of Education in Curriculum and Instruction from Sam Houston State University. The research is designed to measure the use of Twitter in the self-directed creation of an educational professional learning network for professional development purposes of persons in an education related field or position. No responses will be shared on an individual basis. Results will be compiled and then reviewed by the researcher only. The survey should take approximately 15 minutes to complete. Please answer honestly.

**\* Required**

**Age \***

**Gender \***

- Male
- Female
- Prefer not to answer
- Other:

**Location \***

**Years of Experience in an Education Related Field \***

- 0 (Pre-service)
- 1-5
- 6-10
- 11-15
- 16-20
- 21-24
- 25+

**What is your educational background? \***

**If you selected "other" to the above question, please specify your educational qualifications.**

What is your role in education? \*

If you selected "other" to the above question, please specify you role in education.

If you selected Pre-Service Teacher, Teacher, or Administrator as your role in education, please select the appropriate grade level.

This question is not required.

- Head Start or Pre-Kindergarten
- Elementary (Grades K-4th)
- Intermediate (Grade 5-6)
- Junior High (Grades 7-8)
- High School (Grades 9-12)
- Other:

Do you serve in a leadership capacity in your district or on your campus?

This question is not required.

- Superintendent
- Program Director
- Principal
- Assistant/Associate Principal
- Grade Level Leader
- Department Chair
- Other:

Do you use Twitter? \*

- Yes, I view and post Tweets.
- Yes, I only view Tweets.
- Yes I have used it, but I have stopped using it.
- No, I have not used it before.

How often do you post on Twitter? \*

- Never, I don't use Twitter
- Less than once a month
- At least once a month

- At least once a week
- At least once a day
- Several times a day

**Frequency of Posting on Twitter \***

	Never	Less than once a month	At least once a month	At least once a week	A least once a day	Several times a day
Tweets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Retweets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Replies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Messages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**How do you access Twitter? \***

Check all that apply

- Website
- Smart Phone
- Tablet Device
- Other:

**What types of content do you view on Twitter? (select as many as apply) \***

- Arts & Humanities
- Business
- Culture and Groups
- Entertainment
- Education
- Fashion
- Finance
- Health
- History

- Local News
- World News
- Literature
- Music
- Personal Updates
- Politics
- Religion
- Sports
- Technology
- Travel
- Weather
- Other:

Rate the reasons why you use Twitter. \*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
It is easy to use	<input type="radio"/>				
It is easy to learn	<input type="radio"/>				
It is easy to communicate with friends and/or relatives	<input type="radio"/>				
It is more convenient to interact with others	<input type="radio"/>				
It can save time in sharing information	<input type="radio"/>				
It can save time in retrieving	<input type="radio"/>				

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
information					
It is free of charge	<input type="radio"/>				
It can save time in keeping in touch with friends and/or relatives	<input type="radio"/>				
It could lead to tangible or intangible benefits	<input type="radio"/>				
It helps me to maintain and establish my social network	<input type="radio"/>				
It helps me to maintain and establish my professional learning network	<input type="radio"/>				
It helps me to find out what my friends and/or relatives are doing	<input type="radio"/>				
It helps me to find new friends	<input type="radio"/>				
It helps me to grow my professional learning	<input type="radio"/>				

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
network					
It helps me to build trust	<input type="radio"/>				
I feel good as I am able to share information	<input type="radio"/>				
I am delighting upon receiving information	<input type="radio"/>				
I can get encouragement from others	<input type="radio"/>				
I can get sympathy from others	<input type="radio"/>				
I feel a sense of belonging	<input type="radio"/>				

**How likely are you to use Twitter professionally within the next six months? \***

- Not likely at all
- Somewhat likely
- 50/50 chance
- Very likely
- Extremely likely
- Other:

**How frequently do you use Twitter for the following professional activities? \***

	Never	Rarely	Sometimes	Occasionally	Frequently
To collaborate with colleagues	<input type="radio"/>				

	Never	Rarely	Sometimes	Occasionally	Frequently
To network with colleagues	<input type="radio"/>				
To communicate with students	<input type="radio"/>				
As a learning tool in the classroom	<input type="radio"/>				
To participate in professional development	<input type="radio"/>				

**If you use Twitter professionally for an activity not listed, please specify the activity.**

**How frequently do you participate in a synchronous learning opportunity through weekly chats related to education? \***

Synchronous means that you are actively following along at the "chat's" specified time on the specified day.

- Never
- Rarely (one every couple of months)
- Sometimes (a couple of times every couple of months)
- Occasionally (a couple of times each month)
- Frequently (at least once a week)
- Other:

**How frequently do you participate in an asynchronous learning opportunity through the use of hashtags related to education? \***

Asynchronous means that you are following the education hashtag and participating in learning on your own time.

- Never
- Rarely (one every couple of months)
- Sometimes (a couple of times every couple of months)
- Occasionally (a couple of times each month)
- Frequently (at least once a week)

- Daily (several times a day)
- Other:

In the coming school year, do you expect your use of Twitter to most likely: \*

- Increase
- Decrease
- Remain the same
- Other:

If you would like to be contacted for additional interview questions, please provide your Twitter username.

Never submit passwords through Google Forms.

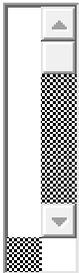
## Appendix C

### Interview Questionnaire

# Twitter and Professional Development Interview

The information gathered from this interview will be used to fulfill the requirements for a Master's of Education in Curriculum and Instruction from Sam Houston State University. The research is designed to measure the use of Twitter in the self-directed creation of an educational professional learning network for professional development purposes of persons in an education related field or position. No responses will be shared on an individual basis. Results will be compiled and then reviewed by the researcher only. The interview should take approximately 15 minutes to complete. Please answer honestly.

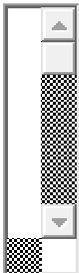
#### Why do you use Twitter for professional development?



#### When you attend traditional professional development, are you using Twitter as a back-channel to expand your learning?

- Yes
- No

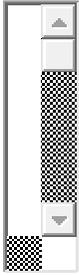
#### If you are using Twitter as a back-channel, why are you using it to expand your learning?



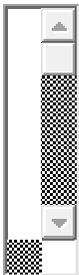
#### Do you feel more fulfilled receiving professional development via Twitter or more fulfilled receiving professional development via traditional professional development?

- I feel more fulfilled receiving professional development via Twitter.
- More fulfilled receiving professional development via traditional professional development

**If you feel more fulfilled receiving professional development received via Twitter, please explain why.**



**If you feel more fulfilled receiving professional development via traditional professional development, please explain why.**



Never submit passwords through Google Forms.

### Appendix D

## CITI Collaborative Institutional Training Initiative SHSU Human Subjects Curriculum Completion Report Printed on 4/6/2013

Learner: Carrie Ross (username: crross15)  
 Institution: Sam Houston State University  
 Contact Information 2501 Lake Road #145  
 Huntsville, TX 77340  
 Department: Curriculum and Instruction  
 Phone: (512)731-0081  
 Email: crr035@shsu.edu

Elective Modules	Date Completed	Score
Introduction to the Responsible Conduct of Research	12/06/12	no quiz
Research Misconduct 1-1215	12/06/12	5/5 (100%)
Data Acquisition, Management, Sharing and Ownership 1-1308	12/06/12	5/5 (100%)
Mentor and Trainee Responsibilities 01234-1250	12/06/12	5/5 (100%)
Conflicts of Interest and Commitment 1-1622	12/06/12	6/6 (100%)
Collaborative Research 1-1450	12/06/12	5/5 (100%)
Human Subjects 13566	12/06/12	4/5 (80%)
The CITI RCR Course Completion Page	12/06/12	no quiz
Sam Houston State University	12/06/12	no quiz

SHSU Human Subjects:

Stage 1. RCR Passed on 12/06/12 (Ref # 9127232)

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.  
 Professor, University of Miami  
 Director Office of Research Education  
 CITI Course Coordinator

**Appendix E****Approval Notice  
Initial Review**

February 4, 2013

Carrie Ross

Huntsville TX 77341

RE: Protocol # 2013-01-4783

The Use of Social Media Applications in the Self-Directed Creation of Educational Professional Learning Networks

Dear Ms. Ross,

Your Initial Review submission was reviewed and approved under Expedited procedures by the SHSU PHSC-IRB on 4-Feb-2013.

Please note the following information about your approved research protocol:

This is approved-expedited, with the condition that a statement be included in the consent form that participants must be 18 years of age or older, and that by giving their consent to participate, they are certifying that they are 18 years of age or older.

Protocol Approval period: 4-Feb-2013 – 4-Feb-2014 \*\*\*

\*\*\*You will be required to apply for an extension at least one month before your IRB approval is scheduled to expire. Therefore, you will need to submit a Continuing Review form at least by **[January 4, 2013]**. \*\*\*

Please remember to use your protocol number (2013-01-4783) on any documents or correspondence with the IRB concerning your research protocol.

Please note that the IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the IRB office at (936) 294-4875.

Reviewer: Donna Desforges~