Teacher's Twitter Levels of Participation and Depth of Reflection on Pedagogical Practices

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Abstract

Teachers need to be connected to other teachers for their professional development and some do this through social media sharing that can be seen through educational hashtags across Twitter. Teachers from different cultural experiences, states, and countries communicate and reflect on educational topics. The purpose of this study was to explore how nine K-12 teachers' levels of participation on Twitter influenced their reflection on pedagogical practices. The conceptual framework was based on a depth of reflection model and Fischer's richer ecologies of participation model. The data were collected from interviews, reflective journals, and teachers' Tweets. Then, two levels of coding (a priori coding and emergent codes) were applied to analyze the data collected. The results showed how teachers participated on Twitter and the different levels of participation. The levels of participation included the following teachers' roles: lurkers, contributors, consumers, curators, meta-designers, or moderators. The teachers' Tweets about building professional identity, exchanging ideas, learning new skills, and professional connectedness were also described and analyzed. Teachers' connectedness on Twitter showed a depth of reflection among the following levels: critical reflection, reflection, understanding, and non-reflective/ descriptive. The study can help districts and school administrators to evaluate the power of teachers' tweets on social media as a tool for personal growth, professional engagement, and learning.

Keywords: Twitter, Teachers, Reflection

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Introduction

Teachers are part of a profession that participates actively in a variety of professional developments (PD). The teachers' learning process can be seen by their use of technology in education, digital literacy skills, and social media. Some studies showed how Twitter could become an opportunity for teachers to interact, communicate, and collaborate (Akella, 2014; Rosenberg et al., 2017; Ross et al., 2015; Tan & Hew, 2017). In this case study, the purpose was to explore how 9 K-12 teachers' levels of participation on Twitter influence teachers' reflections about teaching practices. There was a gap in the literature about the relationship between teachers' levels of participation and depth of reflection. Teachers' experience on Twitter has been researched from different perspectives, including collaboration, communication, personal learning networks, and sharing resources, among others (Britt & Paulus, 2016; Carpenter & Krutka, 2014; Carpenter & Krutka, 2015; Noble et al., 2016). Also, time for reflection (Fernandez Campbell, 2018) and feelings of isolation can impact teachers during their careers (Davidson & Dwyer, 2014; Hartman, 2017). The use of Twitter by educators can have a positive impact that allows them to share and connect with other teachers from different countries or states (Carpenter & Krutka, 2015).

Research Questions

- In what professional activities do teachers participate on Twitter?
- How do teachers use Twitter to help them reflect on pedagogical practices?

The conceptual framework included two models Depth of Reflection (DoR) (Kember et al., 2008; Harland & Wondra, 2011) and Fischer's (2011) Ecologies of Participation (EP).

Depth of Reflection (DoR)

Reflection is a valuable experience that teachers can benefit from and can allow them to transform their perspective on teaching and learning. When teachers reflect on their daily work, lesson plan, or activities in class can bring a new dimension to the teaching experience. The four levels of reflection included were nonreflection, understanding, reflection, and critical reflection (Kember et al., 2018; Harland & Wondra, 2011). The levels of reflection were related to the engagement on Twitter chats. For example, nonreflection can be related to a teacher that retweets a Tweet. The level of understanding was when the teacher could add a link or share a resource. In reflection, the Tweet relates to the teachers' personal experience, and in critical reflection, the teacher transformed their idea about the topic discussed on Twitter.

Fischer's Ecologies of Participation (EP)

Fischer's ecologies of participation (2011) included five levels, from level 0 to level 4. Each level showed a different description, for example, *level 0* unaware consumers (lurkers), *level 1* consumers (interact with Tweets), and *level 2* contributors (add content, share resources). *Level 3* included collaborators, facilitators, and curators with different roles in the Twitter chats, and meta-designers were moderators in level 4.

Methodology

A single case study design was applied for this qualitative research. A purposeful sampling strategy was used for the participants' selection; nine K-12 teachers were selected. The inclusion criteria included the participants being inservice teachers engaged in the following Twitter chats #ELAChat, #Langchat, # istechat, #nt2t, and #mschat.

Table 1 *Educational Twitter Chats*

Hashtag	Name	Description
#ELAChat	English Language Arts chat	Educational topics, reading, writing and literacy
#istechat	International Society for Technology in Education chat	Educational topics, Educational Technology and ISTE standards
#Langchat	Language Chat	Educational topics for world language teachers
#mschat	Middle School	Educational topics related to Middle School
#nt2t	Educators new to Twitter	Educational topics for teachers that are new using Twitter

Table 2 *Participant Demographics of Teaching Experience, Gender, and Current Position*

Participant	# of Years Teaching	Gender	Grade Levels	Content Area Specialization
P1	17	M	6,7,8	Social Studies, Fabrication Lab/TV Production
P2	17	F	7	Language Arts
P3	12	F	2	Language Arts, Science, Math, Computer Science
P4	13	F	11	Language Arts
P5	5	F	9, 10, 11, 12	World Languages
P6	15	F	6	Language Arts
P7	12	F	11, 12	Spanish
P8	14	F	9, 10, 11, 12	World Languages Spanish
P9	13	F	9, 10, 11	World Languages Spanish

Table 2 shows the participants' experience, gender, and content area. The participants' selection brought a variety of perspectives that allowed exploring in-depth the case study.
The interviews were by email based on Hawkins' (2018) research. Also, I applied reflective journals and a Tweet content analysis form. The data collection was triangulated and analyzed to find the relationships between the DoR and levels of participation in the teachers' engagement on Twitter chats.

Data Analysis

Data analysis from the email interviews showed how teachers began using Twitter, their experiences and reflections on Twitter chats (Appendix A). A teacher shared that "Participating in Twitter chats and just on the platform in general puts me in the environment of thinkers and learners - creatives, like me, who want to enhance their craft and see their students benefit from all their learning as well." The interviews brough an in depth perspective of the teachers' experience using Twitter chats.

Data analysis of the journal entries showed how teachers could identified themselves in different roles as moderators, contributors, active or passive participants. Giving an insight about how they felt their connections within the Twitter chat and their personal experiences. Also, in the journals, teachers shared words like inspiration, collaboration, and the importance of building relations when using Twitter chats. A participant shared "I felt recognized and respected for my contributions."

Data analysis of the Twitter posts showed how teachers reflect about their experiences in Twitter chats. For example, participants shared about the role of a teacher, the school culture, educational technology, and connectedness. When teachers shared about their experience with technology other teachers can relate and learn from their connections.

Table 3 *High Levels of Teachers Participation on Twitter*

High Level of Participation	Frequency	Percent
Collaborator	21	55%
Curator	6	16%
Meta-Designers	11	29%
Total	38	100%

Table 4 *Low Levels of Teachers Participation on Twitter*

Low Level of Participation	Frequency	Total Percent
Unaware Consumer	47	48%
Consumers	28	29%
Contributors	22	23%
Total	97	100%

Table 3 and Table 4 showed High and Low levels of participation. A high level of participation described a teacher that participated actively on Twitter could be a meta-designer or moderator, collaborator, or curator. A low level of participation was seen through less active participation, sharing resources, lurking, and searching for resources on Twitter. Table 3 and Table 4 included data from the interviews and journal prompts.

Table 5 *Depth of Reflection Codes from Interviews, Journals, and Tweets*

Codes	Frequency	Total (Percent)
DoR- Critical	85	11%
DoR - Reflection	182	23%
DoR - Understanding	235	30%
DoR – Non reflection/ Descriptive	285	36%
Total	787	100%

Table 5 included the DoR a priori codes from interviews, journals, and teacher tweets. The frequency showed how the data collected represented the DoR – Critical (11%) and DoR Reflection (23%). Participants shared how their engagement on Twitter chats made them reflect on their practice, find other teachers to connect with, and improve their professionalism and career because of the information, reflection, and learning shared.

Conclusions

The case study's key findings showed how teachers participated on Twitter in different levels of engagement, from unaware consumers to meta-designers, allowing them to create a professional identity from their connections on Twitter chats. The study results indicated that teachers were able to reflect on their teaching practices in different levels of reflection, from a non reflection/ descriptive to a critical reflection. The results showed how teachers could reflect on educational topics and even change their point of view, feeling part of a community that allowed them to learn, share, and collaborate. There were limitations to the research design that included the number of participants and email interviews. Sharing on Twitter educational chats can help them feel less isolated. Also, teachers can develop a digital professional identity that could promote leadership roles and opportunities to create an educational change. School districts and administrators could encourage teachers' participation in educational Twitter chats to create a learning community and promote professional development among them. It is significant for teachers to connect, create a learning community, and grow in their profession, and all this could happen when they reflect on their experience and share content on the Twitter educational chats.

Appendix A: Research Questions Aligned to Data Sources

Research Question	Data Collection Tool	Data Source Questions
Research Question 1: In what professional activities do teachers participate on Twitter?	Interview	IQ#1: How did you first begin participating on Twitter? IQ#2: How has your participation on Twitter evolved over time? IQ#3: Describe your experiences with Twitter chats.
	Journal Reflection #1: Types of Twitter participation	Directions: Place an X in the column to indicate which Twitter roles describe your past experiences. Then describe a specific example.
	Journal Reflection #2: Post Twitter Chat: DM	1. Why did you choose to attend the chat? 2. Describe your participation in the chat. 3. How well did the chat meet your expectations? 4. How did you feel during the chat?
	Tweet Content Analysis Form	Form will allow me as the researcher to categorize tweets into types of participation.
Research Question 2: How do teachers use Twitter to help them reflect on pedagogical practices?	Interview	IQ#4: How has your participation influenced what you do in the classroom, if at all? Share an example. IQ#5: How has your participation on Twitter made you reflect about your teaching practice if at all? Share an example. IQ#6: Describe a teaching topic that you are passionate about that has been discussed on Twitter. How has your Twitter participation influenced your views on the topic? IQ#7: Describe a time when something you heard about education on Twitter made you rethink the topic.
	Journal Reflection #2: Post Twitter Chat: DM	5. As you pause now, and reflect on the topic of the chat, what insights do you have about your own teaching? 6. After the Twitter chat, what comment made you reflect about education in general. Share an example and how that impact your previews ideas.
	Tweet Content Analysis Form	Form will allow me as the researcher to categorize tweets for depth of reflection on pedagogy.

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