Needs Analysis of a Social Media Tool for Hawai'i K-12 Teachers

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This study used an online survey and in-person focus group to gather opinions from 16 teacher-leaders about their use of social media professionally, and features they desired in a new social media tool designed for a large school district. Results indicate teachers had complex views of social media that included valuing networking and resource sharing yet some were troubled by issues of privacy, usability and the superficiality of online communication. Teachers requested many features in a collaboration tool, including features from well-known tools such as Facebook, Twitter and Craigslist. They desired aspects of formal professional development such as administrative support and aspects of informal professional development communities such as being teacher-led and voluntary. When asked about a district-specific tool, they were wary of being monitored and of not receiving sufficient peer buy-in, but agreed such a tool would benefit new teachers and teachers on neighbor islands. Practical implications are discussed.

Keywords: Hawai'i teachers, K-12, Professional development, Social media

Introduction

Hawai'i is a geographically dispersed state with only one public K-12 school district, the Hawai'i Department of Education (HIDOE). Teachers in Hawai'i seek culturally-relevant resources, as Hawai'i is influenced by indigenous Hawaiian culture and varied ethnic backgrounds that comprise the state's population. The HIDOE continually seeks to connect teachers, especially those on less populated islands who have limited access to colleagues. To address the need for a district-specific network, the HIDOE approached the University of Hawai'i College of Education (COE) about building a new social media (SM) platform for teacher collaboration. As part of an initial needs analysis, the COE collected data from a group of teachers from across the district. This paper describes the findings from the needs analysis.

Literature Review

Social Media's Role in Collaboration and Professional Development

Popular SM platforms were not created with education in mind, as their missions typically revolve around connecting people to share information and ideas (Facebook, n.d.; Twitter, n.d.; YouTube, n.d.). However, platforms including Twitter, Instagram, Facebook, and YouTube are being used by teachers as a means for teacher collaboration and online professional development (PD) (Blitz, 2013; Boholano, 2017). SM affords teachers the opportunity to share ideas and resources across time, place, and organizational boundaries (Forte et al., 2012), forming a pool of widely accessible resources. SM can be accessed on various devices, giving teachers more control over access to information (Kearney & Maher, 2019). Moreover, tools, such as Twitter, allow teachers to find other teachers and resources by

using search features and hashtags (Krutka & Carpenter, 2016). For example, in a study that examined social studies teachers' use of Twitter, teachers strategically used hashtags to find fellow teachers and vet information (Krutka & Carpenter, 2016). Features such as retweeting and liking build shared knowledge and practices by allowing teachers to reinforce ideas and practices they find useful (Goodyear et al., 2014).

SM provides networking opportunities that support various types of teacher professional development, from formal to informal. SM has been shown to support formal PD activities in schools, such as online professional learning communities (PLCs). PLCs are groups of teachers, usually at the school level, who collaborate to improve student learning (Vangrieken et al., 2017). For example, in a study of teachers using SM to supplement in-person PD, a Facebook-based community helped teachers maintain pedagogical innovations and continue to develop their practice (Goodyear et al., 2014).

SM has allowed teachers to create and customize their PD experience (Kearney & Maher, 2019; Krutka & Carpenter, 2016), leading to teachers building informal PD networks. While PLCs are formally and intentionally created, communities of practice (CoP) are formed organically by people who share similar concerns or passions and evolve based on the membership and needs of the group (Vangrieken et al., 2017). For example, Rosell-Aguilar (2018) found that a specific hashtag on Twitter was used to develop a CoP among teachers. The hashtag, #MFLtwitterati, started as a small group of foreign language teachers and has become an increasingly popular online community. Surveys and interviews of users led the researcher to identify the group as a CoP, with teachers coming together voluntarily for a common purpose.

A third type of teacher community, the professional learning network (PLN) has also emerged and is entirely informal and self-generating. PLNs are built by individual teachers based on their interests and needs. The self-generating nature of PLNs transforms the concept of PD from content delivery, such as traditional expert-led PD, to content generation by teachers (Prestridge, 2019).

Teacher Perceptions of Social Media

Despite the affordances of SM, perceptions among teachers have been mixed. SM tools like Twitter, are perceived as efficient and customizable, as teachers can quickly read Twitter's short-form messages (Carpenter, 2015). Teachers using SM have also reported increased levels of confidence and feel they are being more innovative in their practice (Goodyear et al., 2014). Conversely, teachers have reported challenges using these platforms, including lack of training (Alabdulkareem, 2015) and time (Carpenter, 2015). While some may be interested in using SM, there are schools and districts that do not allow SM use by teachers (Forte et al., 2012; Krutka & Carpenter, 2016).

Research Design & Methods

At the request of the COE Dean, with support of the HIDOE superintendent, the COE instructional design team explored the possibility of building a district-specific social media tool. The goal of such a tool would be to connect teachers across the geographically dispersed district. The team used the ADDIE model of instructional design to inform its process. ADDIE, which stands for Analysis, Design, Development, Implementation and Evaluation is a process that serves as a guiding framework when designing for complex situations and learning environments (Branch, 2009). Learner analysis is a critical component of needs assessment and the initial stage of the ADDIE process. Learner analysis identifies learner characteristics such as prior knowledge, demographics, and social needs to inform instructional design decisions (Morrison et al., 2010).

Previous research has examined how teachers use SM professionally but often include international samples (e.g., Alabdulkareem, 2015) or SM social media users which may be highly diverse (e.g., Forte et al., 2012). As a learner analysis, this study sought to better understand specifically how Hawaii teachers use SM professionally and posed the following research questions: 1. How do HIDOE teachers use social media professionally? 2. What are the positive and negative perceptions HIDOE teachers have of existing social media tools? To inform the possible development of a district-specific social media tool, the study asked: 3. What features would teachers most like to see incorporated in a new social media tool? 4. What are teachers' perceptions of a hypothetical district-specific social media tool?

To answer these questions, a survey and focus group were conducted with a group of 16 teachers. The teachers came from various islands throughout the state and were part of a HIDOE-sponsored leadership program. In preparation

for the focus group, an anonymous online survey was administered to the 16 teachers asking about SM usage, perceptions, and suggestions for a hypothetical tool. The survey data, guidelines for effective learner analyses, as well as general needs gathering questions commonly used by the instructional design team informed the focus group questions. The research team attending the focus group consisted of four individuals, two who facilitated the focus group and two who audio recorded the session and acted as observers and note-takers. The facilitators used a semi-structured interview protocol consisting of seven questions. All methods and instruments were approved by the University's institutional review board on research with human subjects. Audio recordings were transcribed and combined with the observational notes to make up an overall record of the meeting. This record, along with open-ended responses from the survey, were coded using Saldana's (2015) first and second coding cycles to look for patterns and themes within the data. Results are reported in terms of overall themes and frequency of topic mentions. A mention refers to a topic raised by a unique participant or by the same participant in separate areas of the transcript. To achieve interrater reliability, two of the researchers coded the data separately and discussed differences until 100% agreement was reached. A draft of the study data and write-up was sent to the HIDOE focus group facilitator with an invitation for additional review by focus group participants.

Results

Professional Use of Social Media

The first research question focused on participants' use of SM as professionals. Three themes emerged. The first and most frequently cited theme with 16 unique mentions, reflected that participants differed in their methods and purposes for SM use, how they communicated, and with whom. While participants communicated broadly on SM, one teacher noted the use of direct, private messages to avoid scrutiny. "I'll get a bunch of direct messages, like I really liked your Tweet and I wanted to like it but I was afraid someone would see." Teachers also reported using different SM platforms to separate their work and personal lives. One mentioned creating separate accounts saying, "I separate my personal life from my teacher life … for me Facebook and Instagram have both been personal pages for so long … that's why Twitter is my only educational outlet."

A second theme, with 12 unique mentions, focused on communication content noting their ability to share and find resources and PD-related information, and to discuss educational issues. One stated, "I also find that there aren't many in my educator community/space/school/complex discussing issues of educational equity and social justice. If I want to talk about those things, Twitter is pretty much my only option."

The third theme was related to networking within SM, with nine unique mentions. One teacher described using SM to get to know coworkers saying, "As a new Department Head, Facebook is where I learn about who my teachers are, so I can motivate them to work together." Teachers also used SM to plan and promote in-person events, such as informal planning meetings.

Positive Perceptions of Social Media

Three positive themes emerged from the second research question on teachers' positive perceptions of SM. In the first theme, with 11 unique mentions, participants found that they could engage in conversations related specifically to educational issues and appreciated the ability to follow users that provide useful information. One mentioned, "Twitter chats have been powerful in my career because I can start following the 'experts' and ask them questions directly." Second, with nine unique mentions, teachers appreciated the ability to easily find and share resources that helped with their work or to better understand important issues. One teacher explained, "I put my ideas, ask questions, and read a lot of what educators and thinkers from around the world have to say about the current state of education." Third, with seven unique mentions, teachers appreciated having control over how they present themselves, how content can be controlled, and how they are able to find information.

Negative Perceptions of Social Media

However, results also revealed negative perceptions of SM. Superficiality was the more commonly cited theme, with 15 unique mentions. Some teachers found it difficult to find affinity groups and meaningful communication. Some found that the impersonality of SM negatively affected their experience. One stated, "If I'm being the one sharing the resource, but nobody's engaging the platform and sharing, I don't get anything out of it." The second theme was

uncertainty about SM use, with 12 unique mentions. Regarding education-specific platforms, one participant stated, "these platforms don't take off because they're bulky, glitchy, and hard to get people to regularly update them." When platforms are difficult to use, teachers must spend extra time learning the interface. Teachers also felt uncertainty due to the lack of privacy on SM platforms.

Desired Features

The third research question focused on features teachers would want in a new district-specific SM tool. Two themes emerged: formation of a safe community, with 49 unique mentions, and making life easier, with 73 unique mentions. Participants shared ideas for features to network, such as finding teachers from similar disciplines, locations or interests, and being able to directly message those in the network. One stated, "I would love to hear from other HIDOE educators. It would even be great if we could specify it to school, complex area, and district!" A summary of features desired is displayed in Table 1.

Table 1
Desired Features in District-Specific Social Media Tool

Theme	Features
Safe Community	Networking tools
	Administrative support but no oversight/monitoring of communication
	Optional participation
	Limited/no public access
	No login/passwords
	Anonymous posting available
	Moderators
Making Life Easier	Search for Culturally-relevant resources
	Search for guest speakers
	Search/alert for perks, promotions and events for teachers
	Advanced search capabilities (categories, tags, file type)
	Contests, awards and badges
	Training

While teachers desired community-building, they were also concerned with feeling safe and wanted participation to be optional. Teachers also wanted administrative support for the tool, yet expressed concern over principals or district officials monitoring their communication. Some desired limited or no public access to avoid having public profiles or being studied without their knowledge. Others wanted the option for anonymous postings through moderators. One participant shared, "I'm far less likely to engage in meaningful educational collaboration in a platform actively monitored by hoards of administrators more concerned about the optics."

Participants wanted an engaging tool that would make life easier. In addition to finding high-quality, culturally relevant teaching resources, they requested a means to locate guest speakers for classes. Interestingly, they also desired a space to find perks, such as sales promotions, discounts, and special events relevant to teachers. They shared detailed feedback about how they want to search for these resources using categories, tags, and file types. Participants suggested including gamified elements such as contests, awards, and badges. They underscored the need for adequate training that was at least partially face-to-face, personalized, ongoing, and free. There was wide agreement on this, as many participants mentioned training as a key success factor for acceptance of a SM tool.

Perceptions of a Hypothetical District-Specific Social Media Tool

The last research question examined teachers' perceptions of a hypothetical district-specific SM tool. Results revealed two main perceptions. An overall wariness was most commonly cited with 60 mentions, yet participants were also open in specific cases, with 40 mentions.

Participants were distrustful of the motives for launching such a tool. They were primarily concerned with being monitored or reprimanded for their comments. They were also worried about the lack of peer buy-in and the limited reach a closed system might have. They observed that many of their peers were not participating in SM, either due to

discomfort with the technology, lack of confidence to communicate publicly, lack of leadership support, or time constraints. When describing the lack of use by their colleagues, participants made statements such as, "Lots of teachers would say 'I'm not going to do another thing,'" and "If we can't get Hawai'i educators to use those existing platforms now, why do we think we'll get them to use this new thing?"

There was also concern about the limited scope of a district-specific tool. Some already had networks that included teachers outside their district and a district-specific tool would limit their ability to share their work widely. One participant stated, "I don't think it makes sense to have a closed SM. It makes our ideas insular. We need to have comments and ideas from everywhere."

Participants also wondered if it was better to train teachers to use existing tools rather than create a new one. This question was particularly salient to the primary goal of assessing the need for a district-specific tool. One participant summed it up saying, "... instead of spending money, time and talent on something totally new, why not teach our teachers how to use and leverage existing platforms and join a global conversation on education?"

While the group was wary of the tool, they also expressed openness to it. They were excited by the prospect of creating a teacher-led culture unique to this district and to discuss relevant local issues. They also envisioned use by specific audiences such as new teachers who need to form connections and find resources, especially those who are geographically remote or who may not feel comfortable communicating publicly. One participant stated, "I think this would be a great way to collaborate effectively and to learn about the activities and PD that I sometimes miss through lack of communication and being on another island outside Oahu."

Discussion

Teachers' views on SM were complex and occasionally contradictory. Participants clearly recognized the value of SM to connect with colleagues in similar locations, content areas, grade-level or interests, or with people they admired. These results align with findings that like-minded teachers tend to group together on Twitter (Krutka & Carpenter, 2016). Despite this, participants reported varying levels of SM usage with some contributing, some only consuming, and some opting out.

Engagement in SM may be influenced by the individual culture of schools. Hood (2017) found that teachers who were in collaborative environments felt less need for online platforms, as in-person collaboration was more valued than online collaboration. Due to some teachers' lack of participation in SM, researchers recommend that online PD be used as an extension of traditional PD or along with other delivery methods (Goodyear et al., 2014).

Many were concerned with protecting their identity, privacy, and at times, their anonymity. Preservice and inservice teachers across various contexts have expressed similar concerns (Carpenter, 2015; Kearney & Maher, 2019). The public nature of platforms such as Twitter may leave teachers feeling exposed, allowing students, parents, administrators, and others to see their personal and professional posts. Some teachers already have personal SM accounts, leading to an overlap with their professional lives (Kearney & Maher, 2019). Additionally, teachers may judge each other for content that is not considered professional (Carpenter & Harvey, 2019). Moreover, school districts may have differing rules for SM use, including restricting teachers' use to professional purposes (Rodesiler, 2017). For open and honest teacher communication, anonymity may be a solution. However, participants also desired profiles to identify other users to follow and connect with. Thus, the issues around identity, privacy, and anonymity are important, without a clear solution.

There were differing perceptions on the usability of SM tools. Participants noted that they believed only a fraction of teachers would use a new SM tool. They also expressed the need for training, pointing to the rough transition that some teachers had with a recent district-wide transition to Google apps for education. Similar results have also been found in other studies.

Teachers use a number of SM platforms for various purposes (Prestridge, 2019; van Bommel et al., 2020). Perhaps as a reflection of this, participants described a variety of features they would want in a new tool, some of them contradictory. The disparity of opinion on the features of a new tool needs to be further explored should a tool be developed. While existing tools are used by teachers, they are not created specifically for educators and their particular needs. Therefore, common SM features such as word limitations, personal and recreational posting, and the commercialized

nature of these environments serve as challenges to using SM professionally (Carpenter & Harvey, 2019; Hood, 2017). Participants wanted a tool that was simple to use, yet feature-rich. Specifically, many of the requested features pertained to social networking, yet they also wanted features from tools such as Facebook Marketplace or Craigslist to find and share deals, or gamified features to receive rewards for participation. It would be prudent to explore perceptions and needs of less experienced users and non-users, to provide a more complete picture of which features would best serve the target audience.

Study participants valued specific aspects of the different types of PD communities found in literature, PLCs, CoPs, and PLNs. The proposed district-specific platform could be considered a PLC, as it is a PD community developed by a school or school system (DuFour & Eaker, 2009). However, due to participants' concerns regarding administrative oversight, their wish to collaborate outside of the district and to develop their own teacher-led culture, the flexibility of a CoP is also desired, as CoPs organically take on the values and goals of members (Vangrieken et al., 2017). Additionally, participants had created their own PLNs, which are completely customized informal networks (Prestridge, 2019). While formal PD is still relevant, Goodyear et. al (2019) suggests there is a "new model of professionalism" (p. 190) marked by a shift toward informal, self-initiated learning through PLNs. The desire for a combination of formal and informal aspects of PD could be explained by the fact that teachers in reality participate seamlessly in formal and informal PD, in different contexts and through face-to-face and online delivery (Prestridge, 2019).

Participants were excited by the prospect of creating their own teacher-driven culture with a district-specific tool. They described a space in which they could express views honestly and share culturally-relevant resources, an important component of culturally responsive teaching (Gay, 2018). An important part of their description of a teacher-driven culture was freedom from administrative scrutiny. This is consistent with Tseng and Kuo (2014), who recommended that CoPs develop without the fear of criticism or supervisor oversight. It would be helpful to look further at perceptions of such a tool at varying schools, complex areas, and teacher subgroups. Participants clearly saw benefits to a district-specific system for new teachers or those on less populated islands, but noted differing rules and norms across the state and district for sharing.

If a district-specific tool were implemented, this study notes important considerations. First, a new tool would need to be accompanied by training and support that is comprehensive, ongoing, and personalized (Liao et al., 2017). A comprehensive library of content would need to be built in order for users to find the site useful, and it would take time to build. Studies have suggested that educational curriculum materials, or those designed specifically to improve teacher pedagogy, may have the greatest potential for improving teacher practice (Davis et al., 2017). Lastly, a concerted and ongoing effort would be required to encourage buy-in and exchange. Effective support is one factor influencing teacher buy-in. Another is trust. Trust within an online community helps facilitate active engagement (Vohra & Bhardwaj, 2019), knowledge sharing (Ardichvili, 2008), and interactions such as sharing of resources or helping solve one another's problems (Goodyear et al., 2014). Methods for building trust and increasing knowledge sharing include a clear purpose, providing options for engagement and sharing of expertise and experience, and having clear roles and guidelines for behavior (Booth, 2012).

Limitations

There are limitations to this study. While the participants were diverse in terms of teaching areas and locations, they were a convenience sample in that they were a pre-existing group who were already meeting regularly. The group was composed of experienced teachers and thus was not representative of the district as a whole. SM was already being used professionally and personally by most members of the group, which may have impacted their views toward SM. It is possible that these more experienced users of SM made many more feature suggestions than less experienced users would have.

This study was conducted as an initial needs analysis and was not sufficient to capture a holistic view of the needs and requirements of all types of teachers within the district. Data collection and analysis from other stakeholders, such as administrators, were not conducted. Additionally, this study was conducted in a unique context and culture, so the findings may not be widely generalizable. The findings, however, can serve as a basis for other districts that want to explore a SM solution for PD.

Conclusion

This study provides additional insight into how teachers use SM professionally, their perceptions of SM, and their views on a hypothetical district-specific SM platform, designed especially to connect teachers across geographic distance. Participants appreciate the concept of a SM tool designed for their specific PD needs, with adequate and high-quality training and promotion of a teacher-driven culture. However, it is not clear whether a district-specific platform would be used due to perceptions of being monitored and the fact that there are varying levels of SM usage among teachers. Contradictions and challenges identified through the data led the researchers and design team to postpone the development of such a tool. Others attempting the development of similar platforms should be aware of potential complexities. This study was conducted prior to the Covid-19 pandemic. Born out of necessity, there have since been various communities and websites developed for online teacher collaboration. Examining buy-in and usability of these new tools could be a fruitful area of future research.

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