Social media use by instructional design departments

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The aim of this investigation was to gain an understanding of the use of institutional social media accounts by graduate departments. This study focused particularly on the social media accounts of instructional design (ID) graduate programs. Content and statistical analyses were conducted to examine 24,948 tweets posted by ID programs (n = 22) on Twitter. Results revealed that ID graduate programs primarily used Twitter to broadcast resources and materials related to the field. Additionally, results showed that ID programs most frequently used Twitter to boost the profile of their program. Yet, tweets highlighting student and faculty accomplishments had the highest percentage of community interactions (likes and retweets). These findings suggest that ID programs are functioning as filters of information relevant to the field rather than conversational hubs.

Introduction

According to the Pew Research Center, social media adoption in the United States has grown from 5% in 2005 to 69% percent in 2016 (Social Media Fact Sheet, 2016). Such adoption rates seem to be a global trend (Poushter, 2016), and it can be said that social media use has become an integral part of many people's daily lives (Aydin, 2012; Rodríguez-Hoyos, Salmón, & Fernández-Díaz, 2015). Used as a means of communication, collaboration, and content creation (Alzouebi & Isakovic, 2014; Luo, Wang, & Han, 2013), social media are used in a wide array of settings, including educational ones (Dabbagh & Kitsantas, 2012; Manca & Ranieri, 2016, 2017).

The majority of the current literature focuses on examining social media use and integration within formal educational settings (e.g., Allen & Nelson, 2013; Bista, 2015; Gao, Luo, & Zhang, 2012; Lin, Hoffman, & Borengasser, 2013), and little attention has been paid to how graduate departments or programs use social media in informal ways. While it is not uncommon for graduate departments or programs to have an institutional social media presence, the instructional design (ID) field has a limited understanding of how our programs use social media. What content are ID programs sharing online? How are these graduate programs interacting with stakeholders? And how do individuals interact with the different kinds of content that ID programs share online?

We are motivated to better understand how ID programs are using social media to make greater sense of ID programs' online presence as well as the role that social media serve for program purposes. While higher education institutions use social media for a variety of purposes – such as showcasing a program, enhancing institutional recruitment, communicating with stakeholders, and engaging in community-building (Kimmons, Veletsianos, & Woodward, 2017; Rosenberg, Terry, Bell, Hiltz, & Russo, 2016; Veletsianos, Kimmons, Shaw, Pasquini, & Woodward, 2017) – very little is known about how graduate programs in particular use social media. The goal of this research is twofold: to increase the knowledge base and illustrate the practice of social media use by graduate programs.

In this study, we used qualitative and quantitative methods to analyse a large data set of social media data retrieved from ID program department social media accounts. We focused our investigation on one particular social media tool, Twitter, for reasons that we explain below. Following a review of the literature, we describe

the methods used in this study, provide our findings, and conclude with a discussion of their significance and implications for the field.

Literature review

The literature examining social media in higher education focuses on a wide variety of topics, including the use of social media by academics for scholarly purposes (e.g., Kimmons & Veletsianos, 2016; Veletsianos & Kimmons, 2012, 2016), use of social media for professional development (e.g., Dousay & Asino, 2017), integration in formal coursework (e.g., Tess, 2013), institutional adoption and use (e.g., Kimmons et al., 2017; Veletsianos et al., 2017), and ethical guidelines and standards for social media used (e.g., Pham, 2014). The bulk of this literature focuses on using social media to improve learning experiences in higher education (Gao et al., 2012; Rodríguez-Hoyos et al., 2015).

An important aspect of the literature relates to the multiple uses of social media tools, as these come to be employed for a diverse range of professional and personal purposes. Faculty use social media tools for both personal and professional purposes (Moran & Tinti-Kane, 2013), and academics make decisions on what to disclose online in complicated and thoughtful ways (Veletsianos & Stewart, 2016). A study by Pham, Goforth, Segool, and Burt (2014), for instance, examined the academic and non-academic uses of social networking sites by faculty and graduate students in a school of psychology training program. That study found that graduate students were more likely to use social networking for personal and academic purposes when compared to faculty members. This is in part due to the ethical dilemmas and dual relationship issues that graduate students and faculty experienced when using the same social media spaces for both personal and professional interactions (Pham et al., 2014).

Other research endeavours related to social media in graduate education have focused on their utilisation as pedagogical tools in the curriculum. Bista (2015) studied the perceptions of education graduate students on using Twitter as a pedagogical tool during class activities. Similarly, Lin et al. (2013) conducted a qualitative case study to examine the uses of Twitter when implemented as a supplement to online and face-to-face classroom learning among graduate students. The results from these studies suggest that the implementation of social media in the graduate curriculum can be valuable for students; however, in both instances the results indicated that careful consideration must be given to scaffolding, instructions, and expectations of participation. Researchers have also investigated the use of social media to facilitate online discussions (DiVall & Kirwin, 2012) and social connections (Xi, Hui, de Pablos, Lytras, and Yongqiang, 2016) in the graduate curriculum. These results indicated that the use of social media increased discussion exposure and participation (DiVall & Kirwin, 2012) and teamwork outcomes by enhancing the team coordination process in collaborative learning (Xi et al., 2016).

Research efforts focused on the use of institutional social media accounts by graduate programs and their educational value are uncommon. For instance, Myers, Jeffery, Nimmagadda, Werthman, and Jordan (2015) conducted a case study examining how a social media community was used in an online nursing program as a mechanism to facilitate informal socialisation among doctoral students. In this study, graduate students used Facebook to interact with each other outside the academic setting, exchanging relevant materials and sharing personal life updates. Social media were used in a supplemental way to support the development of a community of scholars. Somewhat similar results were uncovered by Blankenship and Gibson (2015), who surveyed communication graduate students on their use of social media to interact with their classmates for course- and non-course-related purposes. Researchers found that graduate students relied heavily on the public Facebook group created for the cohort to communicate and share information amongst each other. The Facebook group was described as a lifeline that helped graduate students feel connected to their classmates and the program.

Similarly, self-reports by graduate students in ID graduate programs have revealed that most graduate programs use some sort of social media space to engage with stakeholders and share information about the graduate program (Romero-Hall, 2017a). Romero-Hall (2017b) further examined the intentional use of social

media by a graduate degree program and reported that graduate students' participation in the public (Facebook and Twitter) and private (Google+ Community) social media spaces provided awareness of self-directed, voluntary, and informal learning opportunities; engaged students in conversations with their peers; and expanded the learning experience beyond the traditional classroom.

The literature examined above shows that graduate programs are creating social media spaces to communicate and engage with their students and that at least some students report finding value in participating in these spaces. However, aside from a small number of individual cases, a number of which depend upon self-reported data, the ID community lacks an understanding of how institutional social media accounts are used by graduate programs and how individuals interact with the content posted. Although researchers have noted that institutional social media accounts by graduate programs may foster program community and greater collegiality (Rosenberg et al., 2016), no research on ID programs exists to illustrate exactly how ID programs use social media. Investigations that examine the use of social media by graduate programs can help further provide clarity on current practices, content shared, and the types of interactions that occur in these spaces. We begin this process via this study by focusing on Twitter. We focus on Twitter because it is used extensively in the higher education sector (Bowman, 2015) and has been researched in the context of institutional settings (Kimmons et al., 2017). Furthermore, many ID institutions/programs appear to use a public Twitter account, which enables researchers to retrieve data associated with their accounts. To guide this investigation, we posed the following research questions:

- RQ1: What content are ID graduate programs sharing through their Twitter accounts?
- RQ2: In what ways are ID programs interacting with others via Twitter?
- RQ3: What is the relationship between different types of posts and community interactions with them?

Methods

This study used a combination of web extraction methods to collect the Twitter activities of ID graduate programs. Data were then analysed using qualitative and quantitative methods. The approaches used are explained below in more detail.

Sampling

To obtain access to links of active public social media accounts used by ID graduate programs, the researchers crowdsourced a public Google spreadsheet through channels of communication frequently used by ID faculty, practitioners, and graduate students. These channels of communication included Facebook groups, Twitter accounts, LinkedIn groups, blogs, and listservs. Individuals were invited to provide basic information about their programs to this spreadsheet, such as the name of the higher education institution, official program or department name, and links to the different social media accounts maintained by their programs or departments (i.e., Twitter account, Twitter hashtag, Facebook page, Facebook group, YouTube channel, Instagram account, LinkedIn group). Though a variety of social media tools are used by ID programs, the two most frequently reported tools were Twitter and Facebook. To address the research questions, we used data gathered from the public Twitter accounts (n = 22) shared in the public Google spreadsheet (see Table 1). The shared public Twitter accounts were all higher education institutions in North America from the United States (86%) and Canada (14%). We chose to identify the programs upon which this research was based because these are public accounts that are exploring the use of social media in scholarly practice at the program level. Results, however, are reported at the aggregate level, as we did not conduct analyses at the individual program level.

Table 1
Public Twitter accounts shared and analysed

Institution	Department/Program	Twitter account
Arizona State University	Science of Learning and Educational Technology Lab	@soletlab
Boise State University	Educational Technology	@edtechbsu
California State University Fullerton	Instructional Design and Technology	@msidt
Emporia State University	Instructional Design and Technology	@idtesu
Florida State University	Instructional Systems and Learning Technologies	@ISLT_FSU
James Madison University	Educational Technology	@jmuedtech
Michigan State University	Educational Technology	@MAET
Michigan State University	Educational Psychology and Educational Technology	@MSU_EPET
Mississippi State University	Instructional Systems and Workforce Development	@MSU_ISWD
Morehead State University	Educational Technology	@MSU_EDD
Northern Illinois University	Educational Technology, Research and Assessment	@niu_etra
Pasco-Hernando State College	Academic Technology	@ATPHSC
Penn State	Learning, Design, and Technology	@psuldt
Royal Roads University	Learning and Technology	@RRUEduStudies
The University of Tampa	Instructional Design and Technology	@UT_IDT
University of Memphis	Instructional Design and Technology	@IDTMemphis
University of Minnesota	Learning Technologies	@LTMediaLab @ltsaumn
University of North Texas	Learning Technologies	@UNTCOI
University of South Carolina	Educational Technology	@EdTech_UofSC
University of Texas Rio Grande Valley	Educational Technology	@EDTECH_UTB
University of Toronto	Knowledge Media Design Institute	@kmdi
University of Toronto	Center for Teaching and Learning	@CTLOISE

Data collection

The Twitter REST API (application program interface) enables researchers to programmatically retrieve data pertaining to public Twitter accounts. We used this tool to collect two sets of data: account information for the identified programs/departments (e.g., name, bio description, account creation date) and the most recent 3500 tweets posted by each account, along with data pertaining to each individual tweet (e.g., date posted, number of times the tweet was marked as favourite by others). The 3500-tweet limit was a programmatically enforced restriction of the Twitter API. In total, 24,948 tweets were collected in this manner. Given this large amount of data, we elected to focus our analysis on a random sample of tweets (n = 1023), which allowed for statistical generalisability of results with a confidence interval of +/-3% at the 95% confidence level.

Data analysis

Data analysis consisted of two main steps. We conducted thematic coding of the random sample of tweets and conducted quantitative analysis of these codes to generate results.

- Qualitative analysis: First, two researchers independently tagged the first 75 tweets with keywords that served to represent the content of the tweets posted. This initial tagging of tweets was done without prior discussion of potential codes between the researchers. Based on this initial independent coding, inter-coder reliability percentage agreement was calculated at 78.65%. Second, the researchers discussed the codes and together verified, modified, or refined the codes. At the end of this process, a set of codes and associated descriptions was generated. Next, using these codes, the remainder of the tweets were coded by one researcher. Following the initial coding of all tweets (n = 1023), a second researcher re-read and examined the codes. Irrelevant, repetitive, or overlapping codes were then eliminated. The codes were then organised and classified into meaningful themes by both researchers. Each tweet was then tagged to a specific theme based on the code assigned to it. Except for the initial independent coding process, the researchers constantly compared and re-analysed codes and themes until all disagreements were resolved.
- Quantitative analysis: Descriptive statistical analyses were conducted to explore meaningful patterns that emerged from the qualitatively coded data (e.g., measures of central tendency and spread). Non-parametric Kruskal-Wallis H tests were used rather than more common parametrics tests (e.g., ANOVA), due to the violation of various assumptions by the data, such as homogeneity of variance and normality.

Results

RQ1. What content are ID graduate programs sharing through their Twitter accounts?

Content analysis consisted of examining a random sample of tweets posted by 22 ID programs (n = 1023), which generated a total of 72 codes. The codes were organised and classified into eight meaningful themes following the process described above. Each theme served as an overarching content message expressed in the tweet (Table 2).

Table 2
Descriptions of themes and examples

Themes (%)	Description	Example
Automated message (4.59%)	Pre-programmed and routinely posted to a Twitter account	UNT College of Information Digest is out! https://t.co/6msj3lbWt8 Stories via @UNTGradSchool @EFIXXSTUDIOSCCO @GetOdeum
Conversation (8.41%)	Intended to engage followers of a Twitter account on an exchange of messages	@username only time will tell! we find it to be a tremendous professional development tool!
Dead link (1.17%)	Included a link that is no longer active	The BEST kind of teacher collaboration. http://t.co/Em6DADV9Hu
Event information (10.07%)	Shared information about an event such as the type, location, topic, speaker	IDT News: Adobe Captivate Workshop in Memphis featuring [name], May 4th to 6th, 2015 http://t.co/La2E6M7iE2
Highlights of students and faculty (5.87%)	Focused on student and faculty accomplishments	UofT KMD2002 students presenting their projects using city of Toronto's open data. @Open_TO #kmdi #opedata #TO http://t.co/rwoB8sjLl7
Media (9.78%)	Included media content	Team #MAET congratulates our newest alumni - check out these Images of today's celebration! https://t.co/c8Bw04ZqMH
Promotion of program (12.68%)	Intended to raise the profile of a program	A crowd is now gathering for #OISE MEd Info Night. @OISENews @CTLSA_OISE @OISEAlumFriends @OISELibrary https://t.co/M8fbzn2e6l
Sharing resources (47.41%)	Shared assets and materials primarily related to ID issues and trends	Can virtual reality help keep astronauts sane in space? https://t.co/i2v8qRhb2O

Note. Individuals' usernames have been removed.

The majority of the tweets posted were in the following themes: *sharing resources* (*n* = 485), *promotion of program* (*n* = 130), and *event information* (*n* =103). The most common resources shared included online articles (33.88%), job opportunities (6.92%), and tips related to ID practice (6.10%). Tweets promoting graduate programs included messages endorsing the quality of the program (13.25%) and sharing general announcements about the program (13.34%). A number of messages posted served to distribute information about events, such as happenings related to the program (15.04%), presentations geared towards the students (6.07%), and events to disseminate research such as conferences, colloquia, and webinars (6.48%). Content analysis also revealed that many of tweets included media, the majority of which were images (37.07%) and videos (9.27%). Although *conversation* (*n* = 86) was one of the less dominant themes, it is worthwhile to note that these tweets represented responses to followers (30.37%), answers to questions (4.19%), and the provision of opinions (1.57%).

RQ2. In what ways are ID programs interacting with others via Twitter?

Quantitative results indicated that ID programs varied greatly in their levels of Twitter use, with the most active account tweeting 16,621 times over its lifetime and having 6,760 followers, and the least active account tweeting only 7 times and having 48 followers. All variables revealed strongly positive skew in measures of central tendency, with standard deviations exceeding the average values (cf. Table 3).

Table 3
Descriptives of program follower, friend, and tweet counts

	Min.	**Max.**	**Median**	**Avg**	**SD**
# of followers	34	6760	311	870.2	1485.8
# of friends (accounts ID program is following)	1	7424	429	806.5	1591.4
# of tweets	7	16,621	693	1,911.3	3687.8
Original tweet %	11.1%	99.9%	76.8%	66.5%	26.6%
Retweet %	0.1%	88.9%	23.3%	33.5%	26.6%
Hashtagged %	4.1%	92.8%	40.2%	45%	23.3%
Reply %	0%	14.3%	2.2%	3.8%	4%
Broadcast %	85.7%	100%	97.8%	96.2%	4%
URL link %	63.2%	100%	81.5%	81.5%	9.4%

Based on the results of previous research studies on Twitter use in education (Veletsianos & Kimmons, 2016), we anticipated that a power law relationship would exist between each program's follower, friend, and tweet counts. Converting these metrics to logarithmic values revealed this to be the case (cf. Figure 1), and we concluded that there was a direct relationship between a program's Twitter activity (i.e., number of tweets) and metrics of community connection (i.e., followers, friends), with the exception of one outlier, which only followed one other user.

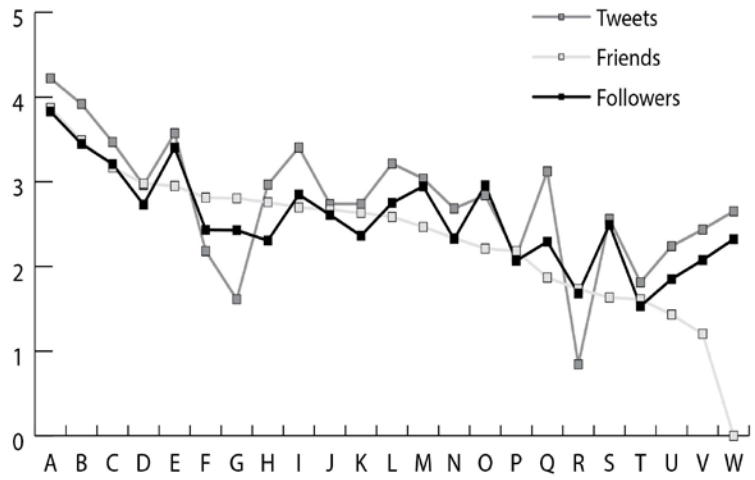

Figure 1. Relationship between logarithmic values of tweet, friend, and follower counts

Great variation was also found (*SD* = 26.6%) in whether programs created or re-posted original content on Twitter. On average, 66.5% of tweets created by programs were original, and 33.5% were retweets of other users' content (cf. Table 3). However, some program accounts rarely retweeted (with 99.9% of tweets being original), while others rarely tweeted original content (with 88.9% of tweets being retweets). This result suggests very different uses of the platform, with some programs using it to share original content and others using it as a means to draw attention to specific issues or posts by others. Given this high variability, median values were most appropriate for understanding general uses, and we therefore concluded that most programs used the platform predominantly for tweeting original content (76.8%) but that they also shared retweets at one-third the rate of original content (23.3%). Great variation was also found (*SD* = 23.3%) in how programs used Twitter hashtags, with programs including hashtags on anywhere between 4.1% and 92.8% of tweets (cf. Table 3). On average, programs included hashtags on less than half of tweets with high variation (*M* = 45%), revealing that programs exhibited varying levels of attempts to connect their tweets with broader conversations in the Twitter community.

A descriptive overview of the 20 most popular hashtags used in the data set revealed that about half of the hashtags were general in nature, and the other half were program- or university-specific (cf. Table 4). General hashtags are topic-based and connect tweets from all users in the Twitter community around common interests (e.g., edtech, edchat, elearning). Program- or university-specific hashtags, however, were more geographically or institutionally isolated and seemed to only connect tweets between users within those contexts (e.g., utrgvedtech, maet, msuepet). Of interest is the absence of a hashtag focusing on ID, although edtech is prominent.

Table 4
Descriptives of the 20 most popular hashtags

Hashtag	Tweet count	Description
edtech	3748	General educational technology discussion
utrgvedtech	1947	Program-specific for Rio Grande Valley
maet	1423	Program-specific for Michigan State
edchat	1339	General education discussion
elearning	1336	General e-learning discussion
highered	695	General higher education discussion
msuepet	326	Program-specific for Michigan State
BoiseState	271	University-specific for Boise State
oiseuoft	259	College-specific for University of Toronto
coetc16	171	Sponsored event by Michigan State
mlearning	168	General mobile learning discussion
oise	157	College-specific for University of Toronto
kmdi	150	Program-specific for University of Toronto
phdchat	140	General graduate school discussion
gamification	139	General gamification discussion
uoft	137	University-specific for University of Toronto
education	130	General education discussion
bigdata	120	General big data discussion
macul16	120	Conference for Michigan educators
mooc	117	General massive open online course discussion

Less variation was found (*SD* = 4%) when comparing tweets that were replies to other users (i.e., dialogic tweets) with broadcast (i.e., monologic) tweets (cf. Table 3). Results indicated that programs used Twitter almost exclusively for broadcast purposes (96.2% of all tweets) as opposed to replying to other users (3.8%). Less variation was also found (*SD* = 9.4%) when considering the percent of tweets that included a URL to a website (cf. Table 4). On average, programs included links in most (81.5%) of their tweets, revealing that they primarily used Twitter as a means for commenting upon or driving traffic to other resources.

RQ3. What is the relationship between different types of posts and community interactions with them?

To understand the ways that individuals interacted with different kinds of content, we conducted a quantitative analysis of community responses to tweets (i.e., likes and retweets) in the different themes. This analysis showed that messages that shared resources (i.e., tagged as *sharing resources*) had the highest number of total likes and retweets (Table 5). However, an analysis of likes and retweets based on the overall number of tweets per theme showed that messages tagged as *highlights of students and faculty* received the highest percentage of likes and retweets. Of the 60 tweets tagged as *highlights of students and faculty*, 48% were liked (in some instances more than once) and 35% were retweeted (in some instances more than once).

Table 5
Themes and community interactions

Theme	Community interaction				
	Totals per theme			% of tweets per theme	
	Tweets	Likes	Retweets	Liked	Retweeted
Automated message	47	16	9	26%	17%
Conversation	86	34	19	27%	15%
Dead link	12	3	4	17%	25%
Event information	103	45	56	20%	29%
Highlights of students and faculty	60	99	60	48%	35%
Media	100	112	54	37%	24%
Promotion of program	130	89	58	32%	28%
Sharing resources	485	234	230	31%	28%

To gain further insight into these results, we conducted a Kruskal-Wallis H test, which showed that there was a significant difference on the number of likes between the different themes, $\chi 2$ (7) = 18.122, p = 0.01. This test generates mean ranks, which refer to the theme means based on ranks rather than raw data. These ranks then substitute the raw data, and calculations are performed using ranks. Results revealed a mean rank of 612.73 for *highlights of students and faculty*, 552. 62 for *media*, 520.55 for *promotion of program*, 503.67 for *sharing resources*, 493.01 for *event information*, 483.91 for *conversation*, 472.14 for *automated message*, and 434.33 for *dead link*. Similarly, a Kruskal-Wallis H test showed that there was a significant difference on the number of retweets between the different themes, $\chi 2$ (7) = 16.341, p = 0.02, with a mean rank of 572.55 for *highlights of students and faculty*, 545.72 for *event information*, 516.42 for *sharing resources*, 511.99 for *promotion of program*, 503.85 for *media*, 496.83 for *dead link*, 453.29 for *automated messages*, and 448.13 for *conversation*. Taken together, these results indicated that tweets that highlighted students and faculty were retweeted and liked more than others.

Discussion

The purpose of this study was to examine how ID graduate programs used social media, in particular Twitter. The results of both the qualitative and quantitative analyses suggest that ID programs seldom engage in dialogue or communicative exchanges with others via this medium but rather use it to broadcast messages. However, content analysis showed that the great majority of the broadcasted messages posted by ID programs contributed resources and materials of interest to the community (e.g., research, employment opportunities). Thus, although ID programs are not engaging in exchange of ideas with others, individuals following these accounts can gain access to relevant resources related to their field. These findings seem to suggest that ID programs are not functioning as conversational hubs but rather as filters of information relevant to the field.

Findings also suggested that ID programs were more likely to use their Twitter accounts as a public outlet to foster and boost the profile of a program than to highlight students and faculty. New course offerings, ranking of a program, or quality of instruction were often shared in Twitter feeds. In contrast, tweets featuring faculty and student activities or stories were fairly infrequent. Yet, based on analyses of the ways that the community interacted with content reported in RQ 3, community members were more likely to engage with messages that showcased students and faculty. Of the 8 themes established in the content analysis, *highlights of students and faculty* had the highest percentage of likes and retweets. This result is consistent with prior literature in which graduate students indicated that they were interested in social media messages featuring successes and failures of other graduate students, alumni, and faculty (Romero-Hall, 2017a).

Furthermore, logarithmic friend, follower, and tweet frequency metrics exhibited a linear relationship to one another and ID programs varied greatly in how much of their Twitter use consisted of retweeting others'

content and hashtagging. Based on these results, and given the limited literature on the use of social media by graduate programs, it is safe to assume that administrators of these accounts are still learning how to make use of these open forums of communication. The difference in friends, followers, and tweet frequency suggests that some programs lack an understanding of the commitment required to maintain and nourish an active social media presence. The result is an absence of cohesion in use between programs. Although research has served to establish the benefits of social media use in higher education such as enabling active learning, ease of sharing, and accessibility to dynamic platforms, the additional workload has been expressed as a major concern for students and faculty (DiVall & Kirwin, 2012).

Even though this study is informed by data from North American ID programs, ID programs in other geographical regions may find value in evaluating the degree to which these results apply to their own contexts. ID programs in Australia, for example, might explore whether the categories presented in Table 2 and the hashtags presented in Table 4 align with their own practices. The results presented here might also prompt reflection: Are there practices that Australian ID programs engage in on Twitter that are not captured in the results above? What might be the sources of such differences? Are such practices the result of regional differences, reflective practice, or local expertise, for example? Undoubtedly, regional and individual differences may exist (e.g., use of country-specific or program-specific hashtags), but the results presented here enable programs to compare their activity to international counterparts. Significantly, this study can be replicated in other regional contexts to examine whether and how results may differ across ID programs in other regions of the world.

Implications

These results highlight the diversity of purposes that Twitter accounts serve for ID programs. Whether promoting a program, reminding students and faculty about upcoming deadlines, or highlighting relevant research, ID program accounts appear to serve a variety of significant socio-academic purposes. This result leads us to wonder whether such activity is purposeful or whether it emanates from lack of a clearly defined plan pertaining to the purposes of this communication channel. We suggest that ID programs instigate this conversation at the program level and discuss the purposes of employing a departmental Twitter account. Table 2 provides an array of content that departments and programs can experiment with, but we believe that it is also important to explore what is missing from this table or what lacks sufficient representation. For instance, we see little evidence of departments or programs taking active steps to connect students with the broader community or with particular individuals. Again, this activity may be of interest to some programs but not others, and it is for this reason that discussions pertaining to the purposes of departmental and program accounts need to happen at that level. This research provides a first examination at the ways that ID programs use Twitter.

Limitations

A number of limitations faced this study. First, this investigation was limited to Twitter accounts of ID programs that were shared via a crowdsourced document during a specific period of time. It is possible that other ID program have Twitter accounts that are not represented here. As a result, findings might not be fully representative of ID programs overall. Second, as mentioned earlier in the paper, the study focused on public Twitter accounts. The ways that private Twitter (or other social media) accounts are used by graduate department/programs could be significantly different.

Future research

Further research is necessary. Productive avenues for future work might include analyses of the types of tweets that stakeholders find useful, examination of ID programs' intentions and decisions around types of content to share, investigations of how these results compare to use of other social media, and research on how other departments in other disciplines use Twitter or other social media tools.

Additionally, research can further explore the social media accounts of graduate department/programs across platforms (Facebook Pages, Facebook groups, Instagram accounts, LinkedIn groups, YouTube channels, Google+ communities, and others). Future research studies could include an analysis of content shared in public versus private accounts. Future research could also investigate the social media accounts of graduate department or programs within culture- or country-specific parameters.

Conclusion

This investigation focused on a qualitative and quantitative analysis of Twitter data retrieved from ID program/department social media accounts. A thorough literature review on the use of social media in higher education revealed a lack of pertinent literature on how graduate programs use institutional social media accounts. Yet, the literature examined also showed that graduate programs are creating social media spaces to communicate and engage with their students, faculty and other stakeholders. Three main research questions were addressed in this investigation, which focused on the type of content shared, the interactions (likes and retweets) between the ID programs and department Twitter accounts and users, and the relationships between the content shared and the different interactions with the accounts. A random sample of tweets (n = 1023) were gathered from public ID program and department Twitter accounts (n = 22).

The analysis of the data revealed that the use of institutional social media accounts of ID graduate programs and departments is still in it is infancy. The majority of the tweets focused on sharing resources. Yet, an important characteristic of the resources shared is their relevance to the members of the field. The results also highlight that a large number of tweets are about program promotion. Nevertheless, tweets discussing students and faculty stories had the most interactions (likes and retweets). Quantitative analysis of the Twitter accounts and tweets served to further support qualitative findings. Quantitative data also showed great variation between programs on number of followers, original content posted, retweets, and use of hashtags.

Finally, although the intention behind creating institutional social media accounts is good, the long-term sustainability of these accounts and usefulness needs further clarification and thought. It is not expected for ID graduate department or programs to have the same social media schemes and utility. Each ID program or department is unique. ID programs and departments must give careful consideration to the authentic desired outcomes of content shared in public Twitter accounts while keeping in mind stakeholders.

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