Teacher E-professionalism: An Examination of Western Canadian Pre-service Teachers' Perceptions, Attitudes, and Facebook Behaviours

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This study addresses the pressing need for attending to teacher e-professionalism, that is, the appropriate application of information and communication strategies when using digital media. The authors examine data patterns related to 113 pre-service teachers' perceptions of e-professionalism, attitudes towards existing technology-related professional guidelines, and current behaviours on Facebook. The results from the online questionnaire suggest that these Western Canadian pre-service teachers are uncertain about what online behaviours should be restricted and whether maintaining e-professionalism was possible. Integrated findings are discussed in light of communication privacy management theory. The paper concludes by advancing implications for informing e-professional education for teachers.

Cette étude adresse le besoin pressant pour assister e-professionnalisme d'enseignant, qui est, l'application appropriée de stratégies d'information et de communication lors de l'utilisation des médias numériques. Les auteurs examinent les configurations de données de 113 enseignants en formation liées à leurs perceptions d'e-professionnalisme, attitudes à l'égard des directrices professionnelles environ la technologie, et comportements actuels sur Facebook. Les résultats du questionnaire suggèrent que ces enseignants en formation de ouest canadiens sont incertains quant à ce que les comportements basés sur le Web devraient être limités et si maintenir e-professionnalisme était même possible. Les conclusions sont discutées utilisant une théorie de la gestion de la confidentialité des communications. L'article conclut en avançant des implications pour informer l'éducation d'e-professionnel pour les enseignants.

During his first week in a grade 5 classroom during his teacher training program, Chris finds himself on a school field trip to the zoo. As is his usual practice, Chris posts several times during the day on his publically accessible Facebook profile what he is doing and the animals he and the students encounter at the zoo. The next day Chris is called into the principal's office because a parent of one of the students drew the principal's attention to his posts.

Setting the Context

This vignette, describing a personal account that was shared anecdotally with one of the authors, represents just one of the many technology-focused dilemmas faced not only by beginning

professionals and those tasked with their preparatory training, but also established professionals and those tasked with enforcing the standards associated with a profession. Establishing professional workplace boundaries is not new, yet the nature of the fast-paced evolution of technology within the current digital age has placed new and ever-pressing demands on professional bodies and workplaces to adapt at an unprecedented speed. Evidence of this need is provided by the almost daily reports of scandals involving technology and the resulting professional and in some cases, legal, implications. Key among the pressing concerns within the teaching profession is the use of the internet for inappropriate declarations and communications. Among the diversity of inappropriate declarations are cases such as a high school teacher from California in 2013 who was reprimanded after using a social media site to express her desire to stab some of her students and pour hot coffee on them (Oakley, 2014). Another example is provided by a teacher from Pennsylvania in 2014 who was fired after describing her students as "frightfully dim" and their parents as "breeding a disgusting brood of insolent, unappreciative, selfish brats" on her blog (Balasubramani, 2014). Considered even more serious are examples involving the use of digital technology for facilitating inappropriate communications between students and teachers. Such a case occurred in Maplewood, New Jersey reported in the New York Times, where a female teacher was recently caught using technology to lure multiple male students into engaging in inappropriate sexual relationships (Zernike, 2014). These cases represent a call to action for enhancing teacher preparation for appropriate professional use of technology and guiding practices.

There is general consensus that traditional conceptions of professionalism involve a specific set of skills, knowledge, values, and expectations relative to a profession (e.g., Baer & Schwartz, 2011; Furlong, Barton, Miles, Whiting, & Whitty, 2000). Less agreement exists regarding the processes underlying the development of professionalism as well as the strategies for guiding development of professionalism. Indeed, developing professional expectations and preparing individuals for a professional role in the workplace has been, and continues to be, a complex issue for researchers all around the world (Neill & Bourke, 2010).

The term *e-professionalism* refers to the attitudes and behaviours reflecting traditional professionalism paradigms but manifested through digital media (Cain & Romanelli, 2009). Widespread agreement attributes the need for attending to workplace issues of e-professionalism to the increasingly integrated use of the internet and social networking as a means of communicating and accessing information (Kaczmarczyk et al., 2013). A noteworthy challenge is adjusting the daily use of technology within a new professional role; guiding practices can assist in this task (Valtonen, Dillon, Hacklin & Väisänen, 2010). A review of literature led us to focus the current study on teachers who are preparing to teach in the K–12 education system and will be in a position of authority. This is because e-professionalism was found to be a growing concern for teachers as well as for those responsible for upholding professional standards in the education field (e.g., Harte, 2011; Lei, 2009).

For the purposes of this research, e-professionalism involves a level of competence in relevant attitudes, knowledge, and skills for teachers to conduct themselves online in such a way that meets professional standards. Indeed, because of the ever-evolving nature of technology, policies and professional standards have been challenged to keep pace with emerging technological strategies and practices related to social networking sites (SNS). SNS allow individuals to establish and/or maintain connections with others typically by presenting themselves and their social networks. Facebook was a logical choice for this research because among existing SNS, Facebook has the largest number of users: 1.18 billion active users a month

and 81% of users being outside North America in places such as Europe, Australia, the Middle East, and Africa (e.g., Garner & O'Sullivan, 2010; Roblyer, McDaniel, Webb, Herman, & Witty, 2010). In short, the use of technology and social media are a necessity in today's world, so much so, in fact, that non-participation or un-involvement is almost considered to be a form of social exclusion and even social isolation (Megele, 2012). Thus, the more informed people are about these tools, the greater the opportunity these tools have to serve a beneficial and functional purpose in this world.

Overview of the Article

The ultimate goal of the current program of research is to enhance teachers' preparation for the evolving digital reality in which they live and work. To that end, three steps are necessary: (1) Seek an initial understanding of pre-service teachers' perspectives of e-professionalism, attitudes towards existing technology-focused policy, and current Facebook behaviours to inform why policies guiding e-professionalism are necessary, what practices should be considered in conceptualizing e-professionalism, and how e-professional education might contribute; (2) Develop and implement an integrated approach to e-professionalism education within programs offering teacher education; and (3) Assess the impact of the integrated approach on beginning teachers' technology practices once they enter the classroom. This paper reports the results of the initial stage of this research involving the use of an online questionnaire guided by the research questions: To what extent do pre-service teachers' (a) perceptions of e-professionalism align with their self-reported online behaviours on Facebook related to intensity and disclosure, (b) perceptions of e-professionalism correlate with their attitudes towards existing technology-related professional guidelines, and (c) attitudes towards existing technology-related professional guidelines reflect their self-reported Facebook behaviours related to intensity, disclosure, and privacy.

This article is organized into five parts. First, we undertake a brief overview of the literature pertaining to the 21st century opportunity for teacher education, emerging professional challenges within the digital age, how e-professionalism is currently guided within the teaching profession, and how Facebook behaviours can be assessed. Second, the theoretical framework guiding the study is introduced based on three essential components related to privacy management including privacy ownership, privacy control, and privacy turbulence identified by communication privacy management theory (Child, Haridakis, & Petronio, 2012; Petronio, 2002) followed by the study hypotheses. Third, the procedures involved in the survey design are described: participants and recruitment, instrument development and refinement, and data analysis. Fourth, the individual variable results are presented, followed by the relationship trends among variables organized by hypothesis. Finally, the article concludes with descriptions of the theoretical and practical implications related to why policies guiding e-professionalism are necessary, what practices should be considered in conceptualizing e-professionalism, and how e-professional education might contribute.

Literature Review

21st Century Opportunity for Teacher Education

A need exists for teacher education to adapt to the emerging trends of the 21st century if it is to

maintain relevancy (e.g., Darling-Hammond, 2010; Futrell, 2008). We argue that technology is a key trend requiring attention because of the growing literature supporting the need for preparing teachers for the digital reality in which they live and work (International Association for K–12 Online Learning, 2013). Indeed, Hokka and Entelapelto (2014) describe a "global consensus that teacher education must be improved and resources and obstacles to developing teacher education need to be elaborated if it is to meet the challenges of the 21st century" (p. 39). Recent literature identifies teacher preparation as one of the three trends supporting the desired outcomes not only for the knowledge society in which we currently live but also for the one which has yet to be imagined (Cochran-Smith & Villegas, 2015; Cochran-Smith et al., 2015). One way to do this in the digital age is to integrate teaching and modeling into teacher training programs (International Association for Technology Education Standards for Teachers and Students, 2008a, 2008b).

Emerging Professional Challenges within the Digital Age

Calls for further investigations about how people manage their personal lives and professional obligations in the digital age warrant attention (Garner & O'Sullivan, 2010). The digital age refers to the widespread proliferation of emerging information and digital technology introduced near the end of the 20th century that became prevalent during the 21st century (Alberts & Papp, 1997). Given how dominant online forms of communication have become, the limited studies across the professions focused on e-professionalism is surprising and requires remedying. A study, such as the focus of the current paper on pre-service teachers, provides a place on which to build and further consider the skills teachers will need for successful professional navigation in the 21st century.

The focus on maintaining e-professionalism is based on literature pointing to the relationship between previous experiences and perspectives about the importance of behaving professionally to impact the learning and behaviour of those entering a profession (Baernstein, Oelschlager, Chang, Wenrich, 2009; White, Kirwan, Lai, Walton, & Ross, 2013). Although little research related to e-professionalism currently exists specifically with respect to pre-service teachers; a growing literature within the health fields can serve as a guide for conducting such research. Specific concerns identified for medical students are the professional implications of decisions related to their online behaviour on maintaining (a) current policies guiding e-professionalism, (b) personal privacy across internet and social media platforms, and (c) confidentiality during online disclosures (Greysen, Kind, & Chretien, 2010; Osman, Wardle, & Caesar, 2012; Antheunis, Tates, & Nieboer, 2013).

Guiding e-Professionalism within the Teaching Profession

Successful entry into any profession is a crucial transition. Within the teaching profession this transition is especially important because of a teacher's role as a model of appropriate behaviour for students. Indeed, a recent international study found that according to most Swedish and Turkish teachers, the most influential method of teaching values was to "be a good role model as a teacher in everyday interactions with students" (Thornberg & Oğuz, 2013, p. 52). Thus, teachers have a unique relationship with the public and play a crucial role in shaping and modelling the future generations of children. The International Society for Technology Education published two types of standards as a guide for teachers (ISTE, 2008a) and for

students (ISTE, 2008b). Of particular note in the teacher standards is the focus on lifelong learning as well as modelling use of new technologies in ways that are safe, ethical, and responsible.

Given the prevalent use of digital media, it is both logical and encouraged for teachers to integrate the use of the internet and the use of social media into their classrooms. With the increased use of digital media in the classroom, greater responsibility is being placed on teachers to guide their students to be good 'digital citizens' by upholding certain standards of online behaviour. Hollandsworth, Dowdy, and Donovan (2011) state:

> When students are faced with difficult decisions or questionable use of content, they must have the tools in which to handle these circumstances. Awareness, education, and action are required in order to give students a base of knowledge and a code of conduct, to support them in this digital society. (p. 40)

Thus guiding students in the practices of digital citizenship requires clarity related to the professional obligations of teachers when using these mediums both within and outside the classroom (Rienties, Brouwer, & Lygo-Baker, 2013).

One motivation for the present study was our discovery of an increased trend of technology-related professional misconduct cases during the past two decades from the British Columbia College of Teachers. This review revealed the number of technology-related misconduct cases involving inappropriate internet use increased from 5% to 95%. Given the increased use of social media, it is not surprising that many of the internet-related misconduct cases involved inappropriate pictures and videos (McCallum, Zhang, Poth, & Klassen, 2012). Similarly, an ever-growing literature is emerging related to the inappropriate use of social networking sites and the resulting professional implications for teacher's credibility. One study involved a pre-service teacher being unaware that the content of a submitted assignment involving postings of unsuitable photos to his social networking site was inappropriate (Carter, Foulger, & Ewbank, 2008). Another study reported the inappropriate use of Facebook by medical students' posts involving swearing, sexual innuendos, "patient quotes of the day", and pictures depicting heavy drinking (White, Kirwan, Lai, et al., 2013). These illustrative studies point to just a few of the struggles many pre-service professionals are grappling with about how to appropriately merge their personal and professional identities (Greysen, Kind, & Chretien, 2010; Hutchens & Hayes, 2014).

Concern for behaviours associated with e-professionalism is gradually becoming a topic of global discussion in the field of education (e.g., Barrett, Casey, Visser & Headley, 2012; Harte, 2011). One example, a UK-based organization called Childnet International, has undertaken exploratory work related to the online experiences of students, parents, teachers, and other professionals with the aim of educating about the risks of internet use. Their work with teachers has focused on protecting professional reputations by providing information about how to use technology in a professional and safe way both at home and in the classroom. Specific recommendations were provided about "befriending" students on social networking sites and the importance of privacy settings (Childnet International, nd). Harte (2011) has provided similar recommendations to early-care and education providers with the caution "one click undoes years of professionalism" (p. 5). In addition to providing information about the benefits and risks of technology, Harte outlines teachers' ethical and professional responsibilities, professional development, and strategies for maintaining e-professionalism. A similar example

of a US-based organization is ConnectSafely who released "The Educator's Guide to Social Media", with the aim of helping K–12 educators understand how to better use social media in both their professional development and professional regulation (Magid & Gallagher, 2015).

Current efforts within the Canadian teaching context related to guiding e-professionalism are limited but warrant further consideration. At a national level, the Canadian Teachers' Federation (CTF) regularly updates a handbook described as "a compilation of the Constitution, and all By-laws, Policy and Regulations" (http://www.ctf-fce.ca). Beginning in 2008, the teacher handbook has encouraged teachers to model appropriate cyber-conduct and to familiarize themselves with actions and responses related to cyber-conduct through professional development and in-service opportunities. Teachers are also directed to assess and appropriately respond to incidents of cyber-misconduct and/or cyber-bullying among students or between student(s) and the teacher (Canadian Teachers' Federation, 2012).

A growing awareness of technological issues have emerged and resulted in publications and professional advisories within the Canadian provinces of Alberta and Ontario. In Alberta, among the pressing issues identified are "venting" in a public forum, using personal technology while teaching, interacting with students online, and social networking as a danger zone (Heckman, 2010). The author warned teachers to tread carefully with technology pointing to the Alberta standards of professional conduct for teachers (Alberta Teachers' Association, 2010).

In Ontario, advice and guidance for in-service teachers about responsible and professional use of electronic communication and social media is provided through the publication titled *Professional Advisory on the Use of Electronic Communication and Social Media* (Ontario College of Teachers, 2011). Among the practices suggested for maintaining professional boundaries in all communications with students are avoiding exchanging personal information in texts and photos, declining student-initiated "friend" requests, and refraining from issuing "friend" requests to students. In addition, teachers are advised to assume that information posted can be accessed or altered, to check privacy and security settings frequently, and to avoid online criticisms of students or anyone within the school community. Within a year of its implementation, a membership survey revealed 60% of respondents were familiar with the advisory and 45% reported its guidelines as useful. Given that past research indicates that "teacher professionalism is what teachers and others experience it as being, not what policy makers and others assert it should become" (Hargreaves & Goodson, 1996, p. 22), a logical next research step is to seek an understanding of what a sample of teachers consider as appropriate Facebook behaviour.

Assessing Current Use of Facebook

Use of SNS has exploded during the past decade; measuring intensity and disclosure have emerged as indicators of use. As the most populous SNS, Facebook has over a billion monthly active users, with just under half of whom log in on any given day. Because of its global reach (i.e., 75% of the Facebook user population are located outside the US), Facebook has been described as "one of the most important trends of the past decade" (Caers et al., 2013, p. 983). As a platform for communication, Facebook provides a medium for users to make new friends and to interact with them through the use of features such as a news feed (streams of content shared by friends), instant messaging (private written communication among users), wall posts (messages posted directly on a user's profile), sharing text, photo, and video content. Personal networks are created by requesting and accepting requests to become "friends," thus giving

access to another user's postings. Different privacy settings allow the user to limit access along a continuum from anyone (i.e., public) down to only select groups (i.e., friends, friends of friends, or "only this group of friends").

Literature related to use of Facebook—including intensity and disclosure—are among the areas of current study (e.g., Caers et al., 2013). Indeed, reasons for use and amount of use (i.e., intensity) as well as levels of privacy and the nature of personal information, postings, and photos (i.e., disclosure) have been linked with professionalism across various disciplines including medicine and teaching (e.g., MacDonald, Sohn, & Ellis, 2007; Steinbrecher & Hart, 2012). Specifically, a survey of medical students undertaken by Garner and O'Sullivan (2010) revealed that medical students engaged in similar Facebook behaviours that were perceived as unprofessional by colleagues (e.g., posting photos of alcoholic binge drinking and discussions around clinical experiences with patients). Further, although the potential professional implications of such inappropriate behaviours and posts were acknowledged, the behaviours were justified by being of a personal, not professional, nature. Taken together, it seems knowledge of what is considered to be unprofessional conduct did not affect Facebook behaviour, which contributes to the call for profession-specific standards.

Theoretical Framework

We use communication privacy management theory (Petronio, 2002) as the overarching theoretical perspective from which we conceptualize pre-service teachers' approaches to e-professionalism. In this instance, we consider an approach as a manifestation of perspectives, attitudes, and behaviours. Communication privacy management theory identifies three essential components related to privacy management including privacy ownership, privacy control, and privacy turbulence (Child, Haridakis, & Petronio, 2012; Petronio, 2002). Its suitability for application within the online context is well established (Frampton & Child, 2013; Metzger, 2007).

Privacy ownership refers to the proprietorship of information; when information has not yet been shared with others it is considered to reside within an individual's privacy boundary. In contrast, once access to this information is granted to others (i.e., it is disclosed), it becomes part of a collectively-owned privacy boundary. Within an online environment, this boundary is breached when, for example, an individual posts private information on Facebook—it instantly becomes co-owned by those who have access to that information (i.e., his or her Facebook friends). For teachers, this means careful monitoring of who has been granted access to information in addition to what information is disclosed within an online context.

Privacy control describes the way in which an individual regulates his or her private information. Some disclosures within online environments can have unintended consequences when, for example, an individual interacting online discloses personal information in an inappropriate setting or to an unsuitable audience. For teachers, inadvertently increasing intimacy, traversing the personal boundary, creating vulnerability due to loss of control of information, and breeching the rule-based management system can create problems for them in their professional lives.

Privacy turbulence describes the resulting tensions between online privacy and disclosure which result in negative consequences for the individual. When online disclosure occurs it can negatively impact individuals professionally—for example, when an individual's online interactions contravene professional standards. For teachers, this can lead to disciplinary

actions affecting their ability to continue working in the teaching profession. Together, the three essential components of communication privacy management theory provide a framework for considering teachers' perspectives of e-professionalism, attitudes towards existing technology-related professional guidelines, and current online behaviours on Facebook.

Current Study and Hypotheses

The relationship between these conceptual ideas and theory guide our approach to this quantitative research and our specific hypotheses. First, we hypothesize that no relationship between pre-service teachers' perceptions of e-professionalism and their current Facebook behaviours (intensity and disclosure) will be found. Second, we expect a positive correlation between pre-service teachers' perspectives of the importance of maintaining e-professionalism and agreement with the existing technology-related professional guidelines. Finally, we hypothesize that no relationship will be found between pre-service teachers' extent of agreement with the existing technology-related professional guidelines and their current Facebook behaviours (intensity and disclosure).

Methods

Participants and Recruitment

The study drew its 113 convenience sample of participants from the Faculty of Education's participant pool at a large, research-intensive university in western Canada during fall 2012. Following receipt of ethical approval by its Institutional Review Board, participants were invited through class announcements and received research credit. Participants were sent the online questionnaire link by a research assistant in response to an email indicating their interest in participating. Students were informed that by choosing to begin the survey, they were consenting to their participation and could stop the survey at any time without penalty. A reminder email was sent after two weeks, and at the end of the one-month administration period, the survey had a 100% response rate of students who began the survey and 4% missing data.

The majority of respondents identified themselves as female (69%), enrolled in the four-year bachelor of education program (91.5%), and pursuing the secondary education program stream (64.2%). With the median respondent age of 20 years, 86.8% had yet to complete their first teaching practicum. Almost all respondents (98%) agreed that they were familiar with professional expectations for teachers with the majority (90%) agreeing with those stated standards. The convenience sample is drawn from a larger population of 450 and our population statistics tell us that this sample appears to be representative of the gender ratio and age of the student population (71% female; median age 20.6).

Participants were familiar with the internet and SNS, with 99% reporting daily use of the internet and most of those (91.2%) reporting use of more than one hour per day in the past week. Similarly, the vast majority of participants (97.3 %) were current users of a SNS, using it primarily for communicating with others (65.4 %) and accessing websites (55.7%). Facebook was the most popular SNS by far when compared with Twitter and LinkedIn, as all respondents reported having created a Facebook account and 98.2% reported maintaining an active account.

Instrument Development and Refinement

An online questionnaire was used because of its efficiency in collecting a large amount of data in a short time and its cost-effectiveness to administer (de Vaus, 2001). The questionnaire was organized into four sections (i.e., Perceptions of e-Professionalism, Attitudes towards Existing Technology-related Guidelines, Use of Facebook, and Demographics) involving 137 selected response items. Unless otherwise indicated, respondents were asked to indicate the extent of their agreement using a 5-point Likert scale (i.e., strongly disagree, disagree, neutral, agree, strongly agree) on a combination of validated measures and researcher-created items.

The first section documented pre-service teachers' self-reported perceptions of e-professionalism using eight researcher-created items adapted from a similar study for medical students (Ross, 2013). Items asked about the risks of online interactions and how a teacher should behave online; for example, "teachers are never free to let their guard down when online" and "my online activity has no relationship to who I am as a teacher."

The second section assessed pre-service teachers' attitudes towards existing technology-related guidelines using 15 items adapted from the Professional Advisory for use of Electronic Communication and Social Media (Ontario College of Teachers [OCT], 2011). Multifaceted statements were turned into multiple items; for example, the statement "it is unfavourable for teachers to exchange personal email addresses and photos with students." Separating multifaceted items enabled respondents to indicate their attitudes towards email and photos separately.

The third section related to Facebook behaviour, using eight items to assess intensity of Facebook use and 66 items to assess the extent of disclosure on Facebook. Ellison, Steinfield, and Lampe's (2007) Facebook Intensity Scale (Cronbach's alpha = .83) was used to assess the extent of engagement in Facebook activities and emotional connectedness to the site. The former was assessed using two self-reported items related to Facebook behaviour (the number of Facebook "friends" and the amount of time spent on Facebook on a typical day) whereas emotional connectedness included rating agreement on six items.

The extent of disclosure was measured by adapting the content analysis method used by MacDonald, Sohn, and Ellis (2007) on publically accessible Facebook accounts (i.e., Facebook information page, wall, and photos) to asking participants to self-report their behaviour and privacy settings. Examples of such items related to comments and photos included: "What kind of comments do you post, or do you allow to be posted, on your account? Check all of the following that apply." Participants were asked to check all of the items that applied their own profile related to (a) content of personal information, wall comments, posted photos, (b) who was allowed access, and (c) current and past privacy settings.

Additional items were generated to gather information about respondents' general internet use (e.g., what activities they are conducting on the internet, how often they engage in these activities). Items related to use of SNS allowed researchers to assess breadth and frequency of access to other SNS to confirm Facebook as the most popular.

The questionnaire was piloted and then refined in response to feedback prior to being administered. Three students who had completed their initial teacher education individually used a think-aloud protocol (Willis, 2005) to verbalize their thought processes as they read aloud each item and the researcher recorded their thoughts. Any issues related to wording and grammar was also addressed.

Data Analysis Procedures

Descriptive statistics were generated at the item level for perceptions of e-professionalism and current Facebook behaviours using IBM SPSS Statistics 22. The frequency of responses was first calculated for each item, reviewed for specific patterns and trends, and some categories collapsed (i.e., strongly agree and agree as well as strongly disagree and disagree became agreement and disagreement categories). To reduce the complexity of the item sets for the final section of the questionnaire, an exploratory factor analysis was conducted. First, a principal components extraction was performed to identify the dominant factors. The Kaiser rule (retaining the number of components with eigenvalues greater than 1) and Cattell's Scree test suggested there were five factors related to the attitudes towards existing technology-related guidelines. Principal axis factoring and oblique transformation (direct oblimin technique) were employed to obtain a factor pattern that exhibited simple and interpretable structure for each section: all the loadings below .30 were suppressed. Finally, to assess relationships between each of the three variables (perceptions, attitudes, and Facebook behaviour) as well as within Facebook behaviour (intensity and disclosure), correlational procedures including computing a Pearson product-moment correlation coefficient were performed.

Results

This section is organized first by reporting the descriptive statistics related to perceptions of e-professionalism, attitudes towards technology-related professional guidelines, and current Facebook behaviours, followed by describing the relationship trends among those variables.

Self-Reported Perceptions of e-Professionalism

Discrepancies exist between the perceived importance of maintaining a standard of e-professionalism and the feasibility of maintaining such standards. Evidence of these differences is the agreement by a majority of respondents (94.7%) about the importance of behaving professionally online yet agreement by few respondents (28.3%) that it was possible to maintain e-professionalism (see Table 1). Another area of high agreement by the majority of respondents (92%) was a shared concern for the professional implications of their online behaviour; people will make judgments about a person based on what they find online. Yet, noteworthy are differences in how pre-service teachers associated online behaviour with their professional teacher role: approximately two-thirds of respondents (65.5%) agreed that teachers are never free to let their guard down when interacting online and only half the respondents (50.4%) agreed that their online activity had no relationship to their professional role as a teacher. Further areas of general consensus were related to the risks associated with social media use by teachers (e.g., Facebook). No respondents agreed that banning use was necessary and only 10% agreed that the use of social media by teachers should even be discouraged.

   Taken together, these results suggest a perceived need for teachers to practice e-professionalism. This is encouraging in that many pre-service teachers are aware that current colleagues and parents as well as future employers may render character judgments based on from their online behaviour. Yet the inconsistent agreement among respondents in items requiring personal judgments about online behaviours suggest that pre-service teachers are uncertain about their professional expectations in general and specifically related to teacher use

Table 1

Pre-Service Teachers' Self-Reported Perceptions of e-Professionalism

Items	Strongly Disagree & Disagree (%)	Neutral (%)	Strongly Agree & Agree (%)	Mean (of 5)	Standard Deviation
Professionalism is as important when online compared with off-line environments.	1.8	3.5	94.7	4.3	0.6
I think that people will make judgments about me based on information they find online.	0.9	7.1	92.0	4.3	0.7
Teachers are never free to let their guard down when online.	8.0	26.5	65.5	3.6	0.9
It is not always entirely possible to maintain professionalism when online.	51.4	20.4	28.3	2.8	1.1
The risks of social media (e.g., Facebook) far outweigh the benefits and its use by teachers should be DISCOURAGED.	68.1	21.2	10.6	2.4	1.0
The risks of social media (e.g., Facebook) far outweigh the benefits and its use by teachers should be BANNED.	92.8	7.1	0.0	1.6	0.6
My online activity has no relationship to who I am as a teacher.	50.4	28.3	21.2	2.7	1.0
I should be able to do whatever I want online.	61.1	24.8	14.2	2.3	1.0

Note. (*n* = 113)

of the internet and social media. This uncertainty may account for an underlying apprehension about how their new professional responsibilities might impact their online activities.

Attitudes towards Existing Technology-related Professional Guidelines

Pre-service teachers agree with the existing technology-related guidelines with a high degree of consensus about the need for engaging in appropriate online interactions and thus avoiding professional risks by maintaining privacy and boundaries. A five-factor pattern emerged from the analysis accounting for 45.9% of the total variance in the items that focused on pre-service teachers' attitudes towards the existing OCT guidelines (see Table 2). Factor 1 is related to the professional risk teachers take when interacting online (factor mean score = 3.5). Factor 2 points to the professional responsibility teachers must consider in their online privacy settings (factor mean score = 4.6). Factor 3 involves the professional consequences of inappropriate online behaviour (factor mean score = 4.3). Factor 4 has to do with the professional role as teachers who must adhere to professional standards when posting information online (factor mean score = 4.2). Factor 5 emphasizes the professional boundary teachers establish and maintain during online communication with students (factor mean score = 3.8). It is noteworthy that the highest factor mean score emphasizes teacher professional responsibility: the majority agreeing that teachers should maintain e-professionalism by behaving online appropriately (factor 2). The lowest factor mean score was focused on the professional risk to teachers: high levels of disagreement that teachers can forget their professional standards when interacting online (factor 1).

Table 2

Surveyed Attitudes toward Technology-Related Guidelines

Items reflecting attitudes towards guidelines	Item Mean	Factors				
		1	2	3	4	5
1. The use of social networking sites, despite best intentions, may cause teachers to forget their professional responsibilities and the unique position of trust and authority given to them by society.	3.3	.88				
2. The use of the Internet, despite best intentions, may cause teachers to forget their professional responsibilities and the unique position of trust and authority given to them by society.	3.4	.77				
3. Once a teacher posts information online, he or she relinquishes control of that information.	3.8	.53				
4. It is important for teachers to monitor their privacy settings (e.g., who is able to view and/or post on their social networking account).	4.7		.85			
5. It is part of a teacher's responsibility to communicate PERSONAL boundaries to his or her students around appropriate online behaviours when communicating with him or her.	4.4		.54			
6. It is important for teachers to ensure that the privacy settings for content and photos are set appropriately.	4.7		.63			
7. Inappropriate email conversations between a teacher and/or students, colleagues, guardians, employers, family and friends expose the teacher to the possibility of disciplinary action.	4.3			.79		
8. Inappropriate online conversations between a teacher and/or students, colleagues, parents/guardians, employers, family and friends, etc., expose the teacher to the possibility of disciplinary action.	4.2			.61		
9. It is acceptable for a teacher to post information online about a student, as long as they are not "friends" with them on Facebook or any other social networking site.	4.5				.70	
10. It is acceptable for a teacher to post information online about a student, as long as they don't refer to the student by name.	3.9				.64	
11. It is part of a teacher's responsibility to alert students about appropriate online behaviour including use of comments and images.	3.9					.56
12. It is unfavourable for teachers to exchange personal email addresses with students.	3.6					.44
13. It is unfavourable to exchange photos of a personal nature with students.	4.1					.39
14. When a teacher and a student become "friends" in an online environment, the dynamic between them is forever changed.	3.5					.39
% of total variance explained		12.5	10.6	8.2	8.0	6.7
Factor mean score		3.5	4.6	4.3	4.2	3.8

Note. (*n* = 113) Extracted from principal axis factoring applying rotated transformation.

Overall, our findings indicate a high degree of agreement related to the existing OCT guidelines, which is encouraging because of the potential of such policy to provide a starting point on which to build an Alberta-specific policy. Specifically, our findings indicate a degree of consensus about the professional responsibilities inherent to a teacher's role related to

maintaining a high level of privacy settings, controlling the type of information posted, and limiting the nature of student interactions. Similarly, our findings point to the professional risks and disciplinary consequences when professional standards are breached.

Facebook Behaviour

When intensity of Facebook use was examined; the analysis revealed overall high levels of engagement in Facebook activities reported by pre-service teachers, yet moderate levels of emotional connectedness with the Facebook community. A high level of engagement is evidenced by the daily Facebook use reported by the majority of respondents (91%); of which 57% reported spending more than an hour on the site each day of the previous week. The two most common purposes for pre-service teachers to use Facebook were personal communication with friends and family and planning or learning about upcoming events. A moderate level of emotional connectedness is indicated by the agreement of only half the respondents to feeling in touch and part of the community on the site (see Table 3). These results, suggesting greater intensity with respect to engagement than emotional connectedness, point to respondents' regular participation within an online community yet limited attachment to its use.

When the nature of disclosure on Facebook was examined, the findings point to overall high rates of posting personal information (as reported by pre-service teachers) yet the majority of respondents described regulating the nature of content and access to the information. It was common practice for pre-service teachers to share personal information and post messages in addition to photos on their Facebook profile page that were reflective of daily life. Whereas the most common personal information disclosed was birthdays and school/university attended (85% of pre-service teachers), the least commonly shared information was address and political views (3.6% and 15.3% respectively). Approximately a third of respondents shared their relationship status, home town, and current town of residence whereas just less than half of respondents disclosed interests, email addresses, sexual orientation, and employment details. When asked about the nature of messages they post on Facebook, the majority of participants (79.8%) reported posting exciting news whereas just less than half of respondents (49%) posting sayings or quotes and plans not involving alcohol. This contrasts with few respondents who reported posting messages about plans involving alcohol (10.6%) and with potentially offensive language (11.5%). The most common types of photos respondents reported posting were

Table 3

Pre-service Teachers' Self-Reported Facebook Intensity

Items	Strongly Disagree & Disagree (%)	Neutral (%)	Strongly Agree & Agree (%)	Mean (of 5)	Standard Deviation
Facebook has become part of my daily routine	14.4	9.0	76.5	3.9	1.1
Facebook is part of my everyday activity	18.0	11.7	70.2	3.9	1.2
I feel out of touch when I haven't logged onto Facebook for a while	36.0	17.1	46.8	3.1	1.3
I feel I am part of the Facebook community	19.8	28.8	51.3	3.4	1.0
I am proud to tell people I'm on Facebook	9.0	48.6	42.3	3.5	0.9
I would be sorry if Facebook shut down	28.8	22.5	48.6	3.3	1.2

Note. (*n* = 111)

vacation/travel (93.5%) and photos of family and friends (88%); very few indicated that they post photos with potentially offensive/unprofessional content (1.9%) or photos with excessive drinking (8.3%). Just less than half of respondents reported posting photos of their daily activities (49.1%) and of their significant other (45.4%). Notably, however, approximately a third of participants (32.4%) indicated posting photos of partying (e.g., drinking or dancing at the bar).

Most pre-service teachers reported access to their Facebook profile to be limited to those they knew and actively denying access to others. Indeed, only a small number of respondents (6.3%) allowed public access whereas the majority reported having limited access to friends (92.8%) and friends of friends (16.2%). The most common range of number of friends listed by a third of the pre-service teachers was between 200 and 350 (31.5%), followed by 50 to 200 (24.3%), and 350 to 500 (18.9%). Pre-service teachers were mostly likely to both request and accept "friend" requests with friends, family, and work colleagues when compared with other users (see Table 4). Common across all relationships was the finding that pre-service teachers reported accepting requests more frequently than making requests; differences were particularly noteworthy with work colleagues and with someone who has authority over them. Few pre-service teachers would accept or request access to someone who they had authority over or who they had not met. It is interesting to note that most participants (88.2%) had altered their Facebook privacy settings; among the most common reasons were: to protect their information from strangers (93.3%), not trusting Facebook's use of posted information (55.2%), risk of being viewed by admissions committee or potential employers (51.4%), and serving in a position where they were viewed as a role model (52.4%).

When the relationship between intensity of Facebook use and nature of disclosure on Facebook was explored, a positive correlation was revealed ($r = .447$, $p < .01$). This finding may suggest that the more intensely someone uses Facebook, the more likely they are to disclose material on Facebook related to personal information, comments, and photos. This relationship might not be surprising, given that greater intensity would provide a greater number of opportunities for disclosing information, including posting comments and photos.

Table 4

Pre-Service Teachers' Self-Reported Behaviours Related to "Friend" Requests on Facebook

Nature of Relationship	Accepting "friend" requests (%)	Posing "friend" requests (%)
Friend	99.1	98.2
Immediate family	95.5	89.0
Extended family	94.6	82.6
Work colleague	82.0	66.1
Friend of a friend	46.8	32.1
Someone who has authority over you (e.g., employer, supervisor, teacher, professor)	42.3	21.1
Someone I just met	39.6	27.5
Someone who you have authority over (e.g., Sunday school students, piano students, players you coach)	20.7	11.0
Someone who I do not know and have never met	4.0	5.5

Note. ($n = 111$)

Taken together, these findings suggest that most pre-service teachers regulate the nature of the information posted on their personal profiles and guard who can access the information. Specifically, the findings indicate the type of information disclosed by pre-service teachers tends to be reflective of ordinary life events; for example, birthdate, exciting news, and photos of vacation/travel. Further, fewer pre-service teachers report disclosing information commonly deemed professionally risky such as profanity or photos involving excessive drinking. It is important to note some of the information disclosed (e.g., relationship status, sexual orientation, and email addresses) could have unintended implications if access was granted to those unfamiliar to the disclosers as well as to those with whom the disclosers have authority over.

Relationships among Perceptions and Facebook Behaviours

A Pearson product-moment correlation coefficient was computed to test the first hypothesis. No correlation between perceptions of e-professionalism and Facebook intensity was found ($r = .176$, $p > .05$). Yet a positive correlation was revealed between perceptions of e-professionalism and Facebook disclosure ($r = .227$, $p < .05$). A lack of correlation suggests that the extent to which pre-service teachers perceive the importance of e-professionalism has no significant relationship with intensity of Facebook use, whereas evidence of a positive correlation suggests that those who perceive a need to maintain e-professionalism are more likely to report higher levels of disclosure on Facebook. These results are different from our first hypothesis that no relationships would be found; instead, the existence of a positive relationship between Facebook disclosure and perceptions of e-professionalism might be attributed to pre-service teachers who frequently disclose material on Facebook being more aware of the potential risks and implications associated with their behaviour.

Relationships among Perceptions and Attitudes

A Pearson product-moment correlation coefficient was also computed to test the second hypothesis. No correlation was found between pre-service teachers' perceptions of e-professionalism and attitudes towards existing technology-related professional guidelines ($r = .038$, $p > .05$). The results do not support our second hypothesis; rather our findings suggest that the need to maintain e-professionalism has no relation to pre-service teachers' attitudes towards existing technology-related professional guidelines. This finding may reflect inattentiveness to the dual professional roles teachers assume as both users and role modellers of how to appropriately integrate SNS and technology into their lives and classrooms.

Relationships among Attitudes and Facebook Behaviours

A final Pearson product-moment correlation coefficient was computed to assess the third hypothesis: examining the relationship between pre-service attitudes towards existing technology-related professional guidelines and Facebook behaviour (intensity and disclosure). No correlation was found between pre-service teachers' attitudes towards existing technology-related professional guidelines and Facebook intensity ($r = .017$, $p > .05$) or those attitudes and Facebook disclosure ($r = -.019$, $p > .05$). A lack of correlation suggests that pre-service teachers' attitudes towards existing technology-related professional guidelines have no relationship to

their current use of Facebook. These findings, summarized in Table 5, provide support for our third hypothesis: our findings indicate that pre-service teachers to some degree associate the importance and need for guidance in their own personal disclosures and actions with their new professional role.

Discussion

Our results draw attention to two areas, which provide the organizing structure for the discussion.

Developing Shared Understandings of Teacher e-Professionalism

Our findings support the perceived need for behaving professionally online yet reveal uncertainty about what it means to maintain an e-professional standard within the teaching profession. A logical place to start developing a shared understanding of teacher e-professionalism would be considering how e-professionalism extends existing understanding of teacher professionalism. In this study, evidence that pre-service teachers possess some understanding of their professional roles as teachers is evident from their reports of being aware of the potential professional risks associated with use of social media. Indeed, pre-service teachers provide evidence of their efforts to regulate their use of Facebook (i.e., intensity) and the nature of information shared online (i.e., disclosure). The prevalent use of Facebook for communicating was aligned with the use described by Ellison, Stanfield, and Lampe (2007) as the site simply provides a medium for staying in touch but not primarily as a source for community building. The study finding of few pre-service teachers sharing information, messages, and photos is a surprising departure from some of the recent trends related to nature of posted photos. Specifically, a US-based study by Steinbrecher and Hart (2012) of pre-service teachers as well as an earlier study of recent graduates from medicine (MacDonald et al., 2007) previously found a higher occurrence of pictures depicting excessive alcohol consumption and sexually suggestive photos on participants' Facebook pages.

Active management of privacy levels and limiting access to personal Facebook profiles reported by a majority of pre-service teachers was encouraging and points to the understanding of a teacher's role as a figure of authority as a professional. Similar findings have also been found across other professions; for example, general consensus among US psychologists was found on the importance of refusing friend requests from students and patients to avoid disclosure (Taylor, McMinn, Bufford, & Chang, 2010). Considering the risks posed by online social media and the risks of boundary crossing, refusing requests was also encouraged in the

Table 5

Correlations between the Perceptions, Attitudes, and Online Behaviours of Pre-Service Teachers

	Attitudes	Perceptions	FB Intensity	FB Disclosure
1. Attitudes	—			
2. Perceptions	.038	—		
3. FB Intensity	.017	.176	—	
4. FB Disclosure	-.019	.227*	.447**	—

*Note. *p* < .05 level; **p* < .01 level

field of nursing (Aylott, 2011). Indeed, the need to be wary of connecting online with others is reassuring given the cautions reported by recent studies. For instance, the inappropriate use of online mediums such as Facebook to communicate with students was given as a leading cause of teacher professional misconduct cases (McCallum, Zhang, Poth, & Klassen, 2012). Attending to these risks (that is, altering privacy settings to protect information from strangers or future employers) contrasts with thinking about what can be expected from the beginning pre-service professionals. A study involving recent graduates from medicine found just under half had neglected to have any privacy settings at all, which in turn raised concern about the potential altering of the professional boundary between patients and physician, and even risking the reputation of the profession of medicine (MacDonald et al., 2007).

Having clear standards related to one's professional roles and responsibilities can be helpful in guiding behaviour. Indeed, Aylott (2011) forwards that when nurses are clear about their role as professionals, they are more likely to use better judgment to guide their Facebook behaviours. Medical researchers found that a lack of agreement regarding professional standards served as a barrier to physicians adhering to the standards of the profession (Cabana et al., 1999). Communication privacy management theory (Petronio, 2002) posits that in order to fully understand the rules around privacy and disclosure, one must understand the three essential components to privacy management as well as the ways in which their own privacy boundaries are constructed (e.g., cultural influences, individual motivations, and risk-benefit calculations) (Frampton & Child, 2013; Petronio, 2002). One study found that working professionals who had set up personal privacy rules were 1) more likely to extend these rules into their professional role, 2) were more concerned with protecting themselves, and 3) were more likely to ignore or disallow Facebook friendships with co-workers (Frampton & Child, 2013).

E-professional standards must be collectively agreed upon and considered as evolving in response to the ever-evolving nature of technology in order to remain relevant for informing policy and practices in a future that has yet to be conceived. Further research is needed to build a shared understanding of a theoretical definition of the construct of e-professionalism within the Canadian teaching profession.

Defining Boundaries for Policies Guiding Teacher e-Professionalism

Our findings indicate a high degree of support for creating technology-related professional standards and high levels of agreement with the existing e-professional guidelines. Together, these findings have important implications for providing an important starting place for developing guiding technology-related policy. When learning to balance personal freedom with professional responsibility, policies articulating appropriate behaviours and potential consequences can be helpful for considering current online activities in light of a new professional role. Pre-service teachers view guidelines as a means of regulating their own behaviour.

Communication privacy management theory's (Petronio, 2002) second essential component—privacy control involving establishing privacy rules—provides support for efforts to attain consensus related to technology-related guidelines. This is because when rules are agreed upon, it is more likely for privacy turbulence to decrease and boundary coordination to increase. The influence of a lack of agreement towards professional guidelines that hindered physicians' adherence to the standards of the profession is highlighted by a systematic review conducted on physician adherence to practical guidelines (Cabana et al., 1999). Considering the current

study's findings in light of Cabana et al.'s (1999) study, points to the need for future research for developing technology-related policies relevant to the professional standards and technology implementation practices where teachers work.

Implications for Teacher e-Professional Education

Our study revealed two important considerations for informing teacher e-professional education related to building awareness of potential professional consequences and greater attention to dual professional roles. First, opportunities for learning about professional standards and guiding policies, as well as consequences for breeching them, are important parts of developing understandings of professional roles and responsibilities. Pre-service teachers should be offered opportunities to build awareness of potential professional consequences of inappropriate Facebook behaviours as a means of promoting self-regulation. According to communication privacy management theory (Petronio, 2002), individuals have competing needs for both disclosure and privacy and, as a result, must develop regulatory abilities related to maximizing the benefits and minimizing the risks of disclosure of personal information when participating in online activities (Metzger, 2007). Harte (2011) recommends that, teachers must pause and consider the consequences before sharing information, utilize privacy settings effectively, be proactive about informing others of their professional role, and remember that their ethical responsibilities extend to the online environment.

Second, building awareness of the dual roles teachers play as a user and modeller represents untapped potential for educating colleagues and students about digital citizenship and how to use technology in an adaptive and functional way in the classroom. Indeed it is imperative that teachers effectively integrate technology. In the higher education classroom context, a study highlighted the amount of instructor disclosure on Facebook, when effectively regulated, as beneficial for the learning environment by enhancing students' motivation as well as the student–teacher relationship (Mazer, Murphy, & Simonds, 2009). Mazer, Murphy, and Simonds' 2007 study can be explained by communication privacy management theory's first essential component—privacy ownership—which posits that disclosure can increase intimacy in relationships when information becomes collectively owned (Petronio, 2002). Indeed, additional literature is emerging in support of Facebook's use across pre-professional programs; for example with medical students (Gray, Annabell, & Kennedy, 2010).

Limitations

Two limitations should be noted which can be attributed to the nature of the data collected and sampling procedures. First, our use of a self-reported questionnaire was limited to what the respondent was willing or able to articulate on the pre-existing measures. The challenge we faced when developing the questionnaire was the dearth of accessible information related to the psychometric properties of the few validated measures for assessing online perspectives, attitudes, and behaviours. Second, our sampling procedures involved a participant pool of pre-service teachers at one institution where the majority of study participants had not yet completed a formal teaching practicum. We acknowledge the limited generalizability of our findings and point to the need for further study and specifically, that comparing pre-service teachers with students in other disciplines would be useful.

Conclusions

There exists a practical need to develop a shared understanding of what it means to uphold the standard of e-professionalism within the teaching profession as a precursor to developing technology-focused policies. This foundational step, in turn, has the strong potential to inform the implementation of e-professional education. It is essential for these standards and guidelines to be conceptualized as evolving in response to the changing digital context in which teachers live and work. Finally teacher e-professional education needs to reflect three key considerations: awareness of potential professional consequences and greater attention to dual professional roles.

Acknowledgements

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