Research Proposal:

Professional Development Through Personal Learning Networks

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Introduction

Research Problem

While technology continues to change the way students are learning, the role of the teacher is expected to change also. Teachers are being encouraged to adapt and adopt new practices, and to move forward in preparing 21st century students for a globally connected society. This major shift in pedagogy is clearly not a change that will happen overnight (Prensky, 2005). Teachers need to move from "telling" to "partnering" with their students. The role of technology is to support the partnering pedagogy, and to enable each student to personalize his or her learning process (Prensky, 2005). Students believe that this world should be extended into our schools (Project Tomorrow, 2010), however; current professional development for teachers often does not effectively support teachers in transforming their instruction (Crawford, 2011). Will Richardson and Rob Mancabelli (2011) believe that it is our own intellectual or creative passions that mark the foundation for Professional Learning Networks (PLN's) and that it is through these networks we learn what we want or what we need to learn. In order to address the role of educator's in fostering innovation, I believe PLN's need to be examined in order to better align teaching and learning for our era. The research proposed here will begin to address this need.

Rationale for the Study

The impetus for this study emerged from my move to the United States from Canada. I have taught with the Calgary Board of Education (CBE) for 15 years and have been granted a leave of absence until I return in 2 years. Living in the United States for

the next two years and not working, I need to stay connected and abreast with current movements. I have done this by pursuing my Masters in Educational Technology and through my personal connections to other professionals, scholars and colleagues via PLN's such as Twitter and Google+ Communities. I began thinking about how my connections are helping me stay current in my profession and the important role PLN's are playing for my career.

Research Questions

Given our current global connections and those already participating in "learning on demand" through various networks, the merits of teacher use of PLN's for immediate professional development and staying current with teaching practices, needs to be investigated more closely. Since there have been few empirical studies in the domain, it also makes this study more imperative. The purpose of this research is to examine the effects of PLN's on teachers' instruction. Specifically, I ask:

1. What types of PLN's are teachers connected to?
2. What are the benefits of PLN's to keep educators current in their teaching practices?
3. What is the correlation between teachers' ongoing connection to PLN's and the impact it has on their instruction?

For the purpose of this study, "instruction" is defined as the design of assessment and learning tasks which, according to the CBE "reflect the dynamic relationship between each component of the instructional core: student, teacher and content" (www.cbe.ab.ca). In personalized learning, assessment guides the development of

learning tasks, engages learners in adjusting and monitoring their approach to learning, allows for adjustment in instruction, and shapes the nature of learning outcomes (www.cbe.ab.ca).

Based on the evidence gathered through these research questions, I predict that there is a strong correlation between teachers' involvement in a PLN and their instructional practice.

Review of Literature

Using Personal Learning Networks for professional development is relatively new, as is the literature and research articles on this topic. In exploring the power of networked learning, three questions emerge that help frame the research topic and formulate the research problem: What is global networked learning? What are the benefits to using PLN's? What studies have been conducted to look at PLN's and student engagement? These questions are used to organize the literature review section of this proposal.

What is global networked learning?

Wegner's (1998) social theory of learning calls for an environment of important learning through communities of practice. This environment encourages participants to mutually engage in the task at hand, focus on joint initiatives, and develop shared ways of working. Lave & Wegner (1991) propose that learning is a process of participation in communities of practice and argue that most accounts of learning have ignored its typical

social character. To step away from solely obtaining knowledge, learning is fundamentally a social process. When looking at social processes today, social media plays a critical role for global communication. For example, in the recent Malaysian Airlines passenger plane that was shot down in Ukraine, the world first came to know of the news through a post from Malaysian Airlines on its Twitter feed that it "has lost contact of MH17 from Amsterdam. The last known position was over Ukrainian airspace. More details to follow" (http://twitter.com/MAS). This news came to the world via Twitter before major news chains did.

Sie, Patariaia, Boursinou, Rajagopal, Margaryan, Falconer, Bitter-Rijpkema, Littlejohn, & Sloep (2013) discuss two main approaches to PLN's: a top-down, and a bottom-up approach. A top-down approach recognizes a learning network as part of a collaborative learning solution where a networking environment is introduced to learners to become more motivated, or less isolated, by connecting them to knowledgeable peers. A bottom-up approach contends that learning is a social phenomenon and that is through the interactions of the learner that constitutes a learning network. Participative technologies for communication and collaboration have been increasingly accessed. Such technologies include blogs, wikis, podcasts, social bookmarking, YouTube, and virtual worlds (Siemens, 2008). There have been many newer forms of technologies and social media since then that are revolutionizing the world of teaching and learning. Google Apps is one example of a cloud-based technology where educators can connect with students in a meaningful way, and providing a collaborative experience for their students.

In today's world, job-embedded professional development is now a norm and participating through informal learning networks offers various perspectives from multiple working contexts. Informal learning occurs during daily practice, and it is interaction with others that drives informal learning (cited in Sie et al., 2012, pg. 59). People who participate in PLN's expect an exchange for their participation and knowledge sharing for feedback from other participants in the network. It is noted that a PLN should keep a balance between an appropriate amount of information sharing and interaction in the network and a trustworthy and supported entourage (cited in Sie et al., 2012, pg. 70). For example, CBE's Innovation and Learning Technology (ILT) team recently launched a Google+ Community for educators to share interests, passions, exchange news, ideas, and make new connections with other educators. Some of their recent discussions include topics around Google Apps For Education, Alberta Curriculum Development, and Digital Citizenship.

What are the benefits to using PLN's?

Lieberman & Mace (2009) share their 10-year experience at the Carnegie Foundation for the Advancement of Teaching and Making Practice Public. They invited teachers to spend time at Carnegie as their first cohort of the Carnegie Academy of the Scholarship of Teaching and Learning (CASTL). Within the first two years, they wanted to find ways of making their teaching public, to talk about teachers' ideas and dilemmas, and to model the kind of teaching they were doing. At that time, multimedia representations of teachers' practices were gaining audiences around the world. This led them through 3 phases, which led to the development of multimedia "texts" of teaching:

Phase 1: Inventing different ways to go public

Phase 2: Articulating essential artifacts and events of teaching practice

Phase 3: Broadening the frame –looking across practices and classrooms

This project involved teachers posting videos of student work samples and other artifacts of their documented practices on a website. This was shared with other teachers to learn from and reflect on personal teaching practices. Narrative templates were built in to guide reflections, introduce themselves, provide a description of their professional experiences, and share professional learning goals. As time was a factor for teachers, the researchers built paid release time into their project budgets and regularly brought teacher collaborators together. A different kind of professional learning emerged through this opportunity. Although only a few teachers took part in this project and no hard, objective, numeric data was provided, Lieberman and Mace (2009) argue that through this experience, teachers not only open up to learning from their own practice when they go public with their work, they help others build on their own knowledge and provide further professional development opportunities.

Pamela Whitehouse (2011) conducted a qualitative study exploring teacher professional development embedded in a networked learning environment. She analyzed the experiences of teachers in the Globaloria West Viginia (Globaloria-WV) program. Social media and Web 2.0 technology was used to encourage teachers and students to engage in "learning by design" projects. More specifically, teachers and students used high end gaming software to create educational games for young learners. Through this process, many social networking media that offered synchronous, asynchronous and face-to-face resources provided support to teachers and students. Educators and students

learned within open source communities on a Wiki (read/write, pull/push, surf/post, receive/contribute) to prepare them for their projects. The qualitative analysis was completed using Educator Reports and interview transcripts. Data analysis included a transcription of each interview using Atlas.ti, a tool used to read responses and hear the respondent's voice simultaneously. Through this, two themes emerged: Change and Challenge. Change referred to current changes in teaching modes, methods and assessments, and challenge referred to present and future challenges described by the educators. A need for future research with regards to understanding the extent and durability of changes in teaching practices was mentioned. Limitations to methods used were clearly articulated, one primarily being sample size and that the themes that emerged may not be generalized with a larger sample. At the end of the study, Globaloria had concluded its second pilot year and found that one of the key lessons learned was the substantial power networked environments have for teachers and students. Teachers were interviewed and a key aspect of the program was the amount of professional development that participating teachers provided, both formally (presenting Globaloria at a "Parent Night") and informally (teacher self-reflection). In this study, it is noted that further exploration and analysis of these types of teacher professional development need to be looked at closely to better understand the nature and durability of teacher learning.

Sie et al., (2012) distinguish between formal and informal learning and state that informal learning is not always rewarded or recognized due to a lack of information about how people learn through their network (cited in Sie et. al., 2012). In order to exhibit appropriate informal learning behavior, one must consider professional learners' strategy or "networking attitude" (Rajagopal, Joosten-ten Brinke, Van Bruggen, & Sloep, 2012),

specifically: 1) What motivates professional learners to engage in learning through their network? 2) What do they learn (learning outcomes)? 3) Why do they feel they learn (perception)? Sie et al., (2012) provided a literature review from these emerging questions, and conducted an exploratory study using an innovative elicitation technique called the Tweetstorm. The purpose of this study was to discover how learners perceive their personal learning in a network. Six participants were chosen from the Personal Learning Environment (PLE) conference 2011, a conference whereby scholars learn from one another. The Tweetstorm was also open to the public for anyone who was interested, totaling 31 participants engaged in tweeting and retweeting their answers to three main questions about PLN's through Twitter using the #plntweet hashtag: 1) What motivates you to engage/learn through your network? 2) Why do you feel you learn from your peers? 3) What do you learn from your network? An environment called Websort was used to sort the data to an item-item similarity matrix. The research findings revealed that participants mainly learn from research collaborators, friends and external colleagues, and that the most commonly used social networking tools are Twitter and email. A majority of the statements from participants also revealed that there is a high motivation level for networked learning, for example, one of the participants commented, "learning with others is more rewarding and rich than on your own" (Sie, et. al., pg. 68). Limitations to the study revealed that a larger sample size is necessary in order to make sound conclusions. Future work noted from this study suggested a focus on factors that influence the interaction between networked learners, and the importance for each factor for networked learning.

Personal Learning Networks and Student Engagement

Learners today have been immersed in a digital, media-rich, and networked world all their life. These learners are often described as "millennials" having expectations of education as being a participative, engaging, and active environment (cited in Siemens, 2008, pg.6).

Mirny, Wiske, Joo, Cunningham, Daniels, Farid, Gordon, Madani & Nissen (2010), for example, conducted a year-long collaborative action research project, involving researchers at WIDE World online professional development program based at Harvard University Graduate School of Education, and a group of practitioner researchers from schools and educational agencies in Australia, Jordan, United States, and Singapore. Their research questions focused on how online professional development programs improve professional performance, student achievement, and systemic improvement in schools. They used their organization's online course platform for collaborate planning and discussions about the research with case study participants. The study used mixed methods to assess the online professional development program and its educational frameworks in schools. Such methods included follow-up surveys with teachers, individual and focus-group interviews with teachers and leaders, student surveys, and teacher portfolios including lesson plans, examples of student work, and classroom observations. Although it is difficult to assess student engagement[1], in all case study sites that surveyed students systematically, the majority of students whose teachers completed online professional development positively evaluated their own engagement with an understanding of classroom work (cited in Mirny A., et al., 2010, pg. 5).

[1] Guskey, T. R. (1997). Research needs to link professional development and student learning. *Journal of staff development*, *18*, 36-41.

Chandler & Redman (2013) sought to prove the authenticity that arises as a result of the daily interactions between learners, tasks and environments. Their initiative involved redesigning a pre-service primary science education program and immersing students in a learning experience which explicitly valued PLN's, discursive spaces and metacognitive thinking. Part of their study included the trial use of a "twitter style back channel" in a lecture where teachers-in-training contributed to the content of the lecture. The intent was for teachers-in-training to evaluate and assess the value of using Twitter in their own classrooms. It was concluded that learners could benefit in many ways from these visual conversations from sharing their thinking and questions to recording their ideas publicly. Research by Dhir, Buragga, & Boreqqa (2013) explored the advantages and disadvantages of Twitter for educational purposes and "discovered that Twitter has positive impact on informal learning, class dynamics, motivation, as well as the academic and psychological development of young students" (cited in Fox, K., 2013). Twitter can provide real-time opportunities for students and can be an effective discussion platform. Fox (2013) notes that student engagement seems to increase when students participate in the Twitter class discussions, and those students who are less likely to participate in large class discussions also become active participants. If educators value networked learning for their own professional development, it will reflect in their daily teaching practices with students, and students will benefit both directly and indirectly from those connections.

Research Methodology

Research Method

This section outlines the methods used to establish what kinds of professional development teachers are seeking and using to enhance their teaching practices. More specifically, to find out whether PLN's are indeed being used for ongoing professional development. Based on the literature reviews around the benefits of using PLN's and its connection to teachers' instruction and student engagement, three research questions will be addressed in this study:

1. What types of PLN's are teachers connected to?
2. What are the benefits of PLN's to keep educators current in their teaching practices?
3. What is the correlation between teachers' ongoing connection to PLN's and the impact it has on their instruction?

As the intent of this study is to gather enough data to make a generalization around teachers' professional development through the use of PLN's, I have chosen to conduct quantitative research using a correlational methodology. According to Gay, Mills & Airasian (2012), Correlational research involves collecting data to determine whether, and to what degree, a relationship exists between two or more quantifiable variables. (Gay, L. R., Mills, G.E., & Airasian, P., 2012, pp. 10). Data will be collected solely through a cross-sectional online survey (Appendix B) conducted towards the end of the school year. The design involves a group of teachers using PLN's for professional development. This group will not be selected, rather known at the onset of the survey. This study is of low risk for participants and they will be guaranteed anonymity in the

final research report. The results of the study may be shared with my graduate class and professor, and future publications of the study may result. There are no costs associated with this research study.

Participants

For this research, teachers from the CBE will be selected to participate in this study. 10% of elementary schools within the CBE will be selected totaling 26 schools. Each Area consists of schools from communities belonging to a specific quadrant of the city.

Area 1 - 21 elementary schools (28 communities NW and SW of Calgary)

Area 2 - 28 elementary schools (40 communities NW and NE of Calgary)

Area 3 - 27 elementary schools (23 communities NE and SE of Calgary)

Area 4 - 26 elementary schools (56 communities SW and SE of Calgary)

Area 5 - 30 elementary schools (41 communities SW and SE of Calgary)

Proportional Stratified Sampling:

In order to guarantee a proportional representation of teachers from each Area, the desired sample size is 10% of the 132 schools (Gay et. al., 2011, pp. 134).

16% Area 1 or 3 schools

21% Area 2 or 6 schools

20% Area 3 or 5 schools

20% Area 4 or 5 schools

23% Area 5 or 7 schools

A research study request (Appendix A) will be sent to all Area Directors where he/she will select the schools in his/her Area that he/she would like to participate in the study. There is no upfront work necessary for any teachers. The only requirement of this project is for teachers to complete a one-time cross-sectional survey. Teacher surveys will be anonymous.

Procedure and Instruments

One month prior to the survey being launched to teachers, a research study request to all Calgary Board of Education Area Directors will be sent. Area Directors will then select the schools needed in their specific area for those teachers to participate in the surveys. A cross-sectional survey will be used for this study. Survey questions will be sent out to the participants via Google Forms. Questions will be a combination of a checklist, multiple choice and likert scale. The online survey will be sent out at the beginning of April 2015.

Schedule of Events

Phase	Tasks	Tentative Dates
Initial	• Letter sent via email to all five Area Directors within the CBE	March 2, 2015
Phase 1	• Online survey is	April 6 – April 20, 2015

	sent to all Principals of schools participating in this study • Principals to send out link to survey to all teachers in the school • Teachers have 2 weeks to complete the survey • Reminder email will be sent out one week before surveys are due and another reminder will be sent two days before they are due	
Phase 3 Data Analysis	• Collate survey results for compare and contrast picture	May - June 2015
Phase 4	• Write final report	July - August 2015

Final Report	including charts with data, challenges, conclusions, and recommendations for further research	

Discussion

The results from the cross-sectional survey should provide some rich data to draw some major conclusions around the use of PLN's for professional development. Of particular interest will be the correlation between teachers participating in PLN's and the authenticity of task design and assessment in their teaching practice. If this study indicates a positive correlation between teachers' instruction and their connection to PLN's, further studies can include the frequency of teachers' involvement in a PLN and whether or not commitment increases over time. Also, it would be interesting to know the ways in which teachers share back and engage other teachers in the work they are doing. Of course, issues discovered or missed in this study can also be further investigated. As the research in the literature reviews reveal the benefits for teachers to capitalize on the affordances of social networking capabilities, this research can support educators when considering the benefits of using PLN's. As it is impossible to control all variables in an educational setting, there are limitations to this study. One limitation is that the number of teachers connected to a PLN versus the number of teachers not connected to a PLN is unknown at the start of the study. To find out whether teachers are

connected to PLN's for professional development will only be known at the onset of the online survey. If this number is low, this will result in a small sample size of participants connected to PLN's for professional development and therefore, generalizations cannot be made towards the greater population of teachers who are using PLN's for professional development. Another limitation of this study is related to the survey questions, specifically the question around student engagement. Answers to this question are extremely personal and reflect individual philosophies and teaching practices. What one teacher considers student engagement to look like or how he/she assesses this will be quite different from another teacher. The last limitation mentioned in this research and certainly there are more, is related to sample size again. If one or more directors turn down the study, a proportional representation of teachers from all Areas will not be accounted for.

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Appendices

A. Letter to Area Directors using Google Docs

B. Teacher Survey using Google Forms