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INVESTIGATING A NETWORK: ONLINE COMMUNITIES AND PEER SUPPORT

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ABSTRACT
Educators have traditionally found professional development opportunities difficult to pursue for a myriad of reasons. From a lack of relevance, to the difficulties presented by the challenges of time and place, professional development has often been an elusive goal. However, the advent of technological innovations in the area of communication technology is seen as a potential solution to these problems. Now, given the proper communication tools, educators should be able to become involved in meaningful professional learning without the restrictions imposed by time and place. This paper examines preliminary findings from a study of a group of educators who have been involved in professional development through the use of an electronic network which has been in operation for more than a decade. The ability to develop an online community of practice and support an exchange of professional knowledge through this network will be discussed. Using content analysis, stimulated recall, interviews and the lens of Rogers’ Diffusion of Innovations Theory as a framework, the value of such a network is being uncovered.

KEYWORDS
Electronic network, professional development, communities of practice, ENO/REO

1. INTRODUCTION
As educators in all educational sectors look to each other to solve the daunting realities of the profession, the creation of rich educational environments which support the ability of educators to share teaching strategies, examples of best practice and professional development opportunities must be developed (Grossman et al. 1998; Riel, 2001). Referring to a perception that teachers are considered “pedagogic equivalents to the ‘Energizer Bunny’”, in other words wind up toys that can never be allowed to wind down, Grossman et al (1998 p.30) conclude that teachers must work together simply to find the collaborative energy they need to meet the challenge of changing societal expectations. Given cost factors, time, and the workloads of most educators today, membership in face-to-face professional development groups is difficult. The prohibitive cost (emotionally and financially) of gathering together makes a compelling case for looking at alternatives. The advent of the Internet in the early 1990s, and its potential to provide teachers with a virtual way to collaborate, made it an attractive option. While research suggests that a combination of both face-to-face and online strategies may work best for most educators (Doubler et al, 2000) there are other reasons for supporting a totally virtual network. Fullan (1998) suggests that there may be a much richer benefit derived from the ability to reach and connect with teachers from other areas be they local, national or international to address what he refers to as a professional development “vacuum” and encouraging instead a broader professional vision so that teachers “can belong in a real sense to a wider profession” (p.17).

2. THE EDUCATION NETWORK OF ONTARIO/ LE RÉSEAU ÉDUCATIF DE L’ONTARIO (ENO/REO)
In an attempt to capitalize on the potential of the Internet, the Ministry of Education of Ontario and the Ontario Teachers’ Federation provided funding for the creation of The Education Network of Ontario/ Le
Réseau éducatif de l’Ontario to encourage online collaboration and ensure connectivity for all teachers across the province of Ontario, Canada, in 1992-1993. This initiative had a dual purpose:
a) to ensure that all educators had free access to the Internet and to each other,
b) to encourage the development of skills in the area of information and communication technology with the ultimate goal of using those skills to improve classroom practice.

Today, the bilingual (English and French) Education Network of Ontario/Le Réseau éducatif de l’Ontario (ENO/REO) continues to provide a networked environment where educators register to receive a standard Internet e-mail account, access to ENO/REO Intranet newsgroups/forums and access to the Internet. There are several professional development venues open to ENO/REO members. Most of these venues involve some form of online mentoring through the following means:

1. Members may access online discussion forums which address a variety of educational concerns. They may log in to a forum asynchronously (not in real time) or synchronously (in real time) to have a live chat or post a message. At the time of writing, there were 67 un-moderated forums and 21 moderated forums. For usage statistics please see Appendix A.
2. Members may take part in projects where most of the communication between project coordinators and project participants is completed through e-mail or through discussion forums.
3. Members may also take online courses pertinent to teachers in Ontario. Courses are modular in nature and are offered with or without the help of a facilitator. The content from most of these courses is offered freely to educators on the ENO/REO website.

At present, over 123,000 educators, support staff, administrators, Ontario Ministry of Education staff, and Faculty of Education staff are members of the network which constitutes over half of the professional elementary and secondary population of Ontario.

2.1 Online Networks – virtual communities of practice

One of the major assumptions underpinning the creation of The Education Network of Ontario was that information technology appeared to have the power to connect educators so that they could build the kind of human networks needed to pursue professional learning in a cost-efficient and flexible time and/or place (Speck & Knipe, 2001, Dede, 2001). Online networks also seemed to have the potential to provide the necessary comfort level to improve participants’ technology skills and perhaps lead to an integration of these skills into the classroom (Sparks, 1998, Roberts & Associates, 1998, Doubler et al., 2000). Researchers envisioned a future where online networks would be able to support a multitude of educational stakeholders in a joint effort to share information across the education system with communities of learners becoming the norm (Schlager et al., 1999; Riel, 1998). The ongoing research underlying this paper was undertaken in order to discover how this online network supports professional development in order to help the researcher frame the future direction of the network. These discoveries may also be of interest to the larger educational community as a growing body of research into the area of computer-mediated communication, online networks and communities of practice encourages further research (Barab, Kling & Gray, 2004; Gray & Tatar, 2004).

A large body of literature suggests that ‘communities of practice’ present an optimum means of supporting professional development in the workplace (Schlager & Fusco, 2004). Research into communities of practice and their emphasis on collaboration suggests that these groups are a successful means of disseminating workplace practice especially in “companies that thrive on knowledge” because they improve the "organizational performance” of such companies (Wenger & Snyder, 2001 p.16). One could conclude from this that creating such communities for educators might have the same kind of result, especially if teachers need to work together in order to face the challenges of the future - "Their relationship through networks and collaboration with colleagues will empower them to improve, to be more effective, and to enjoy their work”(Speck & Knipe, 2001, p.226). The notion of communities of practice defined as those “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger, McDermott & Snyder, 2002, p 4) would appear to fit well with the reality of an electronic networked community, especially of educators who have little opportunity for other forms of easy interaction given the nature of their classroom
roles. The potential for online communication about professional issues providing a means of establishing a virtual community of practice made this study an ideal environment for studying such a development.

Online learning in higher education has begun to be discussed in terms of community, often communities of learning (Brook & Oliver, 2003). If even a short term grouping of adult students, with busy work lives as well as their studies, during an online semester length course showed the capability of forming an online community then it could be assumed that teachers networked through ENO could similarly develop a community of practice. Stacey, Smith and Barty (2004) investigated a semester length course among Australian educators and trainers who were studying about the nature and theory of online learning. They found that when students were grouped with commonalities of work interests and contexts, they quickly negotiated the early uncomfortable stages of community forming as they focused on their common interests. With careful guidance and monitoring by the teacher of the course and with a common enterprise of completing their assessment collaboratively, the online students formed a successful community of learners. The online conference environment and their shared task were sufficient place and reason for mutual engagement, and they could communicate about their common contexts to establish a shared repertoire. If a carefully structured online course of one semester could mirror the more natural and informally constructed community of practice of the workplace, the ongoing nature of ENO could provide many of the conditions of Wenger's (1999) community of practice. "A history of mutual engagement around a joint enterprise is an ideal context for this kind of leading edge learning, which requires a strong bond of communal competence along with a deep respect for the particularity of experience." (p.214).

For the purposes of this research, the following positions suggest a workable composite image of a networked community. Rheingold’s (2000,p.20) research from his seminal work *The Virtual Community: Homesteading on the Electronic Frontier* defines virtual communities as social “aggregations” which occur when people engage in sustained discourse and build relationships online. Kling (2002 p.1) views these networks as communities supported by technological systems “in a geographically anchored, physical community” and Hildreth et al. (in Lueg, 2001) envision a networked community as supporting “a common set of interests to do something in common, is concerned with motivation, is self-generating, is self-selecting, is not necessarily co-located, and has a common set of interests motivated to a pattern of work not directed to it” (p.6). King (2000 p.1) sees the online community as a place where participants share private spaces and a “lack of anonymity”.

For our purposes a networked community will be defined as having a common purpose supported by information technology while encouraging collaboration and self-motivated activity.

### 2.2 Researching ENO

Given the potential and the proliferation of networks, what have researchers uncovered? According to a study on the Educaion Network conducted by the University of Toronto in 1998 the researcher concluded that above and beyond the numbers of participants using the network, more research was needed into the manner in which the network was being used and potentially contributing to improvement in classroom practice (Garton, 1998). A more recent study, which reviewed literature “on the use of electronic networks for creating reflective teacher communities” (Zhao & Rop, 2001 p.1) found that there was little conclusive evidence to suggest that members of such networks actually used them to create reflective communities. The researchers looked at twenty-eight reports/papers and suggested that the value of these networked “communities” for teacher reflective practice needed more rigorous research. They suggested that the studies were generally “descriptions of the design and implementation of networks” and lacked a theoretical framework and methodology (Zhao & Rop, 2001 p.13).

#### 2.2.1 Methodology

The choice of the methodology for this study was influenced by several factors:

1. As a member of the Network herself, the researcher wanted to hear the voices and thoughts of others regarding this issue.
2. The demographic reach of the Network included educational professionals from across a vast distance i.e. the province of Ontario, Canada and visits to schools to see classroom practice would be difficult.
3 Members have been communicating with each other using public (to the members) forums for ten years and the researcher wanted to work with a small representative sample of the membership to create “thick descriptions” and/or “rich descriptions” or of their involvement over time (Geertz, 1983 in Thomsen et al., 1998 p. 7; Denzin and Lincoln, 2000 p. 10).

Through the review of the literature, several key researchers influenced the choice of methodology. Given the criteria noted above, a qualitative study with an ethnographic lens seemed appropriate, despite the complexity of an online community for situated research. Online communities are considered problematic as they establish a new virtual paradigm where the traditional study of communities, which relied historically on physical proximity, is no longer viable (Thomsen et al., 1998; Jensen, 2002; Paccagnella, 1997). Nevertheless, as Stacey (1999) points out, an ethnographic study of online communication allows the participants to be studied in their natural environment - the conference forum- and fits the parameters established by Hammersley, (1990, in Stacey 1999) as a study of behaviour in a situated group of people in their day-to-day interactions. This method would allow the researcher to study the participants as an inside observer and look for the nuances and subtle changes that may have taken place in the culture of the online community.

An online survey was followed by semi-structured interviews in an attempt to gather the detailed information needed for analysis. (Denzin & Lincoln, 2000). Use of content analysis was planned to tease out themes from the interviews as well as from the discussion forums. Several researchers had articulated concerns around validation while analysing online communications, so a decision was made to interview the participants twice (Rourke et al., 2001). They were interviewed once about their perceptions of the Network and then their recall was stimulated through an examination of their online contributions. This also alleviated the guessing game implied in the search for meaning between latent and manifest inferences in participants’ online archives (Rourke et al., 2001)

The ethical implications were a concern given the nature of online forums but with institutional ethical permission granted, the fact that the research was conducted with the permission on the participants and all other names and references were stripped away from the data, meant there was no invasion of privacy for other members (Paccagnella, 1997).

2.2.2 Theoretical Framework

Finally, the research was framed around Rogers’ diffusion of innovations theory (Rogers, 1983) to form a potential scaffold for the intended findings. As the study seemed to call for insight into two overlapping areas 1) how participants dealt with the adoption of the Network as an innovation and 2) how their use of the Network may have assisted in the diffusion of information technology in the classroom, it seemed logical to approach the research keeping Rogers’ diffusion criteria in mind. Specifically, if we agree that the Network is a place where “information about innovations is often sought from near-peers...” involving “interpersonal networks” where “subjectively perceived information about a new idea is communicated” (Rogers, 1983) we have a strong case for applying Rogers’ constructs to this research.

The study investigated how the participants adapted the technology outlined above by using the following criteria for the rate of adoption as suggested by Rogers.

1. the ‘relative advantage’ of the innovation as perceived by the participants,
2. the ‘compatibility’ of the innovation with the participants’ own “values, past experiences and needs...” (Rogers, 1983, p.15),
3. the ‘complexity’ of the innovation (how difficult is it to adopt?),
4. the ‘trialability’ of the innovation (the extent to which a participant could try it out) and
5. the observability of the innovation (can participants observe the results of its use?)

2.3 Preliminary Findings

The first stage of this inquiry involved eight educators who had been members of the ENO/REO for seven to ten years. The participants chose to take part in the research following on an online request coupled with a group e-mail requesting participation. All participants agreed to be interviewed twice, once to establish a baseline of thoughts regarding their involvement over many years, and the second time to reflect on their online messages and the indications of professional engagement contained there. This paper will report the findings from the first round of interviews.
The study included an equal representation of men and women whose average age was approximately 49. The participants came from seven different geographic locations and represented both the public school system and the separate school system (the Roman Catholic church publicly funded school system). Participants included: three administrators (one superintendent, one principal and one vice-principal), a recently retired computer consultant, one department head, an acting consultant, and two classroom teachers.

2.3.1. Initial interviews

The first set of interviews attempted to place a framework around the research by looking at the participants’ recollections of initial and ongoing membership in the Network. Of particular interest was whether this group of long time members consistently displayed the stages of diffusion as expressed by Rogers (1983). The results are analysed and grouped under the headings of Rogers’ stages of diffusion, which were found to frame the results accurately.

Stages of diffusion

- **Advantage**

  Initial questioning was an attempt to learn what relative advantage the participants could see in this technological innovation and also to learn how they were introduced to the innovation. The participants were all asked to recall when they first became involved with the Network and to reflect on their reasons for doing so.

  It appears that all of the participants were attracted by the idea of connecting with other teachers – they considered that to be a very important professional advantage or need which establishes their need for an online community of practice.

  *When this friend of mine told me that there were conferences like that, plus they were teacher specific, plus you got an e-mail address- I thought- wow that sounds great! (male administrator, rural school)*

  *I knew that somewhere else way out there in the world somewhere people could communicate with each other via computers and I was pretty sure that you couldn’t do that in this small town that I live in but I knew... that sort of peaked my interest. (female teacher, rural school)*

  Also, part of the attraction of being involved with the Network seemed to be the excitement of working with a new medium. All of the participants remembered elements of fun and inspiration accompanying the exploration of the Network’s capabilities and appeared to feel that they had been part of a great adventure in learning. They also mentioned being inspired by the “online champions” of the time.

  They had all come across the Network through different paths. Some had heard about it from a friend, some from a workshop at school and others from an advertisement in a professional publication so there did not appear to be a shared route. Nevertheless, it was the idea of communicating with other teachers that was of particular interest at the time.

- **Compatibility**

  To what extent was the Network as an innovation compatible with their “existing needs and expectations”? These participants felt the need to be connected to other teachers as something beneficial to their professional lives and viewed the Network as a means to that end. Most of them had only vague expectations of the real impact the Network might have as a result of that initial decision to become involved, but they quickly saw advantages for their classrooms. All of them used certain aspects of their Network experiences in the classroom. Again the shared repertoire that was resulting from their online community of practice was contributing to their professional knowledge.

  They reported using the Network
  - to connect to other educators to work on classroom projects that involved other schools,
  - to learn about the use of new technology in specific subject areas,
  - to connect students with each other through e-mail and discussion forums,
  - to create and critique lesson plans etc…
The participants seemed to believe that the Network had tremendous potential for educators and that more educators should be using it.

- **Complexity**

According to Rogers, an innovation should potentially "make life simpler or at least not contribute more complexity" to an individual's day-to-day reality. It seems that in the case of the Network however, the innovation did not seem to make life simple and actually added quite a challenge to the participants' lives. In some cases, novice users had to discover how to use the new technology by relying on family, friends and/or the Network to guide them.

When referring to her need for support from her daughter, an administrator (who at the time was a teacher-librarian) said "... she refused to help me after awhile – she said 'You have to figure it out'. And I was very frustrated but one of the things I know is if I learn to do something then I understand why children were frustrated...". Another participant remembers the fear of doing something wrong "...I took a big step and thought 'I will be brave about this' - and plugged the phone into the back of the computer to see what it would do and it didn’t do anything (laughter)".

- **Trialability**

Rogers suggests that an innovation must be flexible enough to be tried out without the need to commit prematurely to a new as yet 'untried' practice. The Network seemed to provide the opportunity to opt in and out of the environment while at the same time allowing participants to gain enough confidence to experiment with the technology available.

> I started to find out about these collaborative projects and they just caught my attention and I knew that they would be perfect for that little group of gifted kids that I had. (female teacher, rural school)

> I asked them (members of the Network, author's note) and when I got braver I did my own thing (in the classroom) so I found ENOREO very helpful for me in that. (female administrator, rural school)

It was interesting to note that even the early technological frustrations with the Network did not seem to deter the participants from using it even though there was a time of great technological upheaval in the years between 1993-1995.

> I used to joke that I would click on something and then go and do my dishwasher and come back and wait for it to load. (laughs) But it literally would take sometimes could take you 5 to 10 minutes sometimes. And you had to be prepared for that. (female technology consultant, urban area school)

> Well, it was sort of neat at the beginning and then there was crash after crash – once they started setting up these servers across the province and that made it kind of interesting ...(male superintendent, rural)

Generally, the participants felt like pioneers and enjoyed that experience. They also became conduits for disseminating technological information in their schools and did not feel that they had influenced many colleagues to join the Network despite repeated attempts. It would be valuable to find out to what extent their eagerness to pass on information face-to-face to their colleagues resulted in a colleague joining or not joining the Network.

- **Observability**

Participants were able to see results from their involvement with the Network both in their professional development and in their work in the classroom. All of them mentioned a growth in professional confidence as a result of their growing familiarity with the Network and its opportunities. In one way or another all of them had taken on additional responsibilities over the years in the Network environment. They had either
become forum moderators, project leaders, or coordinators. They had also written online professional development, created online curricula for students, organized online seminars and/or taught an online course. Their work in the classroom included an ongoing use and experimentation with technology in a variety of subject areas using a variety of applications from word processing to teaching networking skills. This effect of their online community of practice shows the way it contributed to their professional learning and improved their classroom practice.

Most of the participants are still very active with the Network but a few cite professional demands that have taken them away from involvement. The latter group nevertheless still sees it as a valuable tool but have no time in their present position to take part in Network activities.

3. CONCLUSION

This initial investigation suggests that participation in an online network over an extended period of time has definite benefits for educators both on a personal level and in a professional sense. The similarity of their experience of mutual engagement with colleagues in an online community of practice, with the experiences of many of the participants in the Stacey, Smith & Barty (2004) study confirms the formation of a community of practice within ENO/REO that will be explored in more detail in the next stage of the research.

The second stage of this primary investigation will examine the online messages posted over the last decade to investigate the kinds of professional discussions that have been of interest to these participants over the years. In analyzing this data it will be determined whether there is evidence of the participants’ notion of the community of ENO/REO and how that has evolved and/or changed over time.

REFERENCES


Kling, R. 2002. Special Issue on the “Information and Communications Technologies (ICTs) and Community Networking” call for papers. The Information Society.


**Appendix A**

Numbers indicate the frequency of messages read in September 2004 in selected forums. Frequency fluctuates slightly throughout school year reflecting teacher availability. The months of May and June are typically busy for teachers as the school year is ending and this will be reflected in the forums.

<table>
<thead>
<tr>
<th>Forum</th>
<th>Frequency</th>
</tr>
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<tbody>
<tr>
<td>eno.curr.arts</td>
<td>1501</td>
</tr>
<tr>
<td>eno.curr.computertechn</td>
<td>9998</td>
</tr>
<tr>
<td>eno.curr.gifted</td>
<td>1583</td>
</tr>
<tr>
<td>eno.resource.videoconferencing.disc</td>
<td>1098</td>
</tr>
<tr>
<td>eno.talk.concerns</td>
<td>2486</td>
</tr>
<tr>
<td>eno.talk.lounge</td>
<td>6118</td>
</tr>
<tr>
<td>eno.talk.politics</td>
<td>1057</td>
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240