Investigating Research Apprenticeship Online

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Abstract (100-120)

The papers in this interactive symposium explore the theoretical and social challenges and technical solutions being developed in the GRAIL research project focused on creating an online environment for in-service teachers taking graduate degrees in Education mostly at a distance from their graduate institution. This project aims to develop a set of social and technical tools that support the formation of an online community to engage graduate students in activities related to educational research across course boundaries and through their degree program. Key issues for interactive discussion with the symposium audience include how studying at a distance impacts the traditional experience of graduate study, and how students negotiate individual academic development within the larger academic community mediated in an online environment.

Objectives

This symposium explores the theoretical and social challenges and some of the technical solutions being developed in a research project called GRAIL (Graduate Researcher’s Academic Identity onLine) which is focused on creating an online environment for in-service teachers taking graduate degrees in Education partly or mostly at a distance from their graduate institution. The overall goal of this project is to develop a set of social and technical tools that support the formation of an online community to engage graduate students in activities related to educational research across course boundaries and through their degree program. The journey of graduate students is a complex one that interweaves particular instantiations of community involvement with an ever-developing ability to find and articulate an independent and personal voice. As such, an effective online environment needs to support both these kinds of processes, possibly in multiple ways.

The technical elements in the environment include; Knowledge Forum as a public discussion environment; social networking and bookmarking tools including weblogs as individual locations for academic journaling, shared RSS feeds to support connections to

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a more distributed research community; collaborative writing spaces such as Meatball Wiki, and a phased approach to developing a coordinating Portal users can modify to suit their own learning needs. Additionally, synchronous tools available in Macromedia’s Breeze Live are being used for large and small group meetings. Reporting data from the first year of this project, each paper in this interactive symposium will discuss findings related to the technological and social affordances of the various elements of the GRAIL environment.

Educational/Scientific Importance

The need to improve the graduate training of education researchers is being increasingly emphasized, both in the US and in Canada (e.g., Lagemann & Shulman, 1999; Lagemann, 2000; Natural Sciences and Engineering Research Council, 2003; National Research Council, 2004). In the US, such concern has been heightened both by the current emphasis on scientifically based research in education (Eisenhart & DeHaan, 2005) and more generally, the prevailing need to educate people for the new knowledge economy. Using technology to provide greater access to quality graduate education is increasingly being recognized as an important strategy. As globalization in Canada and the US becomes more extensive, and work requirements change, the need for distributed research communities and skilled researchers increases (e.g. Natural Sciences and Engineering Research Council, 2003). An important element of graduate education is the preparation of researchers. However, in spite of the popularity of online learning for course delivery, there is as yet little empirical research on the constraints and affordances of this medium for the broader issue of researcher preparation.

Theoretical Background and Methods

In a knowledge society, the restructured job market requires individuals to engage in life-long learning, and those who teach are no exception. Technology enables non-traditional students—practicing teachers, medical professionals, instructional designers, corporate trainers, professors, etc.—to pursue graduate study part-time and at a distance. While graduate-level education is frequently conceptualized as an apprenticeship in disciplinary research practice (Eisenhart & DeHaan, 2005) this model of learning is difficult to implement when students are not present regularly on campus. Further, graduate students in education may have limited experience with the culture of scientific inquiry or the technical aspects of research. Engagement in the culture of research practice may be further hampered by minimal ongoing academic involvement across a program of study, beyond course boundaries. Lave and Wenger’s (1991) Communities of Practice model is a theoretical starting point for the design of a sustainable graduate student learning environment because it provides a way to consider the process of learning research practice as participation through the notion of legitimate peripheral participation. Apprenticeship is conceptualized by Lave and Wenger (1991) as requiring
legitimate participation in authentic practice and graduate students studying at a distance are challenged by time and space to engage in research projects with faculty and peers.

The studies presented in this panel explore the technological and social affordances of various technologies of an online environment for graduate students in Education (Freeman & Brett, 2005). For these first series of studies, the goal was to establish a baseline to inform participants’ experiences and needs in relation to the online environment. Emphasis is placed on opportunities that afford graduate students in education with access to research practice at a practical, social, and cultural level. A variety of data collection methods were employed including questionnaires, interviews and content analysis of online contributions.

Paper 1: Questionnaire data – Students' understandings of their experiences in graduate school.
Nobuko Fujita & Wendy Freeman, OISE/UT

This study surveyed 40 recent graduates (registered in years since 1999) and currently registered students who have taken online courses at OISE/UT to examine how they managed their graduate experience. Questions included: What were their goals for enrolling in the program and how did their goals compare with those of their peers’? How much contact did they have with faculty and peers? What did they think educational research involved? Results suggest that students were generally satisfied with their experiences in achieving their professional and academic goals, but had limited interactions with peers or faculty beyond bounded course contexts and supervisory relationships. They were less certain about how their goals compared with those of their colleagues. Although they recognized the value of presenting and publishing in the research process, students were unaware of or unclear about the significance or value of participation in research groups or projects offering collaboration and co-authorship opportunities. The presentation will describe profiles of responses from students at different points in their programs as well as identifying the challenges both identified by students and also in relation to typical expectations of graduate programs.

Paper 2: Reflecting on the culture of research using Weblogs
Wendy Freeman, OISE/UT

This study examines how weblogs can be employed as a public and personal writing space that can serve to make the culture of research practice more transparent in a graduate program in Education. Weblogs provide a journal-like structure that can be used to add chronologically ordered posts. Weblogs were used by graduate students both within courses and by those involved in research across a program over two semesters to reflect on their learning and research experiences. The weblogs were publicly available and students were encouraged both to read each other’s entries and to link to and build on any other relevant weblogs and websites that they found. Content analysis of the weblogs is used to explore how the technological affordances of web-based journals such as linking, chronological posting, and aggregating using RSS can be used by students to
access the culturally constructed artifacts of educational research practice through ongoing and legitimate means. By reading practicing and emerging researcher’s weblogs, and reflecting on their meaning, graduate students learn to interpret the role of theory in practice and the tacit meanings associated with methodological choices made in research.

**Paper 3: Wikis and other collaborative writing environments**  
*Clare Brett OISE/UT & Sunir Shah FIS, UT*

Academic writing is a complex and multifaceted endeavour, involving a variety of different genres of writing; reviews, journal articles, research proposals to name but a few. Collaborative writing environments such as Wikis and Writely (http://www.writely.com) offer potentially powerful spaces in which to carry out different academic writing tasks. The resulting discourse is available to everyone, and can thus offer writing models, provide feedback and serve, in a distance learning classroom, as an equitable bridging context of academic practice between local learners and distant learners. This presentation will describe collaborative writing experiences in the GRAIL site, including the development of a group's annotated bibliography of resources related to constructive learning and online environment design. The presentation will discuss the changes suggested by the participants both from a design and learning perspective and the implications for further cycles of development to adapt the wiki to different types of collaborative, written academic work.

**Paper 4: Supporting reflective, collaborative discourse using Knowledge Forum in GRAIL.**  
*Nobuko Fujita, OISE/UT*

This exploratory study of 46 graduate students in Education investigated ways to support scholarly discourse using socio-cognitive tools built-in to Knowledge Forum called "scaffolds." Scaffolds are used while composing contributions to the collaborative online space. Appearing as bright yellow labels, scaffolds organize contributed text and make explicit the students’ usually private reflections, which may enhance learning and facilitate community building. Questionnaire, interview and online transcript data were collected in three graduate educational technology courses using Knowledge Forum over a school year. Quantitative and qualitative analyses suggest that graduate students increasingly used scaffolds and found them helpful in reading and writing online contributions. Scaffolds were used to elaborate ideas, identify areas of misunderstanding, integrate ideas, and attain mutual understanding in a public way. While the most active readers and writers in the database used scaffolds the most, less active students were able to adopt some practices of the more engaged by using scaffolds. Results also indicate the effectiveness of providing individual spaces for graduate students to reflect and voice their emergent academic identities. Such spaces in this research included online learning journals, and later, weblogs. The presentation will focus on graduate students’ use of scaffolds in Knowledge Forum to support reflective, collaborative discourse, and referring to the students' journals within or weblogs outside of Knowledge Forum to compare what the students do with what they say they do online.
Paper 5: Tying the infrastructure together
Chris Teplovs, OISE/UT

The GRAIL project differs from most other forays into the realm of CSCL in that, rather than seek to create an altogether new environment based solely on theoretical principles, it seeks to create an environment that weaves together a diverse array of extant technologies which each contribute an important communication component around key activities connected to both theory and practice in graduate research. In part this is to make the technology broadly accessible to graduate students connecting largely from their homes. Unlike the opportunities available to research institutions, for example, to use broad-band and other powerful technologies, this system has to work for individuals. By approaching the technology in this way, GRAIL allows each technology to shine through as "best of breed". Philosophically, this approach is not altogether different than that which underpins much Open Source development: ours is the Bazaar to the others' Cathedrals (Raymond, 2000).

This paper will describe the Portal that was developed to support the GRAIL project, as well as provide documentation of the implementation process. The Portal is designed to be the nexus of the environment, supporting each student in both their individual and social learning contexts in ways that are both useable and that can be tailored to individual student needs. The first iteration of the design process involved a small group of 10 masters and doctoral students who volunteered to use and provide feedback on the environment, its limitations and affordances.

Structure of the symposium (120 minutes)

The session will begin with a 10 minute overview of the GRAIL project, the theoretical framework and guiding principles and goals. Then each paper will be presented (19 minutes each with one or two questions only between each presentation) and the final 15 minutes will involve discussion with the audience about the remaining challenges and questions raised by the results to date and those to be investigated in the next phase of research.

References


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