

SECOND QUARTER PROGRESS REPORT

PROJECT: #99574 *Fostering interprofessional practice in rehabilitation and complex continuing care through collaboration and virtual learning. (note the title has changed slightly to incorporate OLT grant Appendix A project description title).*

QUARTER: Q3 (July – September 31, 2001)

1.0 PROJECT STATUS

1.1 Deliverables:

a) Forecast Deliverables:

Monthly Reports – At the outset of this research, we predicted, as a deliverable, a minimum yield of 16 notes every month contributed to a communal virtual learning environment called Knowledge Forum. Each month, separate views within the database are created to collect interprofessional monthly reports. Participants are asked to contribute monthly reflective narrative professional activity reports to Monthly Reports views within the Knowledge Forum® database. There, participants read and engage in threaded discourse about each other's activity reports with an eye to identifying shared problems of practice and opportunities to advance community knowledge and expertise.

Learning Portfolios – At the outset of this research, we predicted that participants would use the Learning Portfolios View within the Knowledge Forum database as a reflective practice repository. We predicted, as a deliverable, a minimum yield of 16 notes contributed to the Learning Portfolios View monthly. Each month, participants are asked to contribute their monthly reports to their Learning Portfolios and reflect on learning over time.

Knowledge Forum Analysis – At the outset of this research, we predicted as a deliverable, ongoing analysis of the discourse and patterns of activity within the Knowledge Forum database. Analyses address the following question: What are the affordances of using a virtual communal learning environment to foster interprofessional practice and continuous learning in health care?

Problem Solving – At the outset of this research, we predicted that discourse among participants in the database would lead to problem identification and problem solving. The problems would be harvested and stored in a view repository called “Problem Solving Holding Tank”.

b) Actual deliverables:

Monthly Reports – Data collection for this project began in November 2000. A total of 11 monthly report views were created in the Knowledge Forum database November through September, 2001. Although we have submitted activity on actual deliverables for the period November through June, 2001 in our 4th and 1st Quarter Reports, we have chosen to provide continuous updates of activity in the data base views in this report and future reports. The rationale guiding this decision is that participants use the Knowledge Forum® database continuously over time. In other words, views in the database are ‘living’ workspaces that may be revisited and reworked for multiple purposes. Temporal analyses promises to answer a number of questions concerning research of this kind, including 1) the life span of communal workspaces; 2) the usefulness of communal workspaces; 3) the functions of communal workspaces.

Table 1 below summarizes patterns of interaction with respect to notes created, read, modified and built-on. During all 11 months, participants exceeded predicted minimum outcomes for notes

created (N=16) as observed in the summary table below. During the months of July, August and September, 2001, participants met and/or exceeded maximum predicted participation (N=32 notes). During all months, participants were engaged in discourse about their interprofessional activity and building on to each other's notes. Discourse analysis this quarter (Q2) revealed participants identified shared problems of understanding in Monthly Reports discourse and carried (copied) on the problem focused discourse over the period of study. This represented a significant shift from previous quarters (e.g., Q4) when the discourse among participants was short lived and task centred.

Knowledge Forum Analysis – Quantitative indicators of interprofessional knowledge building such as frequency of notes created, read, modified and built-on are summarized below (Table 1). For analytic purposes, all members of the interprofessional team are treated as a community of practice. For this reason, group results are reported for notes created, read, modified and built-on. Previously, we reported the group exceeded predicted deliverables for notes created each month. The 2nd Quarter saw the highest average group readership compared to the 4th and 1st Quarter results. On average, individual participants are reading notes over 30 times. As well, participants are modifying notes in the 2nd Quarter more often than they did in the previous 2 quarters (approximately 5 modifications per note). Increases in rates of modification are significant in that this represents ideas being reworked or retooled more frequently, a characteristic of expert learners and knowledge workers. As previously reported in 1st Quarter report, we have come to discover that historical Monthly Report Views are visited for reading purposes long after the activity of contributing to the view has terminated. This is a significant observation in terms of how a communal database, constructed by employees, functions as both a virtual workspace during time limited activities, and an archival communal knowledge resource. Further analysis will be interested in determining the lifespan of specific views in terms of both duration of collaborative activity, and the life of the view in terms of interest and usefulness as a communal resource. Initial efforts have begun to map interprofessional learning trajectories. We consider Summary Graphs below an initial step toward graphically representing interprofessional activity and learning over time in Monthly Reports Views.

Problem Solving - Table 2 illustrates how interprofessional discourse in the database led to problem identification and solving of problems at more complex levels via creation of new problem solving views. Although at the outset, we anticipated collecting these problems in a 'holding tank', we are pleased that participants have extended beyond expectations of participation in the Monthly Reports activity, and have created new views called Problem Solving views. Over the past 11 months, a total of 15 new problem-solving views have been created in the database. Three of new views were created this quarter and all concern integration of local knowledge building activities at Toronto Rehab with global knowledge building activities of the Knowledge Society Network. The Knowledge Society Network is a living design experiment in which cross sector researchers, educators, students and employees converge to share and build knowledge about how to integrate knowledge building principles into practice and how to use virtual technology (Knowledge Forum) to support this practice. We have begun to extend the discourse in the Toronto Rehab database to include activities in the Knowledge Society Network. As well, 7 participants from Toronto Rehab attended the annual Knowledge Building/Knowledge Forum Summer Institute (August 2001). Below is a testimonial from one participant, which captures the essence of knowledge building:

Testimonial from Summer Institute Participant:

"Reflections on summer institute

It was great to see other communities at the summer institute using knowledge building theory and Knowledge Forum in different settings. However, we need to consider and be ever vigilant about equity issues and the fact that KF is a "white middle class space" or at least it appears to be.

Regarding the theory of knowledge building, it seems that for my generation at least, it's at odds with how I was educated in the 50's. The dialogue was only one way with the teacher, definitely not inter-class or inter-student. Knowledge building then challenges that pedagogical model which was the "teacher as expert" - Knowledge-building requires sharing knowledge with more than one person and challenges the model of learning separately and shifts it to the community. It focuses on communal rather than individual learning and this is very different than what we learned ourselves as students. So as teachers in the organization, the knowledge building approach invites feedback and new thinking; teaching becomes dynamic in the sense that everybody is learning - not just laying out of information - it's dynamic learning on all fronts - so that teacher learns too. I have no basis for this, it's almost like the teacher and students have a certain amount of knowledge but knowledge is shared, the knowledge base increases exponentially - much more than information being transferred because so many gaps are filled in-and new possibilities open up.

Knowledge building is dynamic and open, as opposed to finite and closed like traditional modes of teaching. Knowledge building is unselfish learning." (C. Kearney, Toronto Rehabilitation Institute, September 2001).

Monthly Reports Views	Notes Created	Participants	Average
Nov-00	25	12	2.08
Dec-00	31	11	2.82
Jan-01	37	16	2.31
Feb-01	26	12	2.17
Mar-01	41	15	2.73
Apr-01	32	13	2.46
May-01	27	12	2.25
Jun-01	25	12	2.08
Jul-01	36	14	2.57
Aug-01	37	14	2.64
Sept-01	48	17	2.82

Monthly Reports Views	Notes Read	Participants	Average
Nov-00	229	15	15.27
Dec-00	396	17	23.29
Jan-01	490	17	28.82
Feb-01	306	16	19.13
Mar-01	692	18	38.44
Apr-01	480	17	28.24
May-01	345	16	21.56
Jun-01	428	18	23.78
Jul-01	714	21	34.00
Aug-01	705	21	33.57
Sept-01	780	21	37.14
Monthly Reports Views	Notes Modified	Participants	Average
Nov-00	29	12	2.42
Dec-00	59	11	5.36
Jan-01	40	16	2.50
Feb-01	21	12	1.75
Mar-01	61	15	4.07
Apr-01	72	13	5.54
May-01	49	12	4.08
Jun-01	67	12	5.58
Jul-01	83	14	5.93
Aug-01	70	14	5.00
Sept-01	86	17	5.06
Monthly Reports Views	Notes Built-On	Participants	Average
Nov-00	10	3	3.33
Dec-00	19	5	3.80
Jan-01	20	11	1.82
Feb-01	13	8	1.63
Mar-01	22	12	1.83
Apr-01	15	7	2.14
May-01	13	6	2.17
Jun-01	8	5	1.60
Jul-01	18	8	2.25
Aug-01	20	11	1.82
Sept-01	25	10	2.50

Monthly Reports Activity Patterns

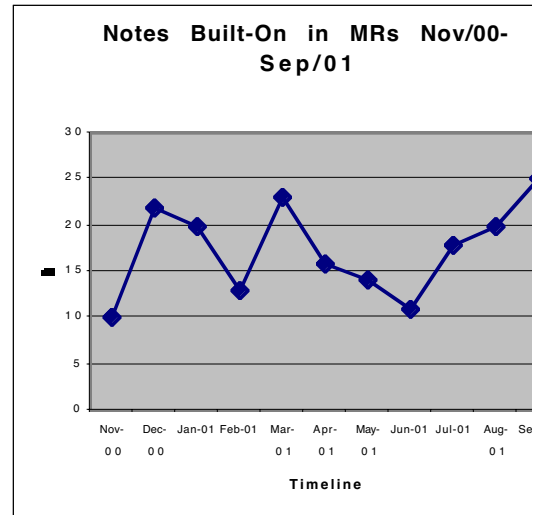
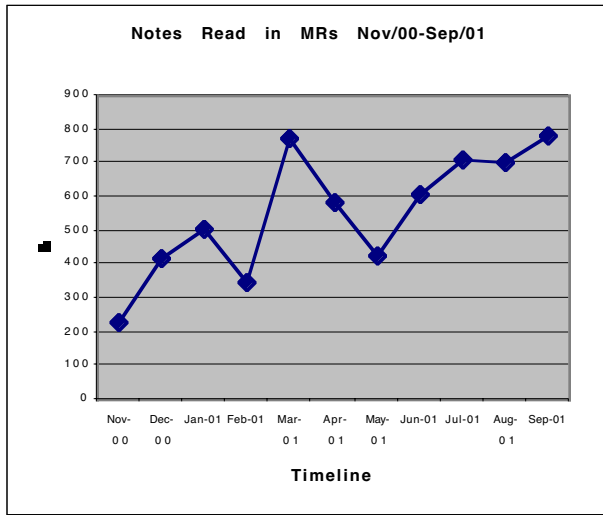
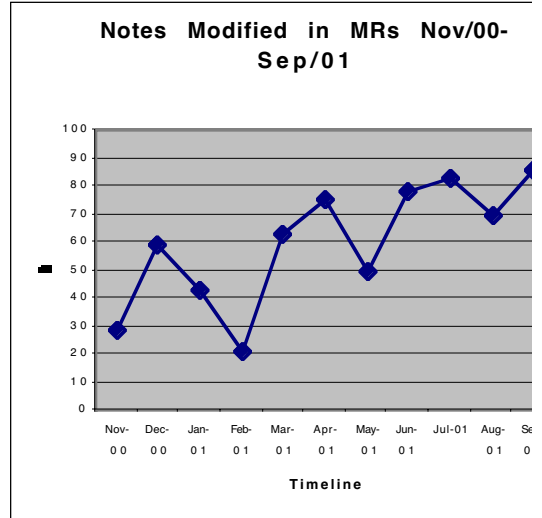
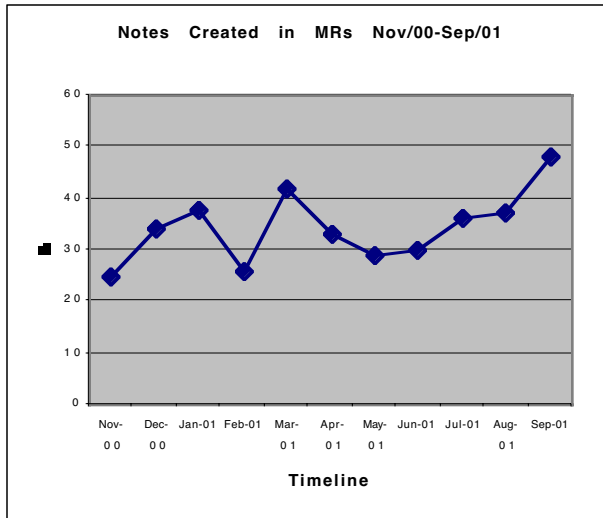


Table 2 - Problem Solving Views (November through September, 2001)

Problems Solving Views	Date Created	Problems of Inquiry
Knowledge Forum Consultations	11/29/01	How to track technical and pedagogical learning needs of participants?
Ethics, Privacy, and Electronic Information Technology	12/06/00	What do we need to understand about provincial and federal privacy legislation and use of virtual technologies in health care?
Chronic Non-Cancer Pain Guidelines	12/13/00	How might Knowledge Forum be used to evaluate chronic non-cancer pain guidelines with complex clinical cases?
Knowledge-Building versus Knowledge Telling	01/30/01	Why is knowledge-building a better pedagogical model in health care education?
Grants and Funding Cycles	02/12/01	How might Knowledge Forum be used for interprofessional grant writing?
Library Services	02/14/01	How might Knowledge Forum be integrated with library services at Toronto Rehab to ensure integration of research into practice?
Virtual Nursing Internship	02/22/01	How might Knowledge Forum be used to support virtual interprofessional mentorship of a graduate-nursing student?
Research Consultations	02/22/01	To collect documentation related to research consultations (interns).
Academic Practice Model	4/23/01	How might knowledge building pedagogy and Knowledge Forum technology help support development of a new model of interprofessional practice dedicated to integration of research into practice?
What's New?!	5/03/01	How might view backgrounds within Knowledge Forum be used as bulletin board of new interprofessional activities and events?
Patient Feedback	5/11/01	How might knowledge building and Knowledge Forum be used to integrate patient and family feedback into the design of patient goals and treatment plans?
KF Summer Institute	7/24/01	How might knowledge building and Knowledge Forum be used to plan and disseminate knowledge about the annual Summer Institute (especially for participants unable to attend the SI)?
GTA Rehab Network	8/28/01	How might knowledge building and Knowledge Forum be used to support the GTA Rehab Network?
Knowledge Society Network	9/25/01	How might knowledge building and Knowledge Forum be used to build on research initiatives identified at the Summer Institute?

- c) **Variations from last quarter's stated objectives:** Last quarter (1st) we reported that we abandoned activity in the Learning Portfolios View due to activity elsewhere in problem solving views. Such was the case this 2nd Quarter and we anticipate no activity in the Learning Portfolios View next quarter. We also indicated that we would review purpose of Learning Portfolio View with participants to determine how this view supports interprofessional practice. Feedback from participants indicates that continuous learning and reflection are being supported in the Monthly Reports views and that the Learning Portfolio view is seen as either redundant or 'over and above' what participants are willing to commit to at this time. The concept of the Learning Portfolio has been well established as a tool for professional development. However, it could well be argued that the ongoing, continuous discourse each month in the Monthly Reports views has transformed a static tool (traditional learning portfolios) into a more dynamic learning activity, and for that reason is more valued by participants. This concept of a 'living' learning portfolio will be further pursued in the literature and reported on at a later date.
- d) **Areas of concern regarding deliverables:** To date, we have no concerns related to this project and have received positive feedback from participants in the study.
- e) **Next quarter's forecast deliverables:** Next quarter's forecast, like this one, will focus on activity in monthly reports and problem solving views, and data analyses.
- f) **Schedule:**

Updated Schedule for Remaining Project Deliverables

Activities	Completion Date	Deliverables
Monthly Reports	March 2002	12 Views, minimum 192 notes
Problem Solving Views	March 2002	6 Views
Learning Portfolios	March 2002	Minimum 192 notes copied into individual Learning Portfolios
Data Analyses	To be advised	Descriptive frequency data of participation patterns over time.

1.2 Budget:

(a) Forecast quarterly expenditures:

Direct Salaries and benefits:	\$N/A
Consultant fees:	\$16,625.00
Direct materials and supplies:	\$N/A
Printing & dissemination:	\$N/A
Evaluation:	\$N/A
Other:	\$N/A

(b) Actual quarterly expenditures:

Direct Salaries and benefits:	\$N/A
Consultant fees:	\$15,155.00
Direct materials and supplies:	\$N/A
Printing & dissemination:	\$1,525.00
Evaluation:	\$N/A
Other:	\$N/A

(c) **Variations in expenditures:** We are \$1,470.00 under budget for consultant fees this quarter. As well, we did not spend the anticipated amount on printing and dissemination and would like to carry over these charges to the next two quarters for conference participation, communication and dissemination costs.

(d) **Budgetary concerns:** I have left a message for Ginette Thibault – and will follow up with her regarding our budgetary concerns. We are working with the assumption that the period of funding ends March 2002. We anticipate being under budget 3rd Quarter due to loss of key staff person on this project. Ideally, we would like to reapply the unspent funds to the next quarter or extend the period of funding by one quarter.

(e) **Next quarter's forecast expenditures:** \$16,625.00 estimated expenditures for next quarter – we expect to be underbudget Q3.

Direct Salaries and benefits:	\$N/A
Consultant fees:	\$16,625.00
Direct materials and supplies:	\$N/A
Printing & dissemination:	\$5,000.00
Evaluation:	\$N/A
Other:	\$N/A

2.0 OVERVIEW

2.1 Changes Affecting Project

Resignation of Kirk Perris, Research Assistant, OISE/UT in August 2001 caused a disruption in the work plan and less billable hours during the 2nd and 3rd quarters. Jud Burtis, Senior Researcher and other members of the OISE/UT research team will consult on this project as required.

2.2 Dissemination and Promotion Plan

1. Russell, A. (May 2001). *Why e-Learning? Benefits and drawbacks of building an e-Learning Environment for Health Professionals*. E-Health 2001: The future of health care conference, Toronto.
2. Russell, A. (May 2001). *Interprofessional knowledge-building in rehabilitation and complex continuing care*. Invited participant in daylong workshop hosted by the Office of Learning Technologies, CANARIE and Health Canada.
3. Campbell, H., Spevakow, D., Russell, A., & Hamilton, L. (June 2001). *Knowledge Forum: Developing chronic non-cancer pain clinical practice guidelines, putting them into practice and using virtual technologies to evaluate*. New Frontiers in Pain, 4th Annual Pain Management Conference, Toronto.
4. Russell, A., Bereiter, C., Scardamalia, M., Campbell, H. (August 2001). *Knowledge-building in health care: Fostering professional development, continuous learning and reflection*. Knowledge-Building/Knowledge Forum Summer Institute, Toronto.
5. Russell, A. (October 2001). *Knowledge-building in health care*. Workplace Learning Conference, Germany-Canada-EU Health Telematics Partnership, Toronto.
6. Parboosingh, J., Jennett, P., Russell, A., & Longpre, (November 2001). *A. Evaluating technologies for team learning in health sector workers: a review and synthesis of the literature and recommendations for future research*. To be posted at <http://olt-bta.hrdc-drhc.gc.ca/>

7. Russell, A., Campbell, H., Scardamalia, M., & Bereiter, C. (November 2001). *Interprofessional knowledge-building using virtual technology*. Poster presented at Ontario Hospital Association Annual Conference, Toronto.
8. Russell, A., Campbell, H., Scardamalia, M., & Bereiter, C. (February 2002). *Interprofessional knowledge-building using virtual technology*. Poster to be presented at the Greater Toronto Area Rehabilitation Network Annual Conference, Toronto.
9. Brett, C., Russell, A., DeFroy, S. (March 2002). *The value and validity of knowledge building pedagogy and technology to foster professional development*. Paper to be presented at the American Educational Research Association Annual Conference, New Orleans.

3.0 PROJECT DESCRIPTION

I sent Ginette Thibault, Project Officer, OLT Q2 Progress Report and Financial forms November 28th, 2001 by e-mail. Funding of this project supports continuous learning of an interprofesional team in health care.

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