



Annual Report 2003-04 Institute for Research on Learning Technologies

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Background and Mandate

The Institute for Research on Learning Technologies (IRLT) has a broad mandate to engage in systematic inquiry, discussion, and information sharing related to the uses of technology in teaching and learning. Originally established in 1987 within the Faculty of Education as the Centre for the Study of Computers in Education, the institute became a university-based research unit in June 2001 and was re-named. IRLT encourages the formation of links with faculty members across the university and with schools, government, and industry to provide collaborative, multidisciplinary approaches to research problems and issues. More specifically, the goals of the Institute are as follows:

- To engage in research, study, and public discussion of issues related to the pedagogical uses of technology and to the moral, ethical, and educational implications of its use;
- To develop projects that make innovative uses of new technologies in teaching and learning;
- To maintain an active program to disseminate findings of its projects, its activities, and developments in the field to educators and other interested parties;
- To foster collaboration between academics, educators, and industry and government personnel on research and development problems and issues of mutual concern and interest.

Although the Institute's mandate is to conduct research in public schools, postsecondary education, and lifelong learning, until recently most members focused their research on technology in schools. Over the past several years, however, members have increasingly directed their research attention to research and evaluation of instructional technologies in higher education and beyond.

Organizational Structure and Staffing

Personnel

IRLT is managed by a director who is appointed to the position by the Vice-President (Research and Innovation) as it is a university-based research unit. The current and founding director is Professor Ron Owston (Education). Professor Renate Wickens (Fine Arts) is Acting Associate Director in place of Professor Mary Leigh Morbey (Education) who is on sabbatical in 2004-2005.

Herb Wideman is employed full time on annual contract as Senior Researcher, while Kathryn Cook works part time as Research Assistant. During the past year four students were hired as Graduate Research Assistants.

Governance

Shortly after IRLT was formed, the membership recommended not to proceed with forming a formal advisory board as set out in the original proposal for IRLT. Instead an enlarged (from the original proposal) Executive Committee was struck consisting of the Director, Associate Director, two Members-at-Large, and a Graduate Student. In 2003-04, Professor Avi Cohen (Arts), Richard Jarrell (Science & Engineering), and Reza Nasirzadeh (Education graduate student) filled the latter three positions. The Executive is responsible for setting strategic priorities and policies for IRLT.

Publications

IRLT publishes a series of technical reports based on members' research. These reports are made available to the research community at the Institute's Web site. A listing of this past year's reports is below.

York University Faculty Affiliated with the Centre (2003-2004)

IRTL has members from all Faculties at York as well as Glendon College. The Institute has one honorary member, William Mitchell, retired education officer of the Ontario Ministry of Education. York faculty membership for 2003-04 was as follows:

Name	Affiliation
Alex Pomson	Faculty of Education
Alison Griffith	Faculty of Education
Allan Koretsky	Department of English, Faculty of Arts
Ananya Mukherjee-Reed	Department of Political Science, Faculty of Arts
Andre Kushniruk	Dept of Mathematics & Statistics, Faculty of Arts
Avi Cohen	Department of Economics, Faculty of Arts
Bill Found	Faculty of Environmental Studies
Dalton Kehoe	Division of Social Science, Faculty of Arts
Evelyne Corcos	Counselling & Career Development, Glendon College

Francoise Mougeon	Department of French Studies, Glendon College
Gail Lindsay	School of Nursing, Atkinson Faculty of Liberal and Professional Studies
Gareth Morgan	Schulich School of Business
Graham Orpwood	Faculty of Education; York/Seneca Institute for Science, Mathematics, Technology, and Education
Heather Lotherington	Faculty of Education
Jennifer Jenson	Faculty of Education
Leslie Korrick	Fine Arts Cultural Studies, Faculty of Fine Arts
Margaret Sinclair	Faculty of Education
Monique Adriaen	Dept of French Studies, Faculty of Arts
Peggy Warren	Reference, Scott Library
Peter Roosen-Runge	Department of Computer Science, Faculty of Science & Engineering
Poonam Puri	Osgood Hall Law School
Razika Sanaoui	Faculty of Education
Radu Campeanu	School of Analytic Studies & Information Technology, Atkinson
Renate Wickens	Fine Arts Cultural Studies, Faculty of Fine Arts
Richard Jarrell	Division of Natural Science, Faculty of Science & Engineering
Ron Sheese	Department of Psychology, Faculty of Arts
Ross Rudolph	Department of Political Science, Faculty of Arts
Shelly Hornstein	Department of Fine Arts, Atkinson Faculty of Liberal and Professional Studies
Simon Fodden	Osgoode Hall Law School
Stan Shapson	Vice-President (Research & Innovation); Faculty of Education
Stephen Chen	School of Analytic Studies & Information Technology, Atkinson
Suzanne McDonald	Associate V-P (Research); Department of Psychology, Atkinson Faculty of Liberal and Professional Studies
Tom Johnson	Osgoode Hall Law School
Zbigniew Stachniak	Dept of Computer Science & Engineering, Faculty of Science & Engineering

Additionally, several non-York faculty are affiliated with IRLT, as well as Janet Murphy (Director of the York ABEL Program) and six graduate students.

Activities in 2003-2004

Listed below are selected articles, chapters, and books of members, as well as conference papers, reports, and technology development activities.

Selected Articles, Chapters, and Books (IRLT members indicated in bold)

Jenson, J. & de Castell, S. (2004). "Turn It In": Technological Challenges to Academic Ethics. *Education, Communication and Information*, 4, 2/3 p. 245-67.

de Castell, S. & **Jenson, J.** (2004). The Attentional Economies of New Learning Environments. *Educational Theory*, 54, 4, p. 381-97.

Jenson, J. (2004). "When I Close My Classroom Door": Private Places in Public Spaces. In E. Meiners and F. Ibanez-Carrasco (Eds.) *Public Acts: Disruptive Readings on Curriculum and Research* (pp. 135-58). New York: RoutledgeFalmer.

Jenson, J. & de Castell, S. (2004). Fair Play: Gender, Digital Gaming and Educational Disadvantage. In K. Morgan, C.A. Brebbia, J. Sanchez & A. Voiskounsky, (Eds.) *Human Perspectives in the Internet Society: Culture, Psychology and Gender* (pp. 227-234). Southampton: WIT Press.

de Castell, S. & **Jenson, J.** (In Press). Education, Gaming and Serious Play: New Attentional Economies for Learning. In *International Handbook for New Learning Environments*. Kluwer.

Kehoe, D. (2004) *Educator, Students Provide Frontline Perspectives, Syllabus*, 17(11), 36.

Kushniruk, A.W., & Patel, V.L. (in press) Cognitive Approaches to Evaluation in Medical Informatics. To appear in J. Anderson (Ed.) *Evaluating health care information systems: Methods and applications*, 2nd edition, Springer-Verlag.

Kushniruk, A.W., & Patel, V.L. (in press) Cognitive Approaches to Evaluation in Medical Informatics. To appear in J. Anderson (Ed.) *Evaluating health care information systems: Methods and applications*, 2nd edition, Springer-Verlag.

Grant, A., **Kushniruk, A.**, Villeneuve, A., Bolduc, N., & Moshyk, A. (in press) An informatics perspective on decision support and the process of decision-making in health care. To appear in L. Lemieux-Charles and F. Champagne (Eds.) *Multidisciplinary Perspectives on Use of Knowledge and Evidence in Healthcare*. University of Toronto Press.

Kushniruk, A. W. (in press). Technology, health care and the elderly: Where are we headed? *Perspectives: The Journal of Gerontological Nursing*.

Kushniruk, A. W. & Patel, V.L. (2004). Cognitive and usability engineering approaches to the evaluation of clinical information systems. *Journal of Biomedical Informatics*, 37, 56-76

Lotherington, H. (2004). Emergent metaliteracies: What the Xbox has to offer EQAO. *Linguistics and Education*, 14, 305-319.

Sinclair, M. P. (2004, in press). Complexity theory and the mathematics lab-classroom. *Complicity: An International Journal of Complexity in Education*.

Morbey, M. L. (2003). Upload/Download/Reload: Women and Cyberculture. *Convergence: The Journal of Research into New Media Technologies*, 9(3), 93-97.

Owston, R. D. (2003). School context, sustainability, and transferability of innovation. In R. Kozma (Ed.), *Technology, innovation, and change—A global phenomenon*. Eugene, OR: International Society for Technology in Education.

Owston, R. D., Garrison, D. R., & **Cook, K.** (in press). Blended learning at Canadian universities: issues and practices. In C. J. Bonk & C. Graham (Eds.). *Handbook of blended learning environments: Global perspectives, local designs*. Hoboken, NJ: Wiley.

Sinclair, M. (2004). Working with accurate representations: The case of pre-constructed dynamic geometry sketches, *Journal of Computers in Mathematics and Science Teaching*, 23(2), 191-208.

Sinclair, M. P. (2003). Some implications of the results of a case study for the design of pre-constructed, dynamic geometry sketches and accompanying materials. *Educational Studies in Mathematics*, 52(3), 289 – 317.

Selected Conference Papers

Cohen, A. (2003, August). Review of N. Rosenberg, *Schumpeter and the Endogeneity of Technology: Some American Perspectives*, *EH.NET*, <http://eh.net/bookreviews/library/0661.shtml>.

Cohen, A., & Parke, K. (2004, May). *More Bums, Same Seats: Using MediaSite Live in a Hybrid Course*. CADE This is IT Conference Pioneers in a New Age, York University, Toronto, ON.

Cohen, A., **Adriaen, M.**, Dickie C., Petrie, O., **Sheese, R.** (2004, June). *Technology Dialogues*, STLHE 2004 Conference, University of Ottawa.

Coffey, S. & **Lindsay, G.** (2004, May). *Emerging professional issues: Maintaining the dialogue while managing confidentiality*. CADE/This is IT Pioneers Conference. York University, Toronto, ON.

Taylor, N. & **Jenson, J.** (2004). “Playing by Design: Putting ‘Serious Play’ to Work”. Association for Media and Technology in Education in Canada Annual Conference Proceedings.

- Jenson, J.** (2004, May). Learning to play: Girls and computer games. Canadian Society for the Study of Education. Winnipeg, Manitoba.
- Jenson, J.,** & de Brushwood Rose, C. (2004, April). *Boundaries and Bridges: Supporting ICT Integration in Schools*. American Educational Research Association Conference. San Diego, California.
- Jenson, J.,** & de Castell, S. (2004, February). *Engaging Media: Innovative Practices for Activism and Citizenship*. NCTEAR Conference: Transforming literacies: Youth culture, new media and social change. Berkley, California
- Kehoe, D.** (2004, July). *Video Capture for Blended Learning: Using Mediasite Live*. Proceedings of Syllabus Conference, San Francisco.
- Kehoe, D.** (2004, May). *Communication in Everyday Life: A Hybrid Learning experiment*. Pioneers in a New Age , Canadian Association for Distance Education (CADE) Conference, York University, Toronto, ON.
- Cysneiros, L., & **Kushniruk, A.W.** (2003). Bringing usability to the early stages of software development. *Proceedings of the 11th IEEE International Requirements Engineering Conference 2003*, 359-361.
- Kushniruk, A.,** Triola, M., Stein, B., Borycki, E., & Kannry, J. (2004). The relationship of usability to medical error: An evaluation of errors associated with usability problems in use of a handheld application for prescribing medications. *MedInfo – World Congress on Medical Informatics 2004*, 1073-1076.
- Lotherington, H.** (2004, June). *Reconstructing Goldilocks: New learners, new media, old stories*. Paper presented at the Ontario Conference for Applied Linguistics, Queen's University, Kingston, ON.
- Morbey, M. L.** (2003, October). *Real and Virtual Spaces of World National Musea*, Graduate Program in Education Symposium on International Education and Globalisation, York University, Toronto, Ontario.
- Morbey, M. L.** (2004, May). *Deliberative Inquiry Forum on the Effects of Internet Communication Technology on Higher Education Learning Experiences*, University of Calgary, Calgary, Alberta.
- Owston, R. D.** (2004, April). *Contextual factors that sustain innovative pedagogical practice using technology: An international study*. A paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- Owston, R., Wideman, H, Morbey, M. L. & Murphy, J.** (2004) *Transforming Teacher Professional Practice through Broadband Technologies*, Society for

Information Technology & Teacher Education 15th International Conference, Atlanta, Georgia.

Sinclair, M. (2003). The provision of accurate images with dynamic geometry. In N. A. Pateman, B. J. Dougherty and J. T. Zilliox (Eds.) *Proceedings of the 27th Conference of the International Group for the Psychology of Mathematics Education held jointly with the 25th Conference of PME-NA (Hawaii, U.S.)* V4 (pp 191-198)

Wideman, H., & Owston, R. D. (2003, April). *Communities of practice in professional development: Supporting teachers in innovating with technology*. A paper presented at the annual meeting of the American Educational Research Association, Chicago.

Selected Member Reports

Lotherington, H. (2004, June). *Report on the technological literacy needs of the Faculty of Education pre-service program*. Report commissioned by the Faculty of Education, York University.

Lotherington, H. (2004). Multiliteracies and inner-city kids: Finding our way into the loop. *TEL & CAL, Ausgabe 01/04*, 18-26.

Morbey, M. L. *Professional Transformation: The ABEL 2003 Summer Institute*. Toronto: York University Institute for Research on Learning Technologies, 2004

Owston, R. D., & Cook, K. (2003-4). *Evaluation of Health Canada's Public Health Information System (iPHIS)*. Three reports: British Columbia, Alberta, Saskatchewan. Health Canada: Ottawa, ON.

Sinclair, M. (2004). *Developing activities involving pre-constructed, web-based dynamic geometry sketches for use in elementary mathematics*. Report to the TCDSB on research funded by a York University Small SSHRC grant.

IRLT Technical Reports (all available at website)

Technical Report 2003-1:

Cook, K., Cohen, A., & Owston. *If you build it, will they come? Students' use of and attitudes towards distributed learning enhancements in an introductory lecture course*.

Technical Report 2003-2:

Wideman, H. (with Morbey, M. L., Owston, R. D., Granger, C., Servage, L., Juliana, M., Brode, A, Nasirzadeh, R, & Wismer, J.). *The ABEL Project first interim evaluation report*.

Technical Report 2004-1:

Wideman, H., Morbey, M. L., Owston, R. D., & Granger, C. (Servage, L., Brode, A, Sanaoui, R., Springate, L., Nasirzadeh, R, Wismer, J., Julian, M, & Greidanus, E.). *The ABEL Project final research and evaluation report.*

Technical Report 2004-2:

Owston, R. D. (with Sinclair, M., Wideman, H., & Kennedy, J.). *Evaluation of The Learning Partnership teacher blended learning project for mathematics.*

Technical Report 2004-3:

Cook, K., & Owston, R.D. *Evaluation of Health Canada's Skills Enhancement for Health Surveillance program.*

Technical Report 2004-4:

Wideman, H., & Owston, R. D. *Evaluation of Tablet PC use at Northern Lights Public School.*

Selected Projects/Initiatives/Course Development

- **Avi Cohen** was Dean's Advisor on TEL Initiatives, Faculty of Arts. He was responsible for the development and delivery of recommendations of Faculty of Arts TEL Roundtable: *do TEL*, a 10 week Faculty Development Course for instructors interested in transforming an existing face-to-face course to take advantage of learning and accessibility possibilities afforded by the web; and for the *Student Technology Assistant (STA) Program*, to provide technical support for faculty members with TEL projects, and to improve the training and educational experiences of participating students.
- During the summer of 2003, **Richard Jarrell** (Natural Science) and John Heddle (Biology) of the Faculty of Science & Engineering developed a new, blended Natural Science course. This course, *Science: Past, Present and Future*, has a large-lecture format (200 students) with face-face lectures and small-group in-class assignments. Lectures used PowerPoint, the internet and other software. Tutorials are on-line, based upon WebCt discussions; chat rooms are occasionally used. TAs monitor and grade on-line work.
- **Monique Adriaen**, in her role as Faculty Associate at the Centre for the Support of Teaching, was responsible for two groups that examined how technology can be used to serve pedagogy. Group A: Discussion group (monthly meetings) to discuss such issues as the use of course web sites, of discussion lists, of the Internet, etc. in teaching, as well as pedagogical issues as instructional models, and evaluation and assessment. Group B: Development (monthly meetings). She helped a small group of faculty and staff learn how develop a technology project for one of their courses.
- **Monique Adriaen** also initiated a TEL project in the French Department in which a number of faculty are involved. The idea is to create a set of small learning objects accessible on the French Studies web site that students can use to learn, review, update basic skills needed to be a successful language student

(eg, how to use a dictionary; how to find relevant sources at the library and on the Internet; how to review for a grammar test; how to expand one's vocabulary, etc.)

- **Gail Lindsay** co-developed and taught AK/NURS 3710 *Nurses experience of healthcare environments*, which is the only online course in the School of Nursing.
- **Dalton Kehoe** is researching blended learning in SS 3311, *Communication in Organizations*, using Mediasite Live video streaming technology.
- **Janet Murphy** directed the Advanced Broadband Enabled Learning (ABEL) program (abelearn.ca) which makes use of CANet4 to provide school teachers and their students with videoconferencing and online learning resources. She conducted many videoconference mediated learning (curricular and professional development) events bringing in education experts and mentors i.e. Mock Trails involving Justice of the Peace Moran, faculty from U of Alberta and York U, professional acting troupes, Futurists, and Environmentalists. Additionally, she has made numerous presentations on the ABEL program and related technologies at national and international gatherings.
- **Zbigniew Stachniak** curates the York University Computer Museum (YUCoM) which is a historical collection and a research center for the history of computing located in the Department of Computer Science. Its mission is to preserve, document, and interpret the history of the information age in Canada, with special emphasis on the creation and the development of the Canadian microcomputing industry.
- Project Mosaica (www.mosaica.ca) led by **Shelley Hornstein** presents contemporary Jewish culture in its current form on the Web. The project examines Jewish culture in the arts, and uses the Web in particular as an interactive cultural environment.
- **Ananya Mukherjee Reed** developed a multilingual website for the Human Development Resource Network (HDRNet). It is a specialised information gateway and electronic library on human development and international co-operation. See <http://www.yorku.ca/hdrnet/>.
- **Graham Orpwood** directs the York/Seneca Institute for Mathematics, Science and Technology Education (YSIMSTE) (ysiste.com), which is a partnership of York University (Faculty of Education and Faculty of Science and Engineering) and Seneca College of Applied Arts and Technology (Faculty of Technology). Its mission is to create and undertake initiatives in teaching, curriculum, applied R&D, and outreach, with a view to improving the quantity and quality of education in mathematics, science, and technology at all levels of education.

- **Ron Owston and Katharine Janzen** (Seneca) co-direct the Technology Enhanced Learning Institute (TELi) (teli.ca), which is a partnership of Seneca College of Applied Arts & Technology and York University. Its mission is to encourage and showcase innovative collaborative projects that build on multidisciplinary and complementary strengths of Seneca and York.
- **Ron Owston, Andre Kushniruk, and Jennifer Jenson** participate in the SSHRC New Economy project SAGE (Simulations and Game Environments) for Learning based at Simon Fraser University that is exploring the potential of games, simulations, and simulation games to support learning. Owston is leader of the Tools and Methodology domain in which Kushniruk is a co-investigator. Jointly they are developing a web-based evaluation tool called the Virtual Usability Lab. Jenson, a principal investigator in the Learning with Simulations domain, is co-developing Contagion, a game meant to teach children about the transmission and prevention of diseases such as AIDS, SARS and West Nile virus.
- **Ron Owston and Kathryn Cook** served as external evaluators on two of Health Canada's initiatives. The first is an ongoing project to evaluate a series of online courses on epidemiology developed by Health Canada for health care professionals across Canada. The second was an evaluation from the front line users' perspectives of a public health information system (known as iPHIS) being developed for public health offices across Canada. These evaluations took place in Alberta, British Columbia, and Saskatchewan.
- **Margaret Sinclair, Herb Wideman, Ray Bowers, and Jane Kennedy** (graduate student) collaborated with **Ron Owston** on the evaluation of the Teacher eLearning Project. The project provides online and face-to-face professional development for elementary school mathematics and science teachers.
- **Andre Kushniruk** is currently working with a number of groups in Canada (including the University of Victoria and York University) as well as several sites in the United States (including St. Jude's Hospital in Memphis) on a three phase project. Entitled *Evaluation of Collaborative Tools for Supporting Group Decision Making and Distance Education in Healthcare*, the first project phase involves the comparison of a number of commercially available Web-based conferencing tools and the analysis of recordings made of meetings using such tools in a number of domains. Based on the empirical analysis of the data collected, recommendations will be made towards the development of user interfaces and functional capabilities of a new generation of such tools for supporting meetings, distance consultations and health professional education. Prototypes will then be developed and tested in the third phase.
- **Evelyne Corcos** is working on a project entitled "le Regroupement des universités de la francophonie hors Québec." The project involves the

translation into French of two existing websites that present psychology experiments on-line: PsychLab on-line (<http://www.uwm.edu/~johnchay>)-- University of Wisconsin, and Psychexperiments (<http://psychexps.olemiss.edu/>) -- University of Mississippi. The French mirror sites are Labpsy (<http://www.uwm.edu/~johnchay/indexFrench.htm>) and Expérience en psychologie (<http://www.yorku.ca/eep/>). In addition to the translation of already available experiments, four new classical experiments were designed in both English and French: The Brown-Peterson Paradigm, The Sperling Paradigm, The Sternberg Paradigm, and the Posner Preferential Perceptive Processing -- all available at <http://www.yorku.ca/eep/>. These experiments allow an individual or a class to control independent variables, and to download data (excel file) for statistical analysis. Providing students with a virtual lab allows them to appreciate elements of experimental design only acquired through experiential learning.

IRLT Speaker Series

To fulfill its mandate of public dialogue and dissemination of research, IRLT sponsors a speaker series each year. In 2003-04, the events below were held.

Date	Speaker	Topic
November 6, 2003	Jennifer Jenson	Retooling the Learning Game: Educational Gaming and Play
November 20, 2003	Tom Johnson	TEL in a Socratic World: Challenges in Moving the Dialogue.
December 8, 2003	Curt Bonk, Indiana University	Active Learning with Technology: Myths, Magic, or Just a lot of Bonk
February 9, 2004	Graham Orpwood	Home Renovations: Rethinking post-secondary education in an era of technology enhanced learning
March 31, 2004	Reesa Greenberg, Shelley Hornstein, Mary Leigh Morbey, Zbigniew Stachniak	Digital Museums: Interdisciplinary Perspectives