Blended Learning for Soft Skills Development:
Testing a Four-Level Framework for Integrating Work and Learning to Maximize Personal Practice and Job Performance

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

As Canadian businesses look for new ways to empower workplace learning to meet demands to achieve more while having fewer resources available for training and development, interest in delivering programs using different kinds of instructional approaches (e.g., face-to-face, problem-based learning, coaching) combined with a variety of technologies (e.g. discussion boards, e-content, conference calls) – generally referred to as blended learning – is growing. These blended learning strategies can be designed to provide opportunities for supporting just-in-time (i.e., immediate) access to learning tools and supports anywhere, anytime - especially important when the objective is to improve performance on the job. Generally, research in this area has focused on comparisons of classroom versus online courses versus blended programs indicating blended programs out-deliver either online or classroom when used alone. However, analysis of the impact of different blended learning strategies on personal soft-skills (e.g., coaching, teamwork, critical thinking) development and job performance has not been given much attention. The focus of this research study was to compare the learning impact/outcomes of four different blended learning strategies (offered in parallel in each of four research groups) based on a theoretical model emerging from work reported by Adams (2004). Each level in the model was defined by a different blended learning strategy that moves from a very loose coupling of personal learning with job performance in level 1 (e.g., online learning used as a background resource for self-directed learning), to tighter and tighter couplings of learning with job performance in level 2 (e.g., online materials integrated with a structured classroom course and required as pre-and post work) and level 3 where online learning materials were integrated with personal learning objectives and blended with collaborative discussion forums and peer coaching. Level 4, defined in this model as a *very tight* coupling of personal learning with job performance in relation to the previous three blended learning strategies mentioned involved using online learning materials to support personal job-based projects where participants worked on the projects as part of their learning (i.e., an action-learning pedagogical approach) where a demonstrable return on learning (ROL) was measured.

Rationale for this study was threefold: (a) to observe, monitor, test, review, and validate the four-level framework in a large, leading-edge Canadian organization; (b) to deepen and extend our understanding of the use of e-learning for supporting soft-skills development in a

viii

Canadian workplace aimed at maximizing job performance impact; and (c) to provide a solid platform for future blended learning research in the workplace.

In this project involving York University's Schulich School of Business and Scotiabank, two hundred Scotiabank employees who had been and/or were involved in management training and personal development were assigned to one of four parallel blended learning offerings. Feedback was gathered through surveys and interviews about various aspects of the six-week program. Evaluation included pre/posttest soft-skills and learning styles assessment results for each learner in each of the four assigned blended learning groups. Participants also completed confidential self-report assessments at the end of the research project, including comments about what was achieved (e.g., qualitative/quantitative impacts resulting from actions taken on their personal situations) and personal observations on barriers and motivators for learning.

Methodology

The research study included qualitative and qualitative methods, with before and after measures where participants were randomly assigned to different groups that offered the four different blended learning strategies in parallel. An exception to random assignment was made for participants who were already registered in a classroom course before the research got underway (i.e., level 2 in the model being tested). This methodology combined the rigour of theory testing three hypotheses (presented below) within a larger action-learning framework that enabled the researchers to expand or modify some of the original research plans to ensure a continuous improvement philosophy:

Hypothesis/Proposition #1: The tighter and more well-defined the links between learning and the job (i.e., moving from blended learning strategy level 1 to 4), the more likely participants are to report demonstrable impacts/positive outcomes (i.e. higher benefit-cost ratios and soft-skills development in level 4 than 1).

Hypothesis/Proposition #2: The tighter and more well-defined the links between learning and the job (i.e. moving from blended learning strategy level 1 to 4), the more likely participants are to report learning motivators rather than barriers to learning (i.e., job specific action-learning projects in level 4 would create a highly motivational context for learning).

Hypothesis/Proposition #3: The closer the match between individual learning styles and the blended strategy employed, the more likely participants are to report positive learning outcomes and impact on personal skill development (i.e., those favouring an auditory (listening-

based) learning style would have a better experience in Research Group 2 where a face-to-face classroom-based component was included. Similarly it was anticipated that those favouring a kinesthetic (activity-based) learning style would perform better in Research Group 4 where a project-based component was featured).

Research Findings

The most significant, and rather unexpected, discovery in this research is that some individuals excelled in *each* of the blended learning research groups – not just in level 4 as was predicted. And, more importantly, no common individual characteristics for those who did well in each group, or across the research study, were evident. Learning styles differed, learning preferences differed, and major motivators and major barriers for learning also differed. In other words, the major finding is the inability to find a predictable, repeatable, no-fail, best approach to **workplace** learning for **soft-skills** development. This unexpected finding has seeded the idea for a new highly individualized, "mass customization" theory for effective blended learning emphasizing the importance of acknowledging the complexity of providing effective soft-skills development programs where personal learning profiles (e.g., personal characteristics, learning needs, learning style/preferences, job responsibilities, job context, job experience, etc.) are unique for every learner. More research needs to be done, as this study doesn't directly examine choice. However, individualized learning is not a new idea. Learning experts have been talking about it for over a decade. What is new, however, is the way blended learning strategies can make a "mass customizable" learning strategy - a blend tailored to specific learner characteristics, experiences and learning needs - a vibrant reality.

Since blended learning strategies more tightly linked directly to the job (i.e., levels 3 and 4) did have greater learning impacts in an organizational culture that favours learning, the research findings also reinforce the importance of implementing workplace learning programs that are tightly integrated with specific workplace projects and/or responsibilities (e.g., coaching subordinates to improve their job performance) to maximize impact. As well, the context-specificity of barriers and motivators for workplace learning (i.e., including noteworthy differences between organizational contexts, groups with different blended learning offerings, individual learners in the same groups, and between workplace and academic contexts) is particularly noteworthy. Similarly, differences in pre/posttest learning styles/preferences, as well as differences in learning outputs and performance between individual learners in, and between,

blended learning groups suggests that supporting individual learning is a complex undertaking in the workplace.

Implications & Recommendations

A highly individualized, "mass customization" approach to employee development, where every learner who is responsible for personal job performance improvement (as is the case in management jobs) can be encouraged and supported to take ownership of his or her own personal learning, requires a fundamental shift from an organizational model where decisions are made for learners, to one where organizational learning experts ask questions to find effective ways to support more of a learner-controlled learning philosophy. This is not a traditional course-based model. Rather, it needs to be viewed as a holistic approach designed to foster self-directed, meaningful, career-long learning.

Recommendations for those interested in developing blended learning strategies for soft-skills development aimed at maximizing individual and organizational learning impact/outcomes include the following highly practical advice:

The research importance of flexible blended learning models that offer learners as much choice as possible. Blended learning approaches offer a rich context for learning where different technologies and instructional approaches engage learners in a variety of ways, thereby enabling learners to process information using more than one learning style. Therefore, consider offering learners different choices (e.g., those identified in the four-level model). In this way, learners will be able to self-select the modes of interaction that suit their needs for the topic being studied and the way they can best integrate learning and job responsibilities.

The value of regularly scheduled learning over time. In this research study, learners dedicated twenty minutes a week (i.e., two hours over six weeks) to personal learning and quantifiable value was created for the organization. Designing blended learning offerings in short spurts most likely makes it easier to make time for personal learning than it will be to attend half-day or all-day seminars or training sessions.

The importance of "learning accountability loops" to create tightly structured links between work and learning. When the aim is to maximize job impact, creating blended learning strategies that tightly link learning and work can be effective; however, doing so will vary by organization and individual. Therefore, consider asking learners how they would prefer to create

the tight framework that will provide the structure needed to ensure learning gets on their schedule.

The importance of pre-/posttests to evaluate outcomes. The pre/posttest learning outcomes data provided an objective manner in which to assess the degree of value created and soft-skills development for both learners and the organization. The pre/posttest comparisons for learning styles and barriers/motivators for learning were also useful for surfacing assumptions and provoking new insights about learners and learning contexts. Feeding this information back to participants can promote reflection. In time, this regular feedback may also help to promote a deeper understanding for both organizations and individual learners on how best to structure learning experiences that have maximum impact for everyone involved.

The importance of acknowledging and rewarding learning in meaningful ways for learners. The research findings revealed the importance of creating workplace contexts that motivate learning rather than block it. This, however, is more complex than was originally anticipated. What one person my find motivating or rewarding, another may find irrelevant, or possibly even a de-motivator or barrier to personal learning. Therefore, asking learners about motivating and rewarding factors seems essential to for success.

The importance of a continuous improvement mandate for training and development departments. Many of the findings in this research study invite a re-evaluation of conventional wisdom and rethinking of conventional practice around learning. This means seriously looking at every course and program being offered to understand where gains can be made and ways to create business cases for continuing, updating or abandoning offerings. All too often, new offerings that outlast their value, but never get cycled out of production, are draining valuable organizational resources that could be directed towards upgrading and/or initiating new, more relevant offerings. Many of the approaches explored in this study (i.e., outcome measures by learner and by offering; pre/posttest contextual evaluations; learner preference surveys) could be used as a starting point.

Concluding Thoughts & Next Steps ...

The research study met the stated objectives: to observe, monitor, test, review, and validate the four-level blended learning framework; to deepen and extend our understanding of the use of e-learning for supporting on the job soft-skills development; and to provide a solid platform for future blended learning research in the workplace. Much has been achieved in this project that

helps to advance the understanding of different blended learning strategies and their impacts in terms of workplace learning. As with most research, however, answering questions often leads to even more questions. Such has been the case in this project. That a single best blended learning model could not be clearly delineated suggests other possibilities need to be explored. Based on the complexity of individual factors involved the idea of being able to slot people into a pre-designed blended learning program in a top-down manner seems problematic. Instead, this report recommends a "mass customization" approach be considered providing a personal learning path for each and every employee. This approach has generally been viewed as impossible in the past because of the seemingly infinite nature of possibilities. It is, however, now a possibility that eminently doable, considering the vast possibilities for supporting individual and collective learning in today's web-world. It is our hope that this research report brings new light and a sense of urgency to this important mandate to find new, effective ways to maximize the job impact and performance outcomes of personal learning in our workplaces.

INTRODUCTION AND RATIONALE

As Canadian businesses look for new ways to empower workplace learning to meet demands to do more with less resources to advance employee development and performance improvement, interest in delivering programs combining different instructional approaches (e.g., face-to-face, problem-based learning, coaching) with the use of different web-technologies (e.g. discussion boards, e-content, conference class) – generally referred to as blended learning – is growing because of the opportunities these blended learning strategies provide for just-in-time (i.e., immediate) access to learning tools and supports anywhere, anytime. Much of the existing research has compared classroom versus online courses versus blended learning approaches. The job impact of different blended learning strategies, an area that has been largely under-researched, was the focus of this research study. In this report, the differential impact of four distinct blended learning strategies on personal soft-skills development and job performance will be presented. The theoretical model guiding the work is the result of a four year action learning research study emerging from work reported by Adams (2004). Each level in the model, defined by a different blended learning strategy, moves from a very loose coupling of personal learning with job performance in level 1 (e.g., online learning used as a background resource for self-directed learning), to tighter and tighter couplings of learning with job performance in level 2 (e.g., online materials integrated with a structured classroom course and required as pre-and post work) and level 3 where online learning materials were integrated with personal learning objectives and blended with collaborative discussion forums and peer coaching. Level 4, defined in this model as a *very tight* coupling of personal learning with job performance in relation to the previous three blended learning strategies mentioned involved using online learning materials to support personal job-based projects where participants worked on the projects as part of their learning (i.e., an action-learning pedagogical approach) where a demonstrable return on learning (ROL) was measured. This research project, which involved York University's Schulich School of Business, the Institute for Research on Learning Technologies (IRLT), and Scotiabank, targeted the Canadian Council on Learning (CCL) adult learning "outcomes" theme. More

specifically, this research report documents the findings of a study where two hundred research participants working in managerial positions across Scotiabank were assigned to one of four parallel courses of study, each of which was delivered using a different blended learning strategy. Feedback was gathered before, after, and throughout the research project period (April 7 to June 10, 2008) using questionnaires, surveys, brief interviews, and online forums. Information collected for analysis included demographic and workplace variables, soft-skills and learning styles assessments, confidential self-reports on what was learned (i.e., impacts of actions taken in personal job situations), and barriers and motivators for learning (e.g., perspectives on belonging to learning communities).

The rationale for this study was threefold: 1) to observe, monitor, test, review and validate the four-level framework in a large, leading-edge Canadian organization; 2) to deepen and extend our understanding of the use of web-based learning for supporting soft-skills development aimed at maximizing impact on job performance; and 3) to provide a solid platform for future blended learning research in the workplace.

Research Context

The research context, Scotiabank, is one of North America's premier financial institutions, and Canada's most international bank. With an employee base of 69,000 employees, Scotiabank and its affiliates offer a broad range of products and services, including retail, commercial, corporate, and investment banking to more than 12.5 million customers in some fifty countries around the world. Being a global employer of choice enables Scotiabank to attract and retain high-performing employees, and positions the bank as a place where talented people not only want to work, but also have the opportunity to thrive in their careers. In 2008, the Bank invested $84.2 million in global employee learning and development. Scotiabank encourages employee learning and development through a blend of classroom learning, e-learning, coaching, job shadowing, and mini-training sessions in the branch, and continually looks for ways to leverage learning technology. While classroom programs are available through larger centres, Scotiabank continues to increase the use of interactive virtual classroom technology, iShare, making training more accessible in all locations. Scotiabank is recognized as a top employer by a number of independent surveys and publications in many of the markets where the company

operates. The Bank was named among the 50 Best Employers in Canada for the fourth straight year by Report on Business magazine, and a top employer in Mexico for the fifth consecutive year by the Great Place to Work Institute. The institute also recognized Scotiabank among the best places to work in Central America and the Caribbean. Scotiabank was recognized as a leading training company as well as the top Canadian Bank in Training magazine's 2008 Training Top 125, the sixth consecutive year the Bank has appeared on the list. Scotiabank's focus on continuous learning and acknowledged expertise in employee development made this an ideal context for our research study.

LITERATURE REVIEW

Most people will agree that the Internet has changed the way we work, socialize, and learn. The majority of Canadian universities have some web-based component to many courses and this is expanding (McGreal & Anderson, 2007). The potential for e-learning to revolutionize workplace learning is also generally accepted in principle; however, in practice it has not yet reached its full potential (Tynjala & Hakkinen, 2005, p. 319). This disparity between potential and realized e-learning hinges on the following two major factors. Firstly, there is a distinction between "first generation" and "second generation" e-learning systems where first generation systems have a linear, instructor-controlled underlying design logic that tends to be effective for supporting hard-skills development (e.g., learning to use a software package, adding a column of numbers). Second generation e-learning systems, on the other hand, are designed to support soft-skills development (e.g., learning to coach others, be an effective team member or team leader) that put learners in control of their learning by embracing flexible, self-organizing design principles (Adams & Morgan, 2007; Morgan & Adams, 2009). It is likely that many organizations think of conventional first generation models when they think of e-learning. A second factor in the disparity between potential and realized e-learning is that many models have not tapped into the profound effect that a tight integration of work and learning (e.g., learning to be a coach while involved in a real coaching assignment, rather than learning to coach in a classroom context in a theoretical manner) can have when implementing e-learning for leadership and management soft-skills development to maximize personal learning and job impact (Adams, 2004; Adams, 2008). These findings of the two disparities emerged as a "second generation" e-learning system (the *NewMindsets* project) was developed from the bottom up as part of a research project led by Dr. Gareth Morgan, Distinguished Research Professor (York University), where content was written, web-enabled, and integrated into a fully operational content management system, and pilot-tested in academic and workplace contexts using various instructional blended learning approaches. Over a six-year period (1999 to 2004) of testing the content system in parallel and varying contexts, a four-level model for integrating e-learning

with work practice emerged (see Table 1). Each of the four implementation strategies had different levels of impact on job performance (i.e., the tighter the direct links between online learning and work practice, the greater the job impact). These findings were primarily subjective and self-reported by learners. As well, the outcomes for the most part were observed in different organizations at different times. This current project builds on this research in two ways. First, where different organizations at different times were used in the pilot study, the current project was able to access one organization over one learning time period and therefore enable meaningful comparisons between the different blended learning strategies in the same context. Second, while the four strategies that emerged from Dr. Morgan's research were again borne of different results from different participants at different times, this study is unique as it is the first to conduct a study comparing four models of e-learning against each other at the same time by the same population of participants providing an opportunity for rigourous evaluation of the learning impact/outcomes of the different strategies in a common context (i.e., Scotiabank).

Four distinct models of e-learning strategies were developed that increase progressively in terms of colleague interaction, tie-in to work, and project-focused deliverables. The blended learning models include: self-directed e-learning; a blend of class and e-learning; a blend of coaching and e-learning; and a blend of action-learning projects and e-learning (Adams, 2004). A summary of the four strategies is presented in Table 1.

Table 1 Blended Learning: A Four-Level Model for Integrating Work and Online Learning

Blended Learning Model	Details for Integrating Work and Online Learning
Level 1: e-Learning as a Background Resource (i.e., self-directed e-learning)	Online learning resources are made available as voluntary background material for supporting job performance and personal development where learning objectives are very general in nature (e.g. understand the basics of coaching) and used as: • a supplementary resource (e.g., e-libraries, e-books, e-catalogues), • a stand-alone feature (e.g., self-directed courses), • an add-on combined with other primary modes of instruction (e.g., face to face classroom/workshop sessions/ online classrooms/virtual teams).
Level 2: e-Learning as Part of a Balanced (Blended) Mode of Instruction (i.e., a blend of class and e-learning)	Online materials are integrated with classroom instruction where learning objectives tend to be general (e.g., learn how to be a coach) rather than very specific as in level 3 and used as: • required pre-work assignments, • referenced/featured in classroom discussions (e.g. using screen shots to make concrete links and motivate and guide learner use), • required post-work assignments.
Level 3: e-Learning Tightly Coupled with Personal Learning Objectives (i.e. a blend of coaching and e-learning)	Online materials are tightly coupled with highly specific personal learning objectives (e.g., coaching Martha to improve sales this month) and used as: • core content support for competency development plans, • focus for job coaching, advisory or remedial performance support, • collaborative focus for team mentoring programs.
Level 4: e-Learning Tightly Coupled with Action Projects (i.e., a blend of action-learning projects and e-learning)	Online materials support action projects (e.g., projects where employees learn as they go) that have been mandated or acknowledged as important by the organization or a specific manager to deliver demonstrable value through individual or team project applications, and that provide the key focus for learning. Online materials are used to: • drive a practical "ROL" (return on learning) approach into practice as a key strategic imperative, • provide just-in-time support for action projects where learning is directly geared to creating positive outcomes - through demonstrable project results and improved personal/team development and work performance as the primary objective, rather than as an ancillary or supplementary spin off.

Note. Based on: Adams, J. (2004). *"Second generation" e-learning: An action-based exploration of design and implementation.* Unpublished doctoral dissertation, York University, Toronto.

Definition of Blended Learning

Since research in blended learning is still in its infancy, it is not surprising to find that there is not a uniform definition that all researchers have adopted (Graham, 2006; Procter, 2003). With the continuing advancement of digital technology, blended learning continues to develop along new dimensions merging the best features of conventional face-to-face instruction and online learning (Graham, 2006), making it even more difficult to agree on a single definitive statement. Thorne (2003) defined blended learning as "a way of meeting the challenges of tailoring learning and development to the needs of individuals by integrating the innovative and technological advances offered by online learning with the interaction and participation offered in the best traditional learning" (p. 184). Another commonly used definition of blended learning is a combination of face-to-face instruction combined with computer-mediated instruction to facilitate interactive and reflective higher-order learning (Graham, 2006).

Blended learning is generally agreed to involve a mixture of instructional modalities, delivery media, instructional methods, and web-based technologies (Graham, 2006). Blends of instructional modalities usually entail a balanced mixture of onsite, web-based, and self-paced learning (Martyn, 2003; Picciano, 2006). To make blended learning more powerful, educators can blend various media delivery types, for instance, classroom training, seminars, web-based courses, CD-ROMs, video, computer simulations, books, study guides, the Internet, PowerPoint slides, etc. (Bersin, 2003). In most cases, blended learning is designed with the use of synchronous (e.g., teleconference calls) and asynchronous (e.g., discussion boards) web-based technologies, such as chat rooms, wikis, threaded discussions, virtual classrooms, instant messaging, conferencing tools, bulletin boards, computer conferencing, blogs, etc (Graham, 2006). Some researchers believe that incorporation of new pedagogies, learning theories, and instructional methods transform conceptual models of teaching and learning in blended learning environments (Carman, 2005) by changing the role of learners and instructors. The choice of a blend is usually determined by several factors: the nature of the course content and

instructional goals, student characteristics and learning preferences, instructor experience and teaching style, online resources and others (Dziuban, Hartman, Moskal, 2005).

A model developed by Bonk and Graham (2005) overviews three levels of blended learning as: combining the delivery media; combining the instructional methods (e.g., case study, short lecture); and combining on-line and face-to-face instruction. Levels One and Two are broad and generally already practiced in most instances by using multiple delivery media and methods of instruction. Combining on-line and face-to-face instruction (Level Three) emphasizes the importance of computer-based technological advancement and use. It incorporates the need for Level One and Two as well, offering a variety of media and methods both face-to-face and on-line in order to meet the needs of different learners. As technology advances with on-line communities, video conferences and virtual spaces, on-line learning is becoming more instant, real-time and rich in interaction and sensory input. Bonk and Graham (2005) also identify three categories of blended learning systems: enabling (access and convenience), enhancing (using technology to add value), and transforming (change to course design, learn through interactions and activities). Simpson (2008) notes four key factors of blended learning are collaboration, interaction, personalization and media-richness. These are seen as necessary to engage students and create valuable learning experiences.

For the purposes of the current study, blended learning can be viewed as *a combination of various instructional modalities combined with synchronous and/or asynchronous web-technologies to facilitate interactive and reflective individual and collective learning.* The blend may include face-to-face interaction as well as live tele- and/or video-conference interpersonal communication. This definition is purposely broad to offer maximum flexibility for innovating and developing the full potential of the blended learning concept.

In summary, it needs to be stressed that blended learning is not just a mixture of strategies and technologies, but a holistic didactical method that combines "the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment, rather than ratio of delivery modalities" (Dziuban, Hartman, Moskal, 2004).

Blended Learning Educational Design Principles

Four main principles of educational design for blended learning are identified in the literature: (a) thoughtful integration of face-to-face and fully online instructional components; (b) innovative use of technology; (c) re-conceptualization of the learning paradigm; and (d) sustained assessment and evaluation of blended learning. The first principle is intended to maximize the advantages of both environments and better address diverse students' needs and preferences (Carman, 2005; Martyn, 2003). The innovative use of technology means that any technology should be applied in a pedagogically appropriate way and used for creating and maintaining socially situated and highly interactive learning (Vaughan, 2007). A re-conceptualization of the learning paradigm entails the incorporation of new pedagogies and learning theories (e.g., student-centered, social constructivism), the development of new understanding and knowledge through social interactions with a community of peers, and new roles of learners (e.g., active author of content, self-paced learner) and teachers (e.g., mentors, coaches) (Dziuban, Hartman, & Moskal, 2004). The fourth principle of sustained assessment and evaluation of blended learning solutions is aimed at ensuring the quality of education (Graham, 2006).

Benefits of Blended Learning

The landscape of employee training and development is a rapidly evolving field. Recent approaches incorporate technology and remote accessibility along with traditional classroom instruction. This evolution has at least two advantages – cost effectiveness and learner value. This blended learning approach is a strategy that has the potential to garner success in terms of learner value and return on training investment. Nagura and Arakawa (2003) found that when the topics included in training matched the needs of the learners and participants who were engaged, they were more likely to report that they had met their goals. Most learners had a positive view of blended learning, feeling that in-class time was more effective with the prior knowledge gained from electronic resources as part of the blended strategy used. More support was found for blended learning during an in-depth evaluation of IBM's blended training model for managers called Basic Blue, a process of manager training for leadership and people skills. The

training program as a whole was evaluated based on its effect on leadership, effectiveness of e-learning, business results, and cost avoidance using Kirkpatrick's (1979, 1998) four levels of training evaluation model (i.e., reaction, learning, behavior, results). Surveys, interviews, self-assessments, alumni behaviour assessments, productivity, team morale, and return on investment (ROI) data found some key results. These results include "unequivocal enthusiasm for implementation of both the on-line and classroom components of the program" (Bonk & Graham, 2005, p. 68). Further, 96 percent of 6600 participants to date achieved mastery in all subject areas, while five times the content was being covered compared to the previous classroom program. Behaviour change was found in managers in terms of self-efficacy, leadership, and initiating systemic change. In terms of return on training investment, an estimate delivery was found of 17:1 between blended and classroom instruction (i.e., blended was 17 times more effective than classroom alone), and managers estimated department improvement change to the tune of an average $415,000 (ROI = 47:1) meaning a benefit of $47 was gained for a cost of $1. Blended learning has been compared to an online only approach by Dziuban, Hartman, and Moskal (2004) at the University of Central Florida. This study found that blended learning garnered higher levels of student and faculty satisfaction, lower attrition, and higher student learning as compared to online only courses.

From the literature, it seems clear that blended learning is an approach that satisfies the needs of students and faculty, as well as logistical and budgetary concerns. Other potential benefits of blended learning include pedagogical richness (i.e., shifting from a presentational format to active learning); greater access to personalized learning, resources, and experts; greater flexibility and personal agency; greater accommodation for learners and teachers of diverse backgrounds; increased interaction and sense of community; and increased cost-effectiveness (e.g., reduced seat time, decreased costs) (Albrecht, 2006; Dziuban, Hartman, & Moskal, 2004; Moore, 2004; Owston, Wideman, & Murphy, 2008; Picciano, 2006; Vaughan, 2007). However, many organizations face challenges in transforming their instruction into a blended learning format. For example, four main barriers to implementation of blended learning options include: administrative challenges (e.g., lack of awareness, policies, plans, goals, support related to

blended learning), re-designing courses and/or programs, faculty preparedness, and quality assurance (Cook, Owston, & Garrison, 2004; Dziuban, Hartman, & Moskal, 2004).

Learning Styles and Blended Learning

Another issue that is of interest when implementing blended learning is how successful the approach will be across varying individual characteristics or differences, such as learning styles. In one study, Akkoyunlu and Soylu (2008) investigated differences between two learning styles, divergers and assimilators, that emerged during their study. According to this study, assimilators (e.g., who focus on logic, ideas and concepts; are good at systematic planning; prefer to work alone; and prefer to learn by thinking and watching) reported significantly more positive views on blended learning and participated more than divergers (e.g., who focus on concrete applications; are highly imaginative; like to work with others) in the online forum. While views on blended learning differed, the two groups showed no significant difference in actual achievement in the blended learning course. In terms of auditory (e.g., favouring listening), visual (e.g., favouring images and text) and kinesthetic (e.g., favouring application) model for learning styles, there is little information on the possible interconnection between learning styles and blended learning approaches.

Barriers and Motivators for Blended Learning

A large amount of literature has examined students' perceptions, concerns and motivation for the use of technology employed in online learning programs, as well as their attitudes towards the use of differing web-based learning activities combined with face-to-face interaction (Dobbs, 2005; Liu, Theodore, & Lavelle, 2004; Lupshenyuk, Hocutt, & Gibbs, 2007). While the impact of challenges and benefits of e-learning on students in the postsecondary context is well established (Berge, 1998; Panda & Mishra, 2007), there are relatively few studies on workplace learners' perceived barriers and possible motivators for blended learning in a corporate setting (Vaughan & MacVicar, 2004).

Several studies related to student perceptions towards e-learning identified most predominant barriers to e-learning as: technical barriers (e.g., Internet access, use of technology,

setup problems, inadequate technical support), organizational barriers (e.g., insufficient feedback, ill-designed activities), social barriers (e.g., feeling of being isolated, lack of interaction with others), lack of prerequisite skills (e.g., research and information processing skills), and time management barriers (Berge, 1998; Fung, 2004; Muilenberg & Berge, 2005). A few studies identified the two most important motivators for e-learning – content relevance to work and the utilization of easy-to-use technologies (Vaughan & MacVicar, 2004).

Conclusion

The term blended learning is being defined in this report as a combination of various instructional modalities combined with synchronous and/or asynchronous web-technologies to facilitate interactive and reflective individual and collective learning. This definition is purposely broad to offer maximum flexibility for innovating and developing the full potential of the blended learning concept.

As is the case in any new and emerging field of research, there are a number of interesting opportunities for exploration. For this blended learning research project, the design enabled the comparison of different strategies and the determination of which strategy yielded optimal results or change in organizational and interpersonal performance. Specifically, the study compared the effects of different blended strategies on the development of soft-skills and job performance as a measure of return on learning (ROL). As well, the research project investigated the relationships of learning styles to the different blended learning approaches in workplace contexts. Further, it offered a way to develop a deeper understanding of barriers and motivators for learning by determining whether those identified by participants varied with blended learning strategies and/or learning styles. That is, barriers and motivators for workplace learning and learning styles were explored in light of research group assignment as well as in relationship to each other.

METHODOLOGY

The research was a multi-method, two time-point, repeated measures (e.g., surveys repeated pre- and posttest) quasi-experimental design that investigated differences in learning outcomes where participants were assigned to four unique blended learning groups. Each research group participated in a course of study that was offered at the same time, employing different blended learning strategies. Further, the research examined the effect of group on changes in soft-skills. Quasi-experimental methodology (e.g., all participants were randomly assigned to different research groups except for those who had registered for a classroom course during the research study and therefore were assigned to group 2) was employed to determine if learning styles interacted with group allocation to affect learning outcomes or changes in skills. Demographic and other descriptive information, such as Scotiabank business line (e.g. wealth management, human resources, etc.), was assessed where appropriate, and follow-up qualitative measures were examined in light of research group allocation.

The four-level blended learning theoretical model (presented in Table 1) was used as the framework for the four different blended learning strategies where Research Group 1 equated to Level 1 learning design (i.e. e-learning used as a background resource), and so on. As well, the four-level framework was used as the platform for testing the following three hypotheses / propositions:

- Hypothesis / Proposition #1: The tighter and more well-defined the links between learning and the job (i.e. moving from blended learning strategy level 1 to 4), the more likely participants are to report demonstrable impacts/positive outcomes on job performance. Specifically, we expected that the benefit-cost ratio and measures of soft-skills performance would get progressively higher moving from Research Group 1 through to Research Group 4.

- Hypothesis / Proposition #2: The tighter and more well-defined the links between learning and the job (i.e. moving from blended learning strategy level 1 to 4), the more likely participants are to report learning motivators rather than barriers to

learning. We expected to find that learning tightly linked to the job as action-projects (Level 4) would create a highly motivational context for learning.

- Hypothesis / Proposition #3: The closer the match between individual learning styles and the blended strategy employed, the more likely participants are to report positive learning outcomes and impact on personal skill development. For example, we expected that those favouring an auditory learning style would have a better experience in Research Group 2 where a face-to-face classroom-based component was included. Similarly it was expected that those favouring a kinesthetic learning style would perform better in Research Group 4 that included a project-based component.

An overarching action-learning research methodology (Morgan, 1997; Morgan and Ramirez, 1984; Morgan and Smircich, 1980; Pedler, 1983; Revans, 1982) was also used to embed a continuous learning philosophy throughout the study. Action learning is closely related to "action research" methodology (Argyris and Schon, 1978; Eden and Huxham, 1996; Lewin, 1947; Susman and Evered, 1978; Whyte, 1991), which is generally accepted to involve planning, acting, observing, and reflecting (Kurt Lewin's model) in a "continuous and iterative process" involving "research and development, intellectual inquiry and practical improvement, reflection and action" (Altrichter, Kemmis, McTaggart, Zuber-Skerritt, 2002, p. 131). Action-learning research methodology involves getting inside the situation being studied; adopting the role of a learner; identifying key themes and interpretations; and confirming, refuting and reformulating the findings throughout (Morgan, 1997). One of the key aspects of the way this methodology was used in this research was the ability to challenge the findings as they emerged and explore the surprises/exceptions to gain as many different perspectives about blended learning as possible. This embedded the essence of Karl Popper's (1958) refutational approach to scientific method and critical thinking into this study, emphasizing the importance of continuous discovery and improvement by always challenging the findings as they emerged to gain a deeper understanding. For example, when we discovered that barriers and motivators for learning seemed different in our project than those found in the literature, we were able to explore this further by implementing a similar survey in an educational context *during* the project to see if it

14

was a workplace context-specific finding. Action-learning research is particularly useful in research involving academics and practicing managers, as was the case here, because it has the potential to yield both new practical and theoretical knowledge benefiting everyone involved.

In summary, not only was the four-level blended learning model tested, it was also iterated to provide additional research value in moving from a theoretical framework to a working blended learning model in a live workplace context.

Participants

Recruitment

The research study was widely supported by securing agreement and support from the heads of training, Human Resources (HR) vice-presidents and sponsorship from the Executive Vice President HR at Scotiabank. Coaches, mentors, and instructors were also invited to provide their ideas and feedback on the topic selection and research parameters. An email about the research study was sent by senior executives of the Bank (see Appendix B) to seven hundred and ninety-two employees who were either scheduled for a Scotiabank management development course during the period of the research study or who had completed such a course during the previous twelve months. A follow-up email was sent by the Principal Researcher, independent of Scotiabank, to the subset of two hundred and ten people who agreed to participate in the research, welcoming them to the study. They were also asked to complete online surveys on learning styles (Appendix D), barriers and motivators for learning (Appendix E), and the Scotiabank soft-skills survey (proprietary information highly specific to the organization and therefore not reproduced here). It is important to note that no one at Scotiabank knew the names of those who had agreed to participate in the research. Confidentiality was maintained throughout the research to protect the ethical integrity of the work (see Appendix A).

Participant Characteristics

The largest number (32%) of participants were located in Ontario, 28% were from Alberta, 21% from British Columbia, 12% were International, and about 5% were from Eastern Canada, the United States, Saskatchewan, and Quebec. The majority (91%) of participants had been with Scotiabank for more than five years, 4% at Scotiabank for three to five years, and 4%

between one and three years. Most participants' business line (62%) dealt with Domestic Banking, about 10% of participants were in International Banking, and about 9% were in Shared Services. The remainder of business lines had fewer than 5% representation in this study, ranging from 4% in Wealth Management to 1% in Global Risk Management. All participants were in mid-level management positions (i.e., Scotiabank job levels six to eight from a range of 1-10). Most of the participants (58%) were level seven or eight, while less than 10% were level nine, and less than 10% were below level six. All participants completed a learning style survey indicating that most people were either auditory learners (37%) or kinesthetic learners (35%), while 15% were visual learners and 13% had multiple learning styles. Based on participants having previous online learning experience prior to the present research project, participants did not identify any major barriers to learning. They scored "relevant content" and "good fit with personal learning style" as the top two major motivators (see Appendix G for more details). Demographic data gathered at the end of the research project for those who responded to the final survey indicated 1.5 percent of participants were Generation Y (under 30 years); 56 percent were Generation X (30 to 45 years); and 43.5 percent were Baby Boomers (over 45 years).

Assignment of Participants to Research Groups

Two hundred employees completed the required pretest surveys and were assigned to one of the four research groups where the same online materials were offered using four different blended learning strategies. Forty-eight respondents who were pre-registered in one of several Scotiabank classroom-based management development courses during the period of the research study were assigned to Research Group 2, which was specifically designed with an in-class element (Level 2 in the four-level model being tested) making it possible to integrate the this research project with an existing Scotiabank training program (i.e. rather than having build and execute a classroom course from scratch). The remainder of the participants were randomly assigned to Research Groups 1, 3, and 4. Fewer participants were assigned to Research Group 1 (Level 1 in the four-level model) because it served somewhat as a control group and previous research had established that the other three designs were more likely to have greater impacts on job performance. The research team agreed that these issues of sample size imbalance were thus overridden by ethical considerations (i.e., the desire to balance the ability to produce meaningful

research results by having a large enough number of participants assigned to Research Group 1 to legitimize the findings at the end of the study versus the dilemma of knowing that the return to Scotiabank employees would most likely be low or non-existent in this group based on prior research findings. Reducing the number of participants assigned Research Group 1 was the only way the researchers could find to resolve this dilemma of putting people in a less than advantageous learning context without jeopardizing the integrity of the study. At the end of the study we found this was actually not the case. Participants in Research Group 1 actually did create value for themselves and Scotiabank, so with hindsight we could have increased the size of this group) Randomly, thirty two participants were assigned to Research Group 1 (where e-learning was primarily a background resource), forty eight participants were assigned to Research Group 2 (where e-learning was used to support an existing classroom-based course offered by Scotiabank during the research period), sixty participants were assigned to Research Group 3 (where e-learning was tightly linked to personal development supported with collaboration), and sixty participants were randomly assigned to Research Group 4 (where e-learning was tightly coupled with personal projects).

Participants were asked to spend twenty minutes per week on the research project learning content, responding to surveys, and/or participating in collaborative learning activities, a total of two hours over the six-week project period. Classroom course was over and above the twenty minutes per week. Those who completed the end results survey self-reported the total time spent as: 34% of participants spent less than one hour; 44% spent between one and three hours; 15% between three and six hours; 1.5% spent between six and ten hours; and the remaining 5.5% spent more than ten hours in total.

<div align="center">Measures</div>

Demographic Information

In the demographic survey (see Appendix C) administered within one to three weeks before the study started, participants reported their business line, number of years at Scotiabank, location, business level (i.e., management, executive, etc) and, if applicable, the Scotiabank course they would be taking during the research period.

Scotiabank Soft-Skills

At pre- and posttest time points, participants completed a skills inventory survey designed by Scotiabank and rated on a six-point measure with response options ranging from 6 (*always*) to 0 (*never*) and including a "no opportunity" option. Indicators included measures related to *coaching* (i.e., When I speak with someone who has made a mistake, I make sure they know that I'm criticizing an action, not them personally), *communication* (i.e., I adapt my presentation or discussion to suit and appeal to the Research Group I am addressing), *team leadership* (i.e., I plan meetings thoroughly, considering my objectives and the requirements of each participant), *flexibility* (i.e., I support changes that mean better ways of thinking or doing things), *customer focus* (i.e., I respond promptly to the needs of customers), and *relationship building* (i.e., I am friendly and co-operative with people), among other soft-skill constructs including *empathy, influence, and relationship building*.

Learning Styles/Preferences

Participants completed a learning style/preference survey (see Appendix D) recommended by Scotiabank that determined whether respondents were more likely to be visual, auditory, or kinesthetic learners. Response options ranged from 1 (*strongly disagree*) to 5 (*strongly agree*) and included such questions as "I prefer to see information written on a chalkboard and supplemented by visual aids and assigned readings," "I can tell if sounds match when presented with pairs of sounds," and "I enjoy working with my hands or making things." Mean scores were computed and the learning style with the highest mean score was denoted for each participant as their predominant learning style. Many respondents revealed a "tie" mean score and thus a fourth category – "multiple style" – was assigned to those respondents. Split-half procedure was employed with the learning style/preference survey and thus half was administered at pretest, half – at posttest.

Barriers and Motivators

At pre- and posttest time points, participants completed Barriers and Motivators for Learning online questionnaire that had been developed by the research team (see Appendix E). It included dimensions that were identified in a literature review as well as other dimensions that members of the research team had discovered in independent research (Adams, 2004).

Participants were asked to rate specific barriers and motivators for learning on a three-point scale (i.e. no barrier/no motivator; minor barrier/minor motivator; major barrier/major motivator) and invited to add more details in open-ended questions if they wished. A short questionnaire was also administered at the mid-point asking participants in each of the four separate research groups about the motivating aspects, problems or issues making it difficult to learn, and recommendations for improvement.

Follow-up measures

At the end of the project, participants completed End Results and Feedback survey (see Appendix F) that indicated "return on learning" measures (i.e., benefit-cost analysis), personal feedback on various aspects of the project (i.e., ideal learning model), information regarding a follow-up project (i.e., whether or not they would like to be involved), and other basic "next steps" information about ways to create even tighter links between work and learning (i.e., financial rewards for learning outcomes, use of learning contracts, performance mandate from immediate manager or upper executive team). Benefit-cost analysis referred to as "return on learning" (ROL) was the focal question in this survey as participants came with personal situations (i.e., a workplace problem being faced or specific project being undertaken) in mind. This situation, along with the skill assessment results, provided the focus for self-directed study. It also provided the base-point for reporting specific gains made at the end of the program. Participants were encouraged to quantify the subjective and objective gains made related to the learning program to the degree possible at the end of the program. Costs and benefits attributed to the program were used as the basis for determining ROL and cost-benefit ratios as a point of comparison for the four blended learning strategies being tested.

Data Analysis Procedures

Data were gathered using the York University online survey software which caches data in Microsoft Excel format. Each survey was merged by participant codename and the final dataset was analyzed using either the Statistical Package for Social Sciences 16.0 (SPSS) or MPlus V5 (Muthén & Muthén, 2007). Frequency and descriptive data were collected to describe demographics of participants. To determine change over time, multivariate or univariate analysis

of covariance, using the pretest score as a covariate was generally employed, using SPSS. To determine whether Scotiabank soft-skill measured latent variables were well indicated by their associated variables, MPlus was employed to conduct confirmatory factor analyses. Correlations and *F*-tests were used where appropriate to determine relationships and differences between groups, respectively. Each analysis used in this project will be further explained in the Research Findings section of this report with a brief description of the procedure(s) used to determine the results being reported.

TECHNOLOGY

A lot of attention was given to the selection of technologies used to support the blended learning strategies in this research project. Our original preference for using technologies familiar to Scotiabank employees proved to be a challenge for two reasons. Firstly, the diverse nature of the participant sample meant that employees in different corporate departments used different technologies. Secondly, our guarantee for participant confidentiality limited our ability to use many of the internal Scotiabank technology resources that resided on corporate databases since they were monitored by the bank. As a result, the research team agreed to support the blended learning project using a variety of technologies that were maintained and monitored independently of Scotiabank.

Although the research team had some initial concerns about introducing so many new technologies in such a confined period without doing any formal training, there were very few problems. This speaks highly of the willingness of Scotiabank participants to adapt to new situations, as well as the user-friendly quality of the technology interfaces we selected. As a result, all of the technology resources selected were seamlessly integrated in the blended learning project with minimal technological disruptions and issues identified (i.e., other than a few requests to reset passwords), as will be further discussed in the Research Findings section of this report.

Content Resources

NewMindsets™ *"Second Generation" e-Learning Content*

As mentioned in the Literature Review section, the use of web-based content designed to put learners firmly in control of their own learning is ideal for soft-skills development. The other benefit of using this type of e-learning system is that it can support short spurts of learning. That became a critical factor in this research project because daily work commitments were the priority and the research project needed to be fit in around heavy managerial workloads. Consequently, the 20-minute rule was adopted where participants were asked to simply find

twenty minutes per week over a 6 week period to devote to the research project (i.e., two hours in total). This included both the online learning and online collaboration aspects, as well as completing survey feedback. NewMindsets™ online content has been designed as a just-in-time performance support; therefore it was ideal for supporting this research project.

The NewMindsets™ team graciously created a research website for the exclusive use of Scotiabank employees – the use of which was extended until the end of 2008 at participant request. Figure 1 is a screen grab of the home page giving learners the option to study one of three recommended topics: Coaching, Crucial Conversations, and Transition to People Management. Each of these topics offered a selection of six or seven e-learning resources that could be studied in any order the learner so wished. The online resources included management theories, examples from various contexts illustrating the concepts in practice, scenarios for practice and encouraging reflective practice, exercises and worksheets with tips and advice for practical use. See Figure 2 for the guidelines and recommended learning resources selected for the Coaching module. Also see Table 2 for the titles of the recommended learning resources for the Crucial Conversation, and the Transition to People Management modules.

This NewMindsets™ content base was used by all of the research participants. System usage reports indicated that 153 research participants logged on the NewMindsets™ site a total of 514 times for about of 35 to 40 minutes of online use per logon cumulating in a total of 2.5 hours of online learning per participant during the research period. Comparison of usage between groups will be provided in the Research Findings section.
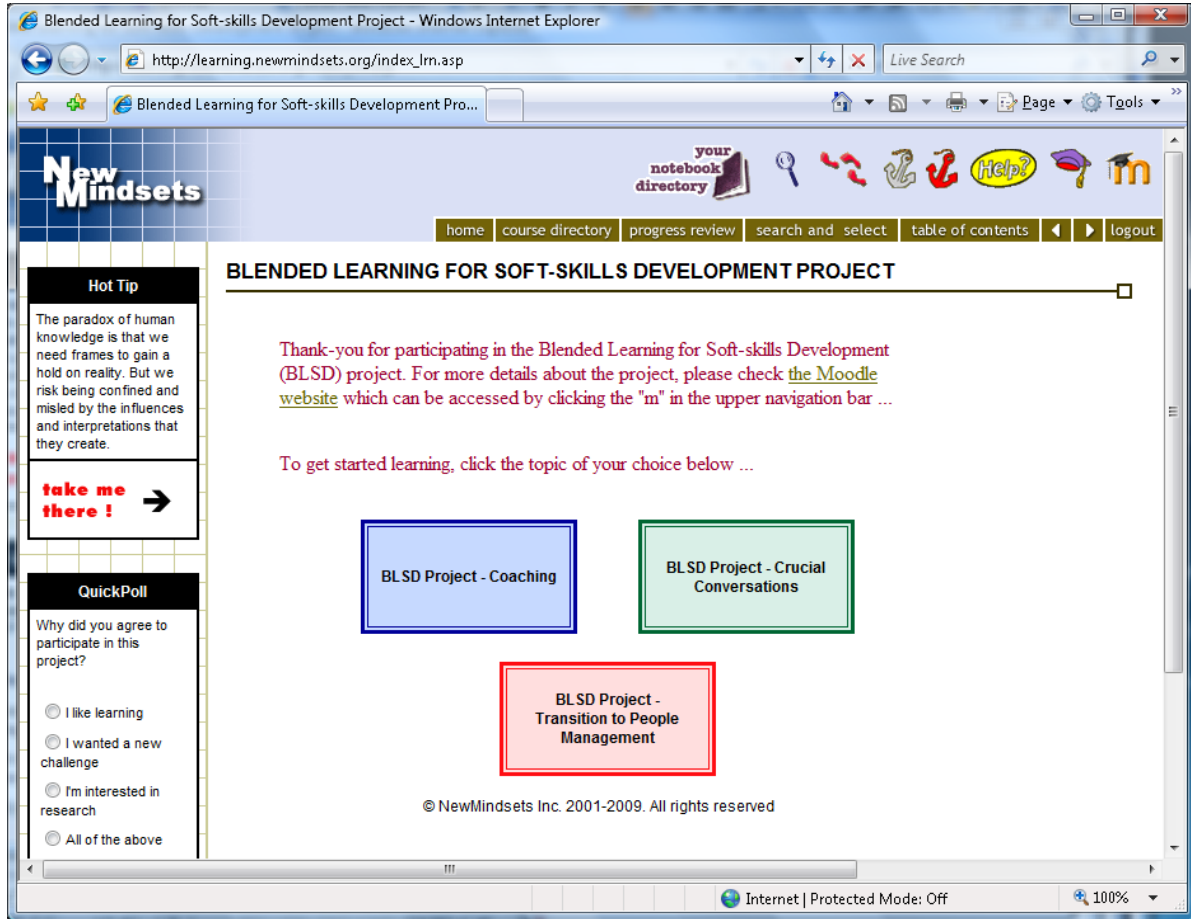
Figure 1. NewMindsets™ Home Page.

Scotiabank Classroom Courses

Since Level 2 of the four-level model being tested in this research included a classroom course, the researchers worked closely with Scotiabank to select course topics that were being offered during the research period. Those selected were: Coaching, Crucial Conversations and Transition to People Management. Classroom course included short lectures, role play, exercises and short cases. The NewMindsets™ online component of the project, as discussed above, was configured to support the relevant Scotiabank topics of study.
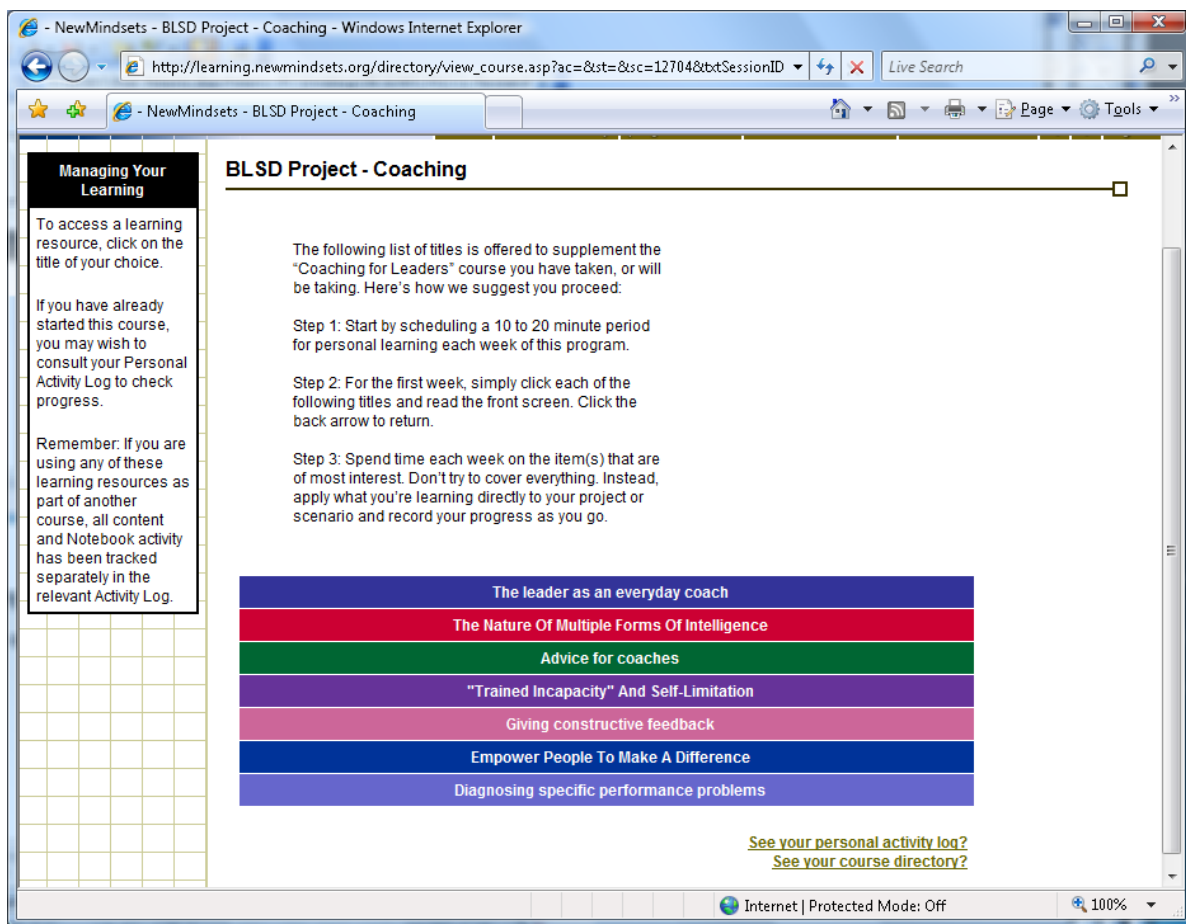
Figure 2. NewMindsets™ Resources for the Coaching Module.

Communication Technology

A communication strategy was designed to make contact between the research participants and the research team as easy as possible. For general information about the administrative aspects of the research involving all and/or some of the participants, various email lists were used. A return email and phone contact information for the principal researcher was always included. To provide anonymity and protect confidentiality, participant email addresses

were entered in the BCC (Blind Carbon Copy) field. As well, those interested could contact York University's Institute for Research on Learning Technologies (IRLT) by phone or email throughout the research period. A public research site (see Figure 3) was also hosted by IRLT where regular updates on the project were posted.

Figure 3. Home Page of the Public Research Site Hosted by IRLT, York University.

Retrieved May 05, 2009, from http://irlt.yorku.ca/blended/index.php

Research participants were directed to the public research site at the end of each of the online surveys through a direct link. This was an ideal way to share regular updates with those interested. There were on average about 12,000 visits to the site each month during the research project, this an increase of about 30% in comparison to the activity on this site prior to the

25

blended learning research project.

For details about the specific learning activities involved in each of the four blended learning course offerings, Moodle (i.e., an open-source learning management system) was provided and supported by York University for the research period (see Figure 4).
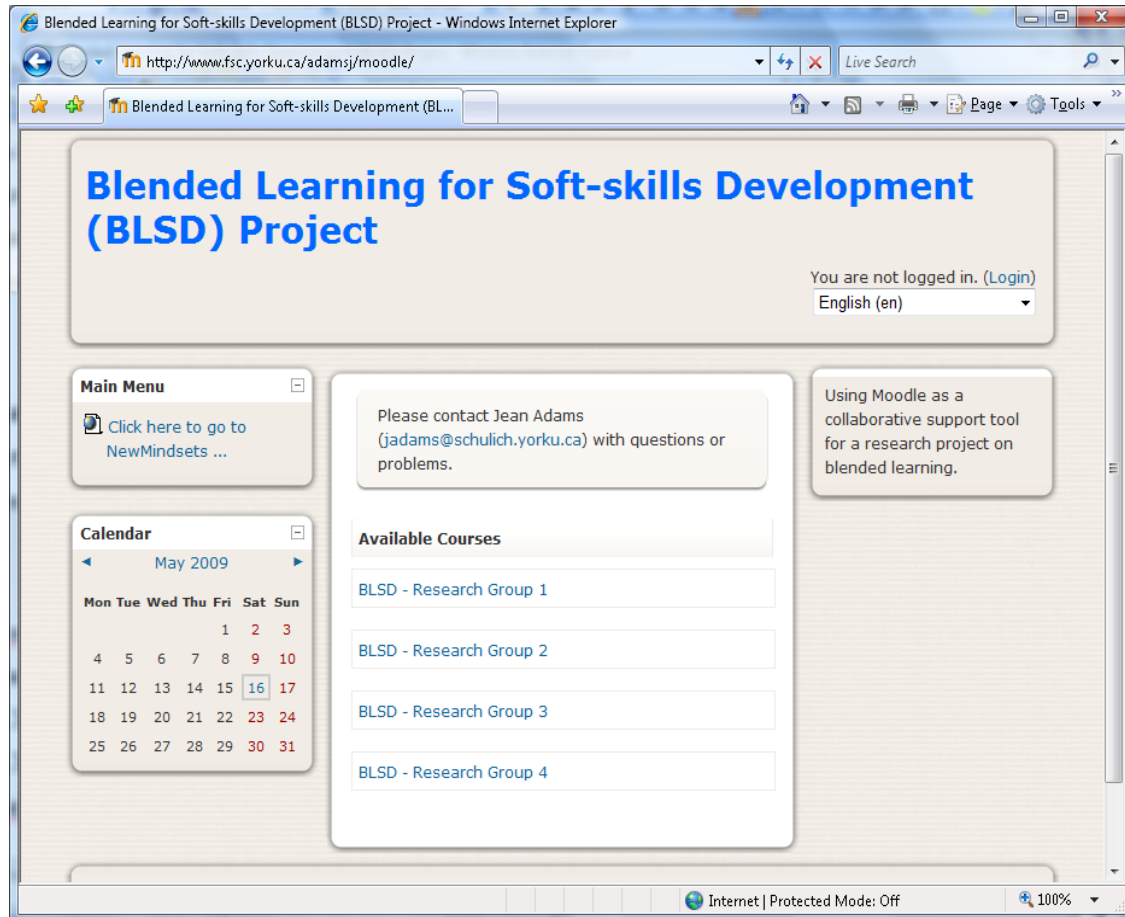
Figure 4. Moodle Home Page.

Retrieved May 05, 2009, from http://fsc.yorku.ca/adamsj/moodle/

Participants were given access to the appropriate section of the site (i.e. Research Group 1, 2, 3, or 4) that featured specific instructions and advice relevant for the blended learning

research group to which they had been assigned (see Figure 5). For a complete summary of the topic headings for each research group across the Moodle sites (see Table 2). For complete details on the instructions for each Research group see Appendix I. All of the blended learning research groups were provided with access to similar, yet distinct, online tools and discussion forums. In other words, all participants had similar opportunities for online discussions, with any of their own research group members who opted to participate. In Research Groups 1 and 2, these collaborative activities were completely optional, whereas in Research Groups 3 and 4 they were integrated as formal learning activities. All groups were sent periodic reminder emails throughout the research project about the formal learning activities. Some groups (e.g., Research Groups 3 and 4) received more email reminders because there were more formal learning activities scheduled.
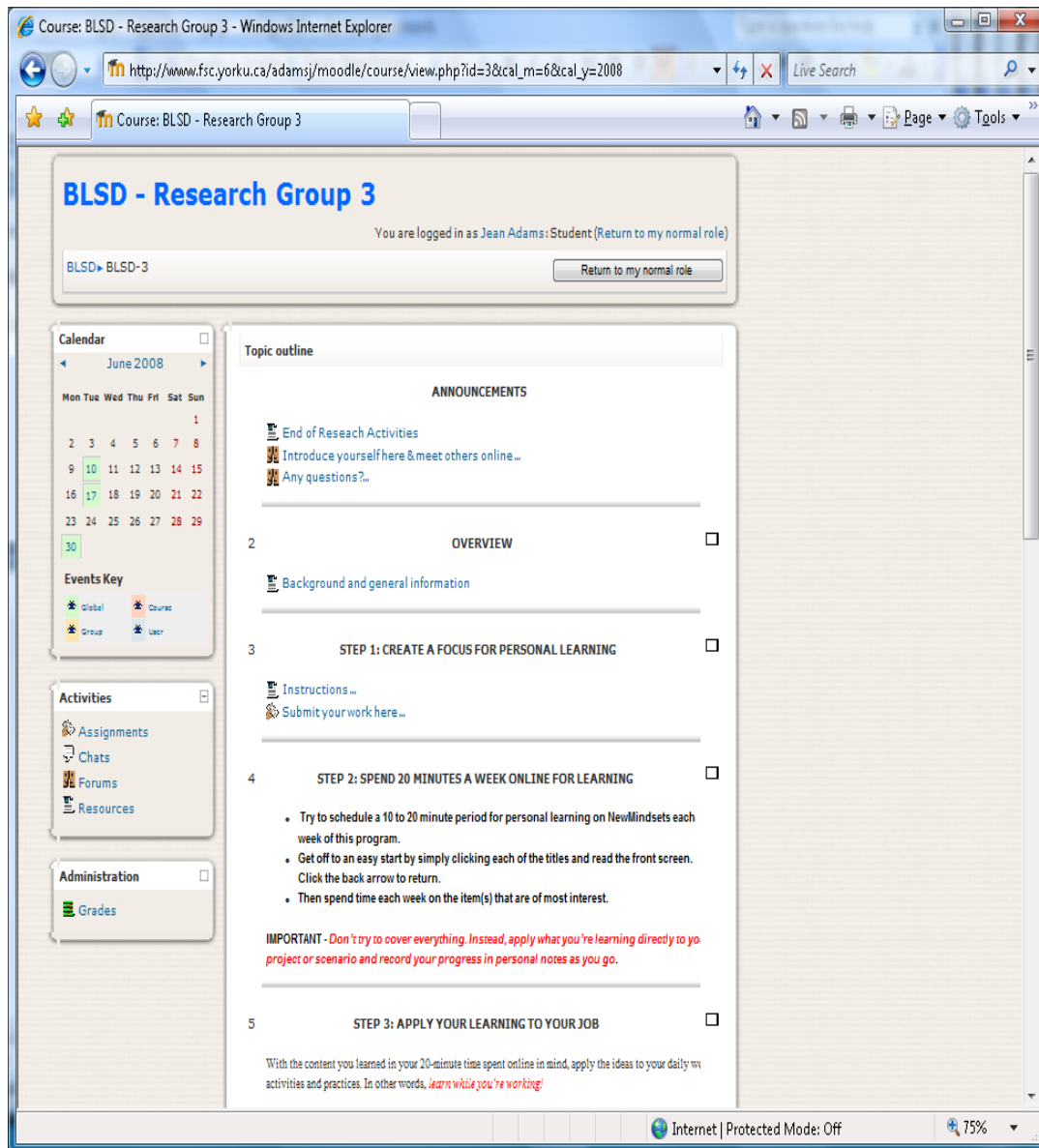
Figure 5. Moodle Home Page for Participants in Research Group 3.

Retrieved May 05, 2009, from http://fsc.yorku.ca/adamsj/moodle/

Table 2 Topic Headings Posted on Moodle for Each Research Group

BLSD – Group 1	BLSD – Group 2	BLSD – Group 3	BLSD – Group 4
Announcements			
Overview - Customized for each Research Group			
Step 1: Create a focus for personal learning	Step 1: Create a focus for personal learning	Step 1: Create a focus for personal learning	Step 1: Identify a "stretch" project for personal learning
	Step 2: Complete this assignment before your attending Scotiabank Course		
Step 2: Spend 20 minutes a week online for learning	Step 3: Spend 20 minutes a week online for learning	Step 2: Spend 20 minutes a week online for learning	Step 2: Spend 20 minutes a week online for learning
Step 3: Apply your learning to your job	Step 4: Apply your learning to your job	Step 3: Apply your learning to your job	Step 3: Apply your learning to your job
		Step 4: participate in the collaborative activities for your group	Step 4: participate in the collaborative activities for your project team
	Step 5: Complete this assignment after attending your Scotiabank course		
Step 4: Assess your learning outcomes & personal progress	Step 6: Assess your learning outcomes & personal progress	Step 5: Assess your learning outcomes & personal progress	Step 5: Assess your learning outcomes & personal progress
NewMindsets™ Resources (links to online content provided here)			
	BLSD - Coaching for leaders	BLSD - Crucial Conversations	BLSD - Transition to People Management
Content Titles	• The leader as an everyday coach • The nature of multiple forms of intelligence • Advice for coaches • Trained incapacity and self-limitation • Giving constructive feedback	• Dialogue and collective learning • Two-way listening • Promote quality and continuous learning as core values • Dealing with emotionally charged situations	• Cultivating trust • Use multiple views to improve decision making • Overcoming your own barriers to delegating • Create stretch benchmarks • Thinking win-win

• Empowerment • Diagnosing performance problems	• Defensive routines • Picking your battles • The role of "space" in effective communication	• Unlearn to create room for new development • Understanding the ripple effects of words and actions

Data Gathering Technology

York University provided access to an online survey tool that enabled researchers to create, administer and analyze survey data. For this project, the research team used a total of fourteen surveys to gather data throughout the research period. Most took an average of ten minutes or less to complete. Access to surveys and the associated results was password-protected, ensuring confidentiality.

RESEARCH FINDINGS

In general, the research findings reinforce the importance of implementing workplace learning programs that are tightly integrated with workplace practice where people can apply what they are learning directly to an aspect of their jobs (e.g., learning to coach while being involved in coaching an individual to improve performance rather than learning about coaching in an abstract manner which is often the case in traditional classroom or online learning programs than separate learning from the job). The findings also shed light on the different impacts associated with different blended learning strategies, as well as some insights on barriers and motivators for learning in a workplace context. And lastly, the study offers insights linking learning styles/preferences to blended learning strategies and subsequent outcomes. Specific findings are presented in terms of the three hypotheses/propositions that were explored in the methodology section of this report, an exploration of possible inter-relationships between the three major factors studied (demonstrable learning impacts/outcomes, barriers and motivators for learning, and learning styles), and a comparison of sub-group demographics of participants who completed the final research surveys versus those who did not.

Demonstrable Learning Impacts/Outcomes on Job Performance

Hypothesis/Proposition #1: The tighter and more well-defined the links between learning and the job (i.e. moving from blended learning strategy level 1 to 4), the more likely participants are to report demonstrable impacts/positive outcomes on job performance.

Demonstrable learning impacts/outcomes on job performance were assessed in the following two ways: benefit-cost assessment of the return on learning, which measured the tangible and intangible benefits derived from the blended learning study versus the perceived costs to the company; and change in the soft-skills self-assessment scores indicating how the blended learning approach taken impacted personal performance. Each is detailed below.

Benefit-Cost Analysis as Return on Learning

Return on learning was defined as a "way to report the new value created and benefits

derived from learning, versus the costs of participating." Sixty-two participants responded to this question in the end of program survey. Their responses, proportionately for all participants and sub-groups, are presented in Table 3 and Figure 6 below, which is preceded by a brief description

- *Research Group 1 (RG1):* This blended learning strategy used online learning materials as a background resource for self-directed learning - defined as a *very loose* coupling of personal learning with job performance in relation to the other blended learning strategies.

- *Research Group 2 (RG2):* Online materials were integrated as pre-and post work for a structured classroom course in this blended learning strategy.

- *Research Group 3 (RG3):* Online learning materials were integrated with personal learning objectives and blended with collaborative discussion forums and peer coaching.

- *Research Group 4 (RG4):* Online learning materials were used to support action learning projects where a demonstrable return on learning (ROL) was expected - defined in this research as a *very tight* coupling of personal learning with job performance in relation to the other blended learning strategies.

Table 3 Return on Learning (ROL) Comparison by Research Groups

ROL Descriptors	Percentage of Participants				
	All	RG1	RG2	RG3	RG4
I created *a lot more new value* for myself and the company than the costs invested!	37%	8%	69%	33%	36%
The new value created is *slightly* more than the costs	18%	33%	15%	8%	0%
I broke even – the costs and benefits were about the same	19%	33%	8%	21%	9%
The costs *slightly* outweighed the benefits to me and the company	17%	8%	8%	12%	45%
The costs *greatly* exceeded the benefits for me and the company	15%	17%	0%	25%	9%

For comparison purposes the five categories for return on learning were collapsed into three categories: "costs outweigh value," "costs and value were equal," and "value outweighs cost." Chi-square analyses were conducted to determine whether the groups differed in the number of participants who responded to each of these categories. Results indicated that the differences in frequencies approached significance (χ^2 = 11.99, *p* = .062, *φ* = .44; weak relationship). The group driving these results was RG2, where 84% of respondents indicated that the value created from the online component outweighed the costs. It is worth noting that this group was simultaneously taking a Scotiabank training workshop at some point during the time of the project which may also have created some of this perceived value. However, since details of the cost of the Scotiabank classroom-based course were not specified, there is a possibility the benefits may have been overstated. Nevertheless, RG2 clearly had compelling results for the perceived benefits versus organizational costs. Also worthy of note is RG3 where 41% of

participants reported that value exceeded the cost. There were, however, also many in this group (37%) who reported that the costs exceeded the benefits.
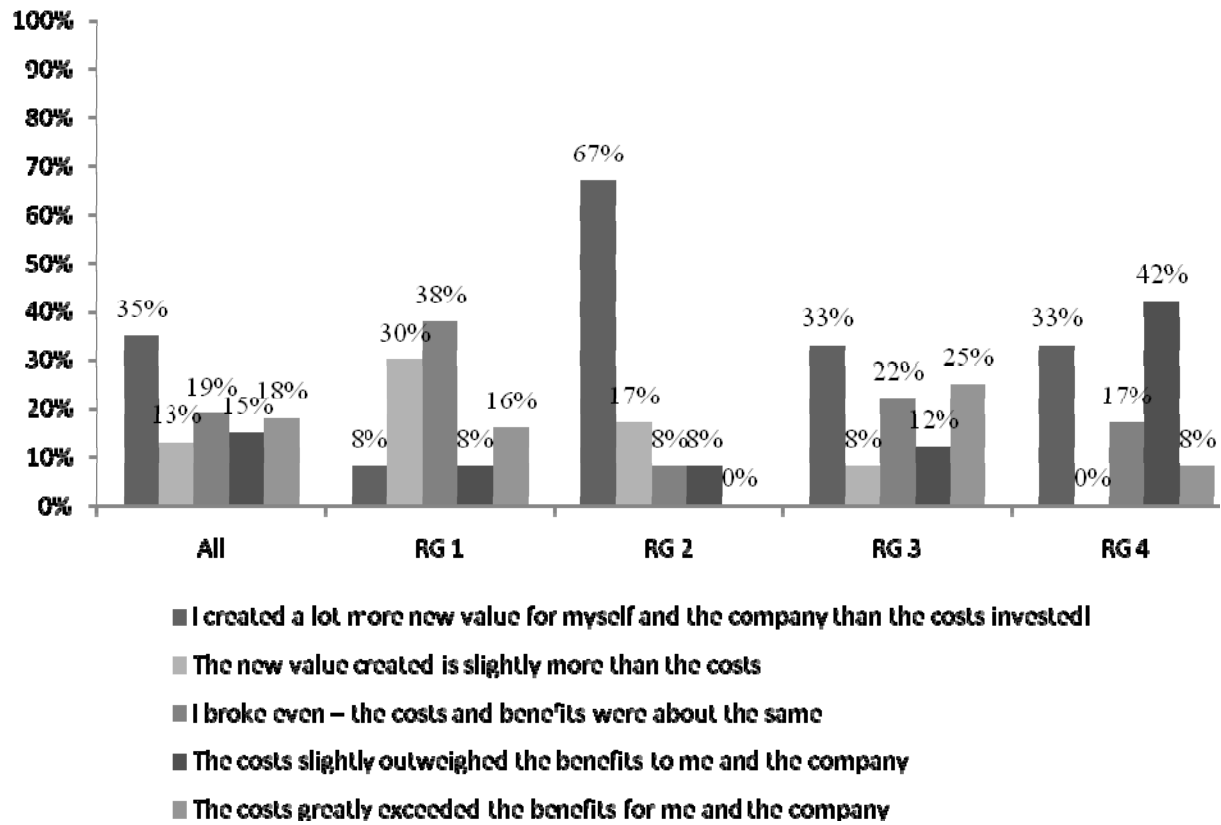
Figure 6. Comparison of Return on Learning (ROL) by Research Groups.

In the follow-up survey, participants were asked to indicate the value they perceived to have gained by being involved with the project. This open-ended question included some responses indicating that the instructions were somewhat unclear for assessing value created, or that there hadn't been enough time to assess a quantitative value. However, responses in each of the research groups indicate that there was, in general, a positive feel about the project and that there was value added to their workplace. The responses, organized by research groups, are presented in Table 4.

Table 4 Comments about Return on Learning (ROL) by Research Groups –

Research Group	A representative sample of participants' comments about value created versus costs.
RG 1	• I guess that I have tried to use more patience. By that I mean having examples of what I am coaching to - getting the employee to commit and taking ownership of what needs to be done. • I feel that my coaching has been more successful. • Made sure that I had a plan with defined goals. Ensured that proper time was spent preparing, to gain better value.
RG 2	• A huge time-saver. • With my busy work and home life it was easier to have a set time to participate in a classroom setting. Ensured I would complete the course without distraction. • …invaluable because I have again been shown a different way of communication more effectively. This makes me a better Manager and supervisor. • I avoided potential problems. • I certainly have approached problems in a different manner. I knew where to start and the path I can take. • I have added more value to my weekly coaching.
RG 3	• I learned how I should be coaching each staff member based on the skills they bring for each task. • It became more rewarding, staff opened up more because of the concern / empathy. More committed to achieving results now. More positive to reaching for higher goals. • I avoided a potential problem. I was able to discuss with the need for further learning and by making it a collective learning experience I was able to avoid open conflict • Approached a situation in a new way • In the long term, officers will develop a more independent approach to their work and therefore be more efficient. This will add to increased revenue for the Bank as they deal more proactively with situations. Time savings for me will be huge! I estimate 6 - 8 hours per week. • Improved coaching skills and response of direct reports should result in a time savings of approximately 3 hours per week or $6280 annually of my time - and have similar effect of each of my four direct reports with estimated savings of $15m. • I feel I am getting more efficient dealing with people at all levels. This saves everybody time • There was so much valuable information, I really would love to be able to learn more • In a small way my team is more positive and motivated for success • Staff opened up more because of the concern/empathy • More committed to achieving results now • It made me stop and think about my approach

RG 4	• Based on the [online] course of Crucial Conversation, yes I am approaching things differently to work towards a harmonious relationship. Also, in dealing with conflict, getting at the facts and looking at it realistically - and admitting if we 'dropped the ball'. Monetary value is usually difficult to assess - yes, we built some relationships and we smoothed over others, but profit/loss in my position is difficult to assess.
	• I don't think I really saved time approaching a situation differently because it takes practice to do it, but the long term results will definitely save me time. I won't have to do things twice.
	• The project went smoother from a communication standpoint

Soft-Skills Development Analysis

The soft-skill survey that was designed by Scotiabank included several constructs/items (see Table 5 for the list of soft-skills) that were assessed by including four indicators for each item. For example, 'Communication' was assessed by a summary score of the four indicators that measured whether employees were effective at observation skills, adaptability, checking for correctness, and summarizing the communication of their peers or subordinates. It was of interest to determine whether the groups of indicators for each item were communally related to their respective item. To determine this, confirmatory factor analysis (with variances of latent constructs constrained to 1) indicated that, in general, the latent constructs (items) were well indicated by the indicators. All latent constructs had non-significant χ^2 values, and RMSEA values of less than .10. Further, CFI and TLI statistics were all very high (above .97). It would be redundant to include all models of all latent variables here, but an example is given in Figure 7. Here, the latent construct "communication" was well indicated by its measures of observation skills, adaptability, checking for correctness, and summarizing ($\chi^2 = .32$, $p=.91$, CFI = 1.0, TLI = .99, RMSEA < .001, SRMR = .012). The numbers on the arrows (λ [lambda values]) indicate that as the latent variable of "communication" increases by one standard deviation, the index will increase by said value. For example, as one increases in the skill of communication by one standard deviation, the score on "observation" is expected to increase by .62 of a unit. The general finding here is that as the indicators increase, the respective item score, that is an unmeasured assumed trait of a person, also increases. This analogy can be said for each of the items and their indicators on the Scotiabank SoftSkills Survey.
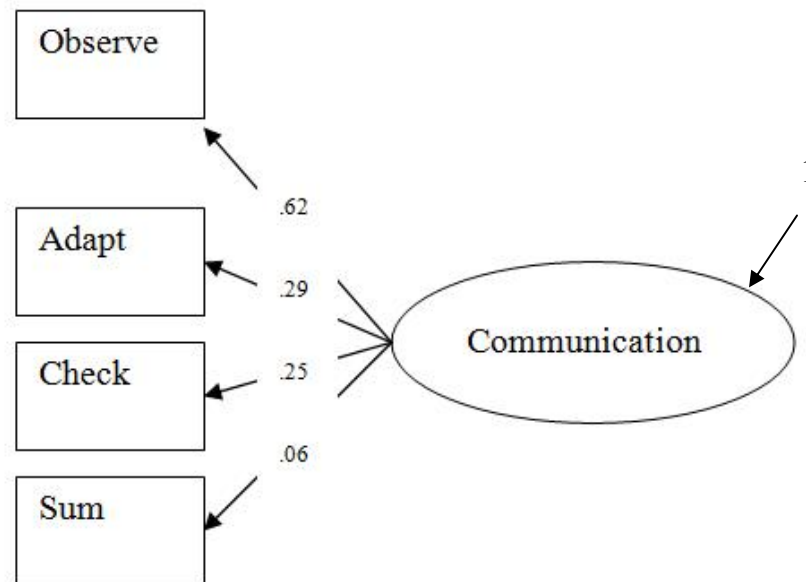
Figure 7. Confirmatory Factor Analysis Example of Scotiabank Soft-Skills Factor "Communication."

Scotiabank Softskills scores were assessed before and after the project to determine whether any significant change had occurred on any of the measures over the course of the eight weeks. Neither the set of outcome variables, nor any individual indices of the measurement indicated significant change over time based on group assignment. In other words, the groups did not change differently over time on the measures of the Scotiabank soft-skills assessment. The data were assessed using imputed scores as many post-project scores were missing and a Maximum Likelihood estimation approach was utilized.

There was also an interest in whether scores changed regardless of group assignment. Multivariate analysis of covariance was conducted, using the pre-scores as a covariate on the post-scores and group as the independent variable (post-test score differences were analyzed

while controlling for differences in pre-test scores). The effect of time (regardless of group allocation) was assessed for each of the indices on the Scotiabank soft-skills assessment. In general, there was a trend for scores to change over time and the magnitude of the change ranges from small to large (seen in the "effect size" column, Table 5). Each index is provided with statistical relevance indicators and size of the effect of time. For example, on the measure of perseverance, participants in general increased by a moderate amount; about 1/3 of a point. To note, 24 was the maximum score possible, and many participants scored high on pretest. Thus the amount of change is relative to the inability to change by much (e.g., ceiling effect).

Summary

The first hypothesis tested yielded mixed results. There was not the expected progressive increase in the benefit versus cost (i.e., Return on Leaning) or in the change in skill development (posttest versus pretest scores) from Level 1 to Level 4 in the four-level model being tested. There were, on the other hand, significant differences in the Return on Learning for the different blended learning strategies. Most notably, blended learning strategies for Level 2 (e-learning blended with classroom-based learning) and Level 3 (e-learning blended with collaboration and coaching) did yield greater organizational and individual value. This seems to confirm the underlying assumption in the hypothesis being tested that different blended strategies do have significantly different impacts on job performance in term of a cost-benefit ratio.

Table 5 Summary of Change in Soft-Skills Assessment Scores for All Participants

Soft-Skills	Pretest Mean	Posttest Mean	F Statistic	p value	effect size η^2
Perseverance	20.3	20.6	11.74	< .001	.07 (moderate)
Influence	21.1	21.6	14.1	< .001	.08 (mod)
Communication	19.6	20.5	20.3	< .001	0.11 (mod)
Team Leadership	20.5	20.9	13.6	< .001	.08 (mod)
Customer Focus	21.7	22.0	18.8	< .001	.11 (mod)
Self-Development	19.3	19.8	11.6	.001	.07 (mod)
Flexibility	19.9	20.2	23.2	< .001	.13 (large)
Relationships	19.4	20	6.8	0.01	.04 (small)
Team Focus	19.7	19.8	2.7	0.07	not significant
Innovation	20.4	20.4	16.8	.10	not significant
Empathy	20.7	20.4	20.2	<.001	.12 (moderate)
Results Focus	20.8	20.8	14.2	<001	.085 (moderate)
Coaching	19.6	20.3	7.9	.01	.05 (small)

Also worthy of attention at a research project level, more benefits versus costs (Figure 6) were reported for the organization. Similarly, there was a significant, though to a varying degree of, change in skill development over the six week research period (Table 5). Considering that the blended learning design was based on a twenty-minute model (i.e., learners were asked to spend twenty minutes a week on the research project for a total of two hours of learning over the six week period), these impacts on job performance are quite promising. These results seem to suggest that even short spurts (i.e., twenty minutes a week) of ongoing learning, even for a limited period (i.e., six weeks in this case) can have positive impacts on job performance and likely reinforces the promise of blended learning as a useful organizational tool for continuous performance improvement.

Lastly, the extremes are worthy of note. Overall, 37% of participants reported "I created *a lot more new value* for myself and the company than the costs invested!" and 15% of

participants reported "The costs *greatly* exceeded the benefits for me and the company." Although this differs to some degree by different blended learning strategies, it is a fairly consistent finding across all research groups. This suggests that there are other factors, likely individual and possibly organizational, that have an impact on the findings for this hypothesis.

Motivators and Barriers for Learning

Hypothesis / proposition #2: The tighter and more well-defined the links between learning and the job (i.e. moving from blended learning strategy level 1 to 4), the more likely participants are to report learning motivators rather than barriers to learning.

Barriers and motivators for blended learning strategies used to support personal learning in a workplace context were investigated using a pretest and posttest questionnaire, a brief mid-point survey, and a few telephone interviews. Based on personal experiences and a review of literature on barriers and motivators for learning, the research team identified eleven potential barriers and ten potential motivators (Appendix E). Along with this inventory of barriers and motivators that learners tend to encounter during their learning, the questionnaire also included open-ended questions designed to capture participants' own perceptions of factors that motivate or impede their learning and an option for one of the research team members to contact those interested in discussing their experiences in more detail. Participants were asked to identify and rate the strength of proposed barriers and motivators on a three-point scale: "no barrier / no motivator," "minor barrier / minor motivator," and "major barrier / major motivator."

To analyze the collected data, the researchers explored the survey data to examine the actual percentage distribution of learning barriers and motivators. In addition, rank order analysis was used to compare different sets of top barriers and motivators – before and after the treatment and between the research groups. The detailed findings of the study follow.

Motivators for Learning

The percentage distributions of major motivators for learning rated by the participants for before-after results are reported in Figure 8.
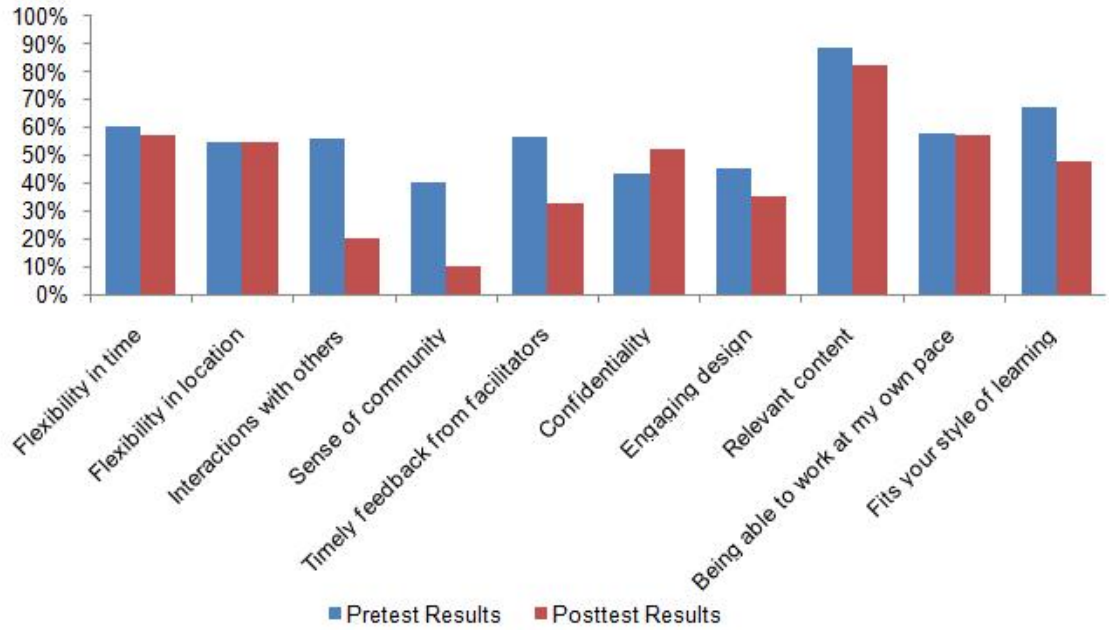
Figure 8. Summary of Major Motivators for Learning.

Survey results aggregated across all participants in different research groups before the research study began indicated that the most common major motivators for learning were "relevant content" (88%), "fits your learning style" (67%), "flexibility in time" (60%), "work at your own pace" (58%), "timely feedback" (56%), "interactions with others" (55%), and "flexibility in location" (55%). Motivators of lesser importance to participants were "engaging design," "sense of community," and "confidentiality". When comparing pre/posttest results, rank order analysis indicated that "relevant content" remained the top motivator for learning. This was followed with very minor changes in pre/posttest results by "flexibility in time," "work at my own pace," "flexibility in location," and "confidentiality." Two of the motivators showing the largest pre/posttest changes were "interactions with others" which ranked as a top motivator (56%) at the beginning of the research project and dipped to 20% after, and "sense of community" perceived as a motivator by 43% of respondents before the research to 10% after it

completed. One other noteworthy pre/posttest finding is "confidentiality" which shifted upward in rank order (from 43% to 53%). Qualitative data (see Table 6) also supported these findings.

Table 6 Participant Comments about Major Motivators for Workplace Learning

Motivators	A representation sample of participants' comments
Relevant content	• Course material which is very relevant to my job motivates me.
	• Content relevant to work and life interests - easy to see how it fits to my job or personal life.
	• Real-life examples - this ensures I am on the right path.
	• The possibility in taking part of ongoing changes or ideas, to our organization which will directly affect me as a staff member.
Flexibility in time & location	• With a busy life, being able to fit my learning into a schedule that fits my needs is key.
	• Being able to save at any point in time and not lose my place.
	• Course flexibility - in how take course (i.e., e-learning, or classroom setting or a combination of both), to allow for better work-home life balance.
Timely feedback	• Sometimes it would be beneficial to receive feedback to make sure you are on the right track. This goes a long way towards self confidence.
	• When taking courses via distant learning, I find it difficult not having the "classroom" feedback to ensure I am on the right track.
	• There are times that one does need one-on-one with their tutor and feedback is very important when taking distance courses.

Comparisons of the top three major motivators across the four research groups (see Table 7) were quite similar. In spite of a few differences between groups, chi-square statistics indicate there are no truly significant differences between the major motivators as perceived by participants in terms of different blended learning strategies. Participant comments confirm that workplace learners are motivated by content relevancy foremost, and then by individual factors such as learning style, flexibility, and ability to work at own pace.

Table 7 Summary of Major Motivators for Learning by Research Groups

Research Groups	Top Major Motivators	A representative sample of participants' comments
RG 1	• Relevant content (71%) • Able to work at my own pace (71%) • Flexibility in time (71%) • Flexibility in location (71%)	• The more I know the more I can help my employees... • The online information and practice scenarios are excellent and very informative. • ...I can work at my own pace and on my own
RG 2	• Relevant content (86%) • Fits your style of learning (71%) • Confidentiality (71%) • Able to work at own pace (57%) • Flexibility in time (57%)	• I enjoy the readings as they all apply directly to daily situations and ring true. I especially liked the tips for dealing with various situations. • I truly get motivated by learning new skills and being able to apply them in my day to day life (work & home).
RG 3	• Relevant content (85%) • Flexibility in time (60%) • Able to work at own pace (55%) • Confidentiality (55%)	• I really like that there is so much valuable information in the learnings, with reference to more research if you would like to learn more. • The courses offered provide many valuable insights which I try to take back to the job and put into practice with some

		successes.
		• The individual modules do not take a great deal of time to complete, and this is important given time constraints of my position. You can actually feel that you completed something within 20-30 minutes.
		• The information is good and it makes me focus on the area of study and how I can apply it to my situation.
		• I find I have to slot a specific time in my Agenda to ensure I allot adequate time to complete the learning activities. This is working for me.
RG 4	• Relevant content (83%) • Flexibility in location (83%) • Able to work at own pace (50%) • Fits your style of learning (50%)	• The topics that we had to choose from are very relevant to my position and it is always good to have more information • It is so interesting it [the information on the website] makes me want to learn everything. • Being able to go online at anytime within a window to complete the study is really helpful.

Note. Top *major* motivators as identified by more than 50% of participants in each research group.

Research participants also identified other motivators for workplace learning (see Table 8) not included in our inventory, but most certainly worthy of future attention.

Table 8 Other Motivators for Workplace Learning Identified by Participants

Other Motivators	A representative sample of participants' comments
Self-motivation	• Always want to do my best.
	• Feelings of success and achievement.
	• The more I can learn, the better I am equipped to help supervise and pass this knowledge on to my co-workers.
	• Desire to learn new concepts.
	• I anticipate each day to be a motivator to learn something different.
	• I am really interested in furthering my studies on coaching.
	• The desire to grow and improve is still high.
	• See the value of the courses.
	• Keeping the focus alive. I keep my Crucial Conversation book close by my side.
	• Eagerness to see how course can benefit.
Rewards	• Make more money and get promoted (i.e., extrinsic rewards).
	• The learnings will help me do my job better and improve my life. (i.e., intrinsic rewards).
Supportive culture	• Opportunity to try out new things and having a supportive management team that embraces new processes.
	• The support from my manager.
	• When I receive the emails, it reminds me to check out the site, and do a bit of learning.
	• The regular/weekly emails from Jean Adams serve as a great reminder to get the learning done and to move forward in the required activities.

Barriers for Learning

The percentage distributions of major barriers for learning rated by the participants for before-after results are reported in Figure 9.
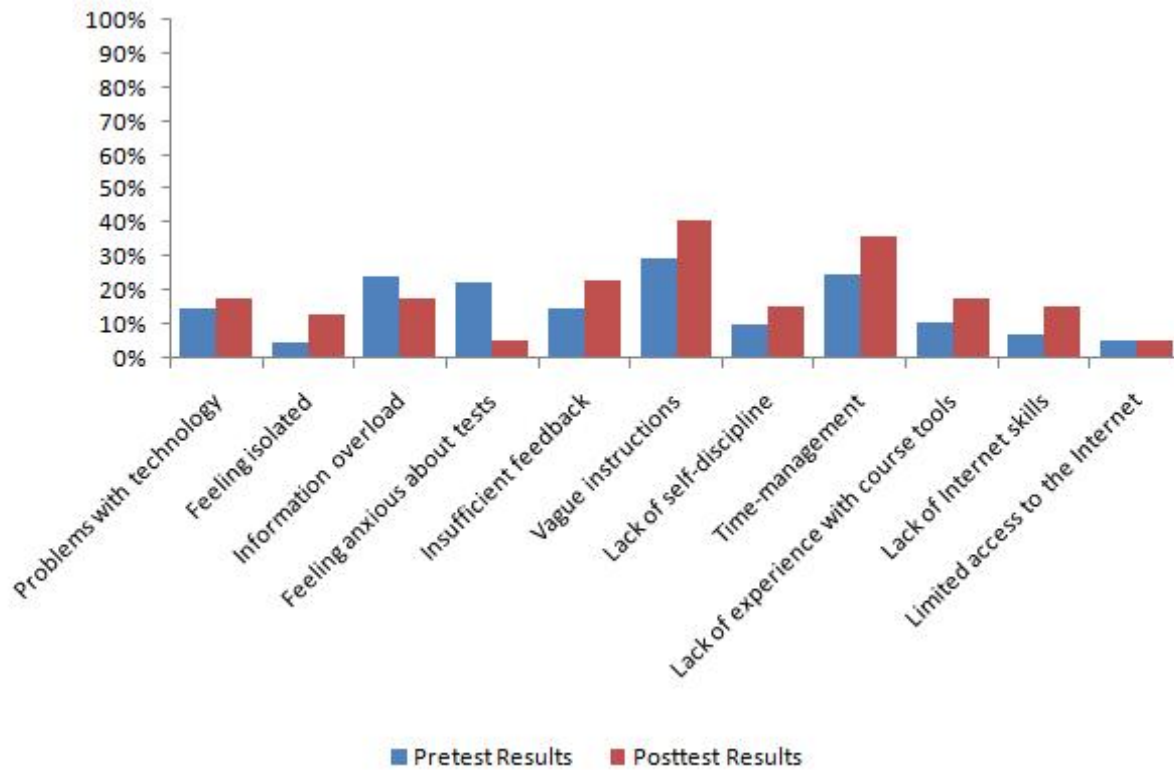
Figure 9. Summary of Major Barriers for Learning.

It is worth noting that the "major barrier" response rates were all less than about 30% at pretest and less than 40% at the posttest. Survey results aggregated across all participants in different research groups at the beginning of the research study indicated that the most common major barriers for learning were: "vague instruction" (29.5%), "information overload" (24.0%), and "time management" (24.8%). Barriers of lesser importance to participants were "limited access to the Internet" (5.4%), "lack of Internet skills" (7.0%), and "online isolation" (4.7%). When comparing pre/posttest results, rank order analysis indicated "vague instructions" (41%)

and "time management" (36%) were still prominent. "Information overload", however, decreased in rank to 17% and "insufficient feedback" increased to 23%. Also of interest in the posttest results, three factors were widely identified as 'no barriers': "limited access to the Internet" (87%), "lack of Internet skills" (80%), and "anxiety about tests" (77%). Participants' comments on time management and technology barriers presented in Table 9 provide additional insights on these factors.

Table 9 Participant Comments about Major Barriers for Workplace Learning

Major Barriers	A representative sample of participants' comments
Time management	• My biggest barriers are time management and self discipline. I tend to put things off until absolutely necessary. Then I am stressed, but I do get the job/training done. • Intentions are always good when you start something, however at times there is not enough time in the day to complete. • Courses are too long - spread out over 2 days, when one day would have been sufficient. • Time Management - Interruptions, either at work or at home are a major factor I encounter. Finding the time in general to learn. • My day is very full with coaching, sales, skill-building, and meetings. I find it very difficult to put aside time for learning. It's probably better to remove us to a classroom setting for a day, maybe every 6 months. • Time spent with family after work, made study time limited. • Finding time to complete tasks as sometimes just too busy at work.
Lack of technology skills	• I'm not 100% computer-savvy so some things take me time to figure out. I do find learning online somewhat boring, I learn from listening to other students and the teacher. • I am not as fluent technically as I would like. I have also been on many courses through [my organization], and still get a little nervous on tests vs. assignments. • Getting frustrated when unable to use the systems.

In contrast to the motivators by a research group, the barriers to learning across research groups were rated quite differently by the participants (see Table 10). The most recurrent barriers for Research Groups 1 and 3 were "vague instructions" (57.1% and 47. 4% respectively) and "time management" (42.9% and 47.4%). In Research Group 2, the participants were mostly concerned with external barriers, such as "insufficient feedback" (42.9%) and "vague instructions" (28.6%). Interestingly, the participants from Research Group 4 voiced less concerns about the factors that could impede their learning, compared to the participants from other research groups. Specifically, they rated only six out of ten barriers as "major barrier" with the response rate for each as less that 17%. The rest of the barriers were identified by the participants as "minor barrier" or "no barrier."

Table 10 A Summary of Major Barriers for Learning by Research Groups

Research Groups	Top Major Barriers	A representative sample of participants' comments
RG 1	• Vague instructions (57%) • Time management (43%) • Problems with technology (29%) • Insufficient feedback (29%)	• Wasn't clear on what was expected of me. • As usual, time is the most difficult. In our busy days, it is hard to put away the time that is necessary to keep up on learning new things. • I found this course very interesting, however I could not follow the instructions provided and found it very difficult to navigate between web sites. I really found that a challenge.
RG 2	• Insufficient feedback (43%) • Vague instructions (29%)	• I put time & effort into the assignments and did not receive any feedback. That is not very motivating! • I am also not sure what I am supposed to be doing. • Confusing directions.
RG 3	• Vague instructions (47%) • Time management (47%) • Information overload (32%)	• I am having some difficulty keeping track of where I am and what is necessary to finish. • Time, it is so difficult to carve out uninterrupted time to focus on the learning. Holidays, illness, absences etc have created a backlog making it hard to prioritize the learning. • Lots of links and websites sent - vague instructions - teams put together, no clear direction as to what to do, then time zones not considered.
RG 4	• Problems with technology (17%) • Feeling isolated (17%) • Vague instructions (17%) • Time management (17%) • Lack of self-discipline (17%) • Lack of experience with the course tools (17%)	• Not being in a class or completing as group together makes it easy to procrastinate and do the work. I have not heard from my study group at all. • Confusing at times. We were told to get into groups early on, but not provided any details on other individuals involved with the project. • The study took place during a busy time at work and change in my personal life which affected my ability to take the time to sort out the problems I was having with the technology. I was unable to include it in my priorities. This is unfortunate because the topics available were very pertinent to my job.

Research participants also identified other barriers for workplace learning (see Table 11) not included in our inventory, but most certainly worthy of future attention.

Table 11 Other Barriers for Workplace Learning Identified by Participants

Other Barriers	A representative sample of participants' comments
Work-related pressures	• Deadlines have to be met, and I have been short staffed for about 2 months.
	• It can be very difficult to take courses at work as there are work commitments that need to be met. Sometimes the best laid plans can come to a halt (i.e. someone calls in sick, extra assignments to be done at work, customer complaints, etc.).
	• Interruptions....Others don't always put my needs before theirs.
	• As a manager there are many interruptions that require the use of your computer and you may be in the middle of the course and have incidents where you lose what you had already done.
	• There is absolutely no time at work to relax and learn. I find the pace that I am going and the demands of my position do not allow me a block of time without interruptions. I can tell people that I am not available but there seems to always be a reason for interruption. We are a large branch and a training branch.
	• Time. Really busy at work. System problems. I have 4 direct reports. New trainee takes a lot of my time, plus my own job and the season is busy. Just goes back to lack of time.
Literacy / Capabilities	• I am a poor reader and in spelling so this make it difficult for me to learn through reading.
	• My major barrier is reading and understanding. I am better off listening to audio and video than reading in order to understand concepts. Secondly, in most cases concepts are just being learnt, the discipline to implement them is paramount.
	• My problem is my lack of knowledge or ability to work my way through the different areas. I feel that I haven't been able to utilize all the material to its fullest potential. I also feel that allowing only 20 minutes a week doesn't allow enough time to fully grasp the full concept of the learning.
Interdependence	• No team co-operation. My team did not respond or set up any conference calls. Issues at work came up that didn't allow me to go in and read the material and apply it like I wanted too.
	• Not being in a class or completing work as a group together

makes it easy to procrastinate and not do the work. I have not heard from my study group at all.

Summary

The second hypothesis proved to be false. There was not a progressive increase in the ratio of major motivators to major barriers from Level 1 to Level 4 in the four-level model being tested. Rather the research findings indicated that there was considerable participant agreement about major motivators for learning across all of the blended learning strategies. The top three motivators identified by a large majority of participants were: relevancy of learning content to job-related responsibilities (88%), flexibility in time (58%), and the ability for learners to work at their own pace (58%). This did not differ significantly between the research groups. The research findings also revealed that there was less participant agreement (i.e., no major barrier was identified by a majority of participants) on the factors that were barriers to learning. The most common barriers to learning in this research study were vague instructions (41%), time management (36%), and insufficient feedback (23%). Unlike motivators, there were differences in rank order of major barriers identified in research groups, indicating that different blended learning strategies can create different barriers for different learners. The pre- and posttest comparison of major barriers for learning indicating decreases in information overload (drop from 36% to 17%) and anxiety about taking tests (from 23% to 5%) that can in part be explained by the 20-minute a week study period recommendation and the highly modular self-organizing aspect of the NewMindsets™ second generation e-learning system used to support self-directed learning. Similarly, the increase in rank order for vague instructions (from 30% to 41%) may also be related to the very open-ended learner-controlled pedagogy underpinning the web-content inherent in second generation approaches. Learners familiar with first generation e-learning designs where learning paths are pre-determined, linear and interspersed regularly with tests that need to be passed in order to proceed could feel "lost" and disoriented by the less-structured second generation design.

Since the major motivators and barriers for learning in this study differed from those generally identified in the literature where academic contexts are prevalent, the same survey was

used in an undergraduate introductory business course where second generation e-learning was being used along with classroom study, collaborative team projects and individual skill development action-learning projects. Results revealed that there were differences in the barriers and motivators in the different contexts (i.e., workplace versus academic) as presented in Table 12.

Table 12 Major Motivators and Major Barriers in Workplace and Academic Contexts

	Workplace	University
Major Motivators	• Relevant content (88%) • Able to work at my own pace (55%) • Flexibility in time (58%) • Flexibility in location (55%) • Confidentiality (53%)	• Able to work at my own pace (53%) • Flexibility in time (49%) • Fits style of learning (47%) • Interactions with others (47%)
Major Barriers	• Vague instructions (41.0%) • Time management (36%) • Insufficient Feedback (23%)	• Vague instructions (55%) • Information overload (47%) • Time management (42%)

Noteworthy differences between workplace and academic contexts include the importance of relevant content and confidentiality as major motivators in the workplace context, the importance of interactions with others as a major motivator in academic context, and noteworthy consistency is revealed in vague instructions as a barrier in both contexts (likely related to the open-ended, learner-in-control pedagogy in use in both projects). Another interesting comparison is the higher percentage responding to motivators and lower percentage responding to barriers in the workplace context versus those in the academic context. The major

finding here is that barriers and motivators for learning in the workplace do differ from those in full time academic study, emphasizing the importance of the learning context.

Lastly, research participants identified motivators (i.e., self-motivation, rewards, supportive culture) and barriers (i.e. work-related pressures, literacy/capabilities, inter-dependence) to workplace learning that were not included in the survey tool used. Literacy and self-motivation refer to individual characteristics; the other four relate directly to aspects of the workplace (reward systems, job responsibilities). The idea of peoples' jobs and job contexts as impacting the ease or difficulty for learning on the job is most certainly worthy of further consideration and research. In some cases, jobs themselves and/or workplace practices can actually thwart or prevent learning by creating such enormous barriers that learning becomes extremely difficult, if not impossible. These are organizations where errors are repeated, outdated procedures prevail, and innovation and positive change are elusive ideals. Blended learning strategies in these work contexts would likely need to help people break out of the job constraints and existing workplace practices to seed and foster skill development and performance improvement. The four-level model being tested in this research study emerged through research in organizations that supported learning and new practices. This has also been the experience at Scotiabank where the results improvement noted in the previous section clearly reinforces the notion that the Bank culture supports learners and learning. Though it is rare to conduct a barriers and motivators for learning survey, let alone to perform pre/posttest assessments as in this research project, it would seem to be an important step when designing, implementing and evaluating blended learning in workplace contexts to maximize learning impact. This idea will be explored further in the discussion and implications section of this report.

Learning Styles and Preferences

Hypothesis / proposition #3: The closer the match between individual learning styles and the blended strategy of the course delivery selected, the more likely participants are to report positive learning outcomes and impact on personal skill development (e.g. Those with a kinesthetic learning style would be bettered matched to Level 4)

All of the research participants completed a learning styles survey (Appendix D) at the beginning and end of the research project. They were, however, not given feedback on their learning style until well after the research study ended. On the pretest, about a third of participants were identified as auditory learners and about a third as tactile / kinesthetic. The remainder were either visual learners or some combination of two or all three types of learning style (see Figure 10). The distribution of participant learning styles was similar in each of the four research groups. There was no significant difference in the distribution between the groups, a result of the random assignment of participants to groups.
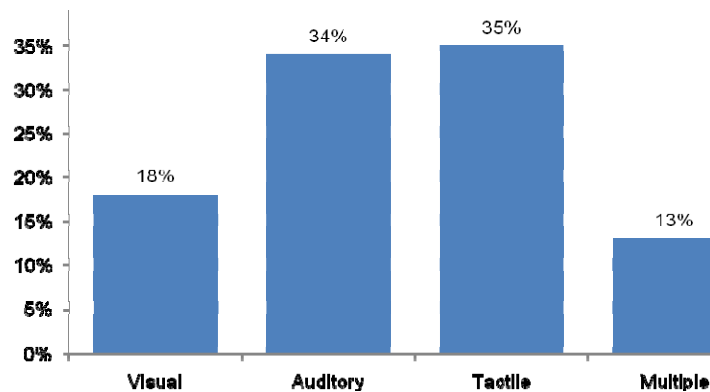
Figure 10. Participants' Learning Styles.

Participants completed learning style surveys at both pre-test and post-test. Further, they were asked to identify which, in their opinion, was their primary learning preference. Some participants showed changes in learning preferences between pre- and posttest timepoints. These differences can be seen below (Table 13).

Table 13 Learning Styles/Preferences: Congruence between Posttest and Pretest

		Learning Style/Preference Congruence between Pretest & Posttest			
		Visual	Auditory	Kinesthetic	Multiple
Learning Style/Preference Scored at Posttest	Visual	*100%	0	0	0
	Auditory	9%	*54%	18%	18%
	Kinesthetic	10%	20%	*45%	25%
	Multiple	11%	56%	33%	*0%

*Learning Style/Preference Scored the Same at Pretest & Posttest
(Note: the rows, not the columns, add to 100%)

To elaborate, there were no changes for visual learners (i.e., 100% of those who scored as visual learners at the end of the research project also scored as visual learners at the beginning of the project). In contrast, all of those who scored as multiple-type learning style at the end of the project had changed from the beginning: 11% originally scored as visual learners, 56% originally scored as auditory learners, and 33% originally scored as kinesthetic learners. It can also be seen that 54% of auditory learners and 45% of kinesthetic learners had consistent pre-post learning styles.

Participants were not given feedback on their learning style scores until well after the last research data was collected. Therefore it is also interesting to note that when asked to which learning styles (auditory, visual, or kinesthetic/tactile) participants *perceived* themselves to be at the end of the research project, 60% thought they were kinesthetic learners (i.e., preferred learning-by-doing style, a hands-on approach). This is explored further in Table 14. Of those who perceived they were kinesthetic, 32% did score as kinesthetic. However, 4% of those who thought they were kinesthetic scored as visual learners, 40% were auditory, and 24% were multiple-type learning style. Interestingly, no visual or auditory learners perceived their learning style to be what they measured on the final learning styles survey. Of those who thought they were visual, 18% were actually auditory, 72% were kinesthetic, and 9% were multiple-type. Of those who thought they were auditory learners, 33% were kinesthetic and 67% were multiple-

type. Interestingly, the only participants in the project who did have perceived styles the same as actual results were 32% of those who were kinesthetic learners.

Table 14 Perceived versus Posttest Measured Learning Styles/Preferences

		Learning Styles/Preference Scored at Posttest			
		Visual	Auditory	Kinesthetic	Multiple
Perceived Learning Styles/Preferences at Posttest	Visual	0	18%	72%	9%
	Kinesthetic	4%	40%	32%	24%
	Auditory	0	0	33%	67%
	Not sure	0	0	100%	0

Learning Styles/Preferences and Return on Learning

A comparison of the value created as cost-benefit ratio (i.e., return on learning) versus learning styles/preferences is summarized in Figure 11. Of the majority of participants who reported creating more value than cost, each learning style/preference is represented. This holds true for the other factors as well, with the exception that there weren't any visual learners who reported 'equal'. Chi-square analyses were conducted to determine whether return on learning varied as a function of participants' primary learning style/preference. There were no significant differences between the research groups ($\chi^2 = 3.72$, $p = .715$). This indicates that, primary learning style/preference was not a factor in the value outcome among participants regardless of the blended learning strategy (i.e., the four research groups have very similar distributions to those presented in Figure 11).
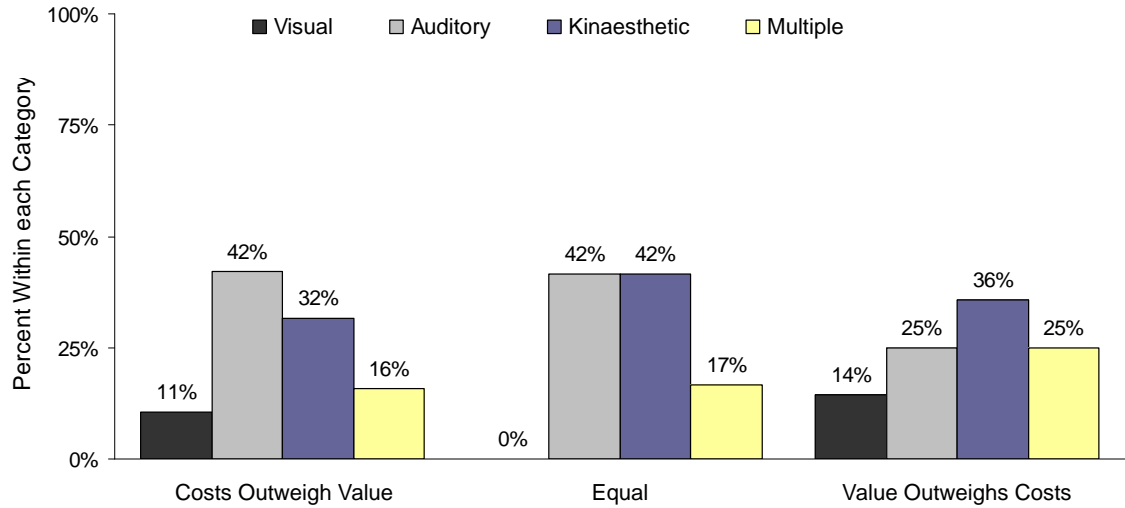
Figure 11. Return on Learning versus Learning Styles/Preferences.

Learning Style/Preference and Soft-Skills Development

Further analyses to determine whether posttest scores were different as a function of both group assignment and learning style/preference were conducted using multivariate analysis of covariance (i.e., ANCOVA) method to test whether certain factors had an effect on the outcome variable. Neither the set of outcome variables on the Scotiabank soft-skills, nor any individual factor showed significant effects to this end. Learners with different learning styles in different groups demonstrated similar levels of learning outcomes across all groups. However, there were a few key elements of interest whose results approach significance. There were some noteworthy 'trends' that seem to emerge in the areas of "self-development" and "relationship building" soft-skills development by learning styles. Details follow.

Self-Development Soft-Skill Development. Participants who were classified with having a "multiple type" primary learning style/preference (i.e., those who had the same measure for two learning styles) had higher scores on self-development after covarying pretest scores, than those in other groups. In other words, we analyzed whether there were differences in posttest scores

after 'controlling', or accounting for differences in pretest scores. We found that those with an "auditory" style/preference had lower posttest scores than participants with other learning styles/preferences. These 'trends' approach statistical significance ($F_{(3,153)}$ = 2.24, p = .086, η^2 = .04; small effect size) as illustrated in Figure 12.
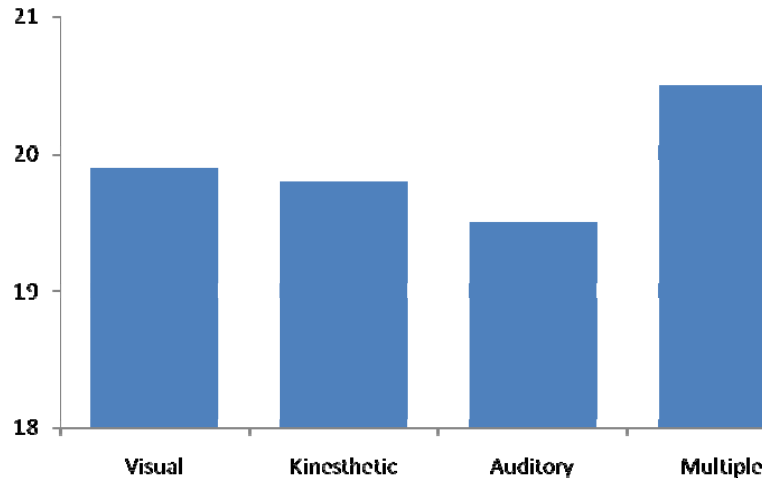
Figure 12. Posttest Mean Scores on Self-Development, by Learning Style.

Relationship Building Soft-Skill Development. Participants who were classified with having an "auditory" primary learning style/preference had lower scores on relationship building, after covarying pretest scores, than those in other groups. These results, again, approach significance. ($F_{(3,153)}$ = 2.20, p = .091, η^2 = .04; small effect size) as indicated below in Figure 13.
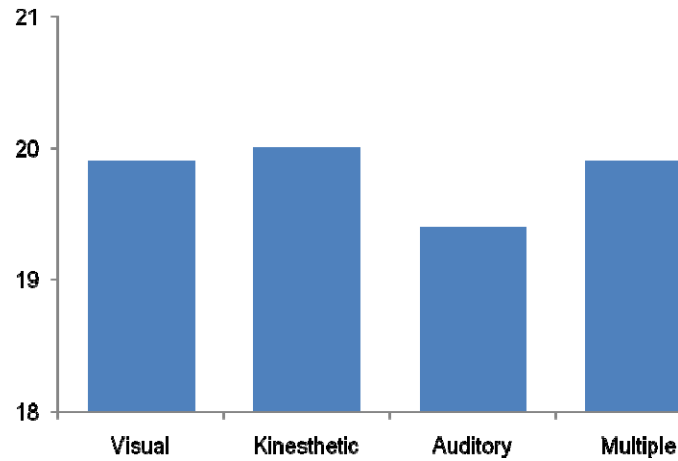
Figure 13. Posttest Mean Scores on Relationship Building, by Learning Style.

Other soft-skill development of interest in this study were persistence (Figure 14), coaching (Figure 15) and communication (Figure 16) – all of which had pre- and posttest positive changes (small or moderate effects) indicated in Table 5. However, no significant difference by learning style was found.

Persistence Soft-Skill Development. Perseverance was not different at posttest (covarying out pretest scores) across learning styles/preferences ($F_{(3,153)} = .46$, $p = .71$).
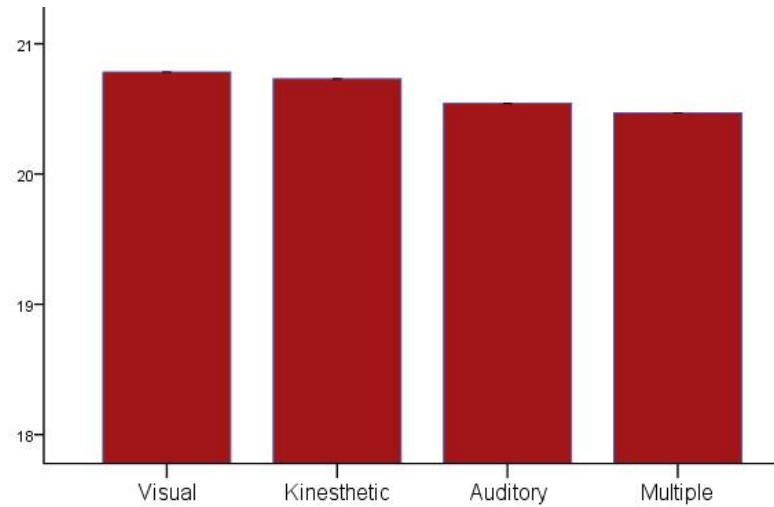
Figure 14. Posttest Mean Scores on Persistence, by Learning Style.

Coaching Soft-Skill Development. Posttest scores on Coaching were not different at posttest, after controlling for pretest scores ($F_{(3,153)} = 1.26$, $p = .29$).
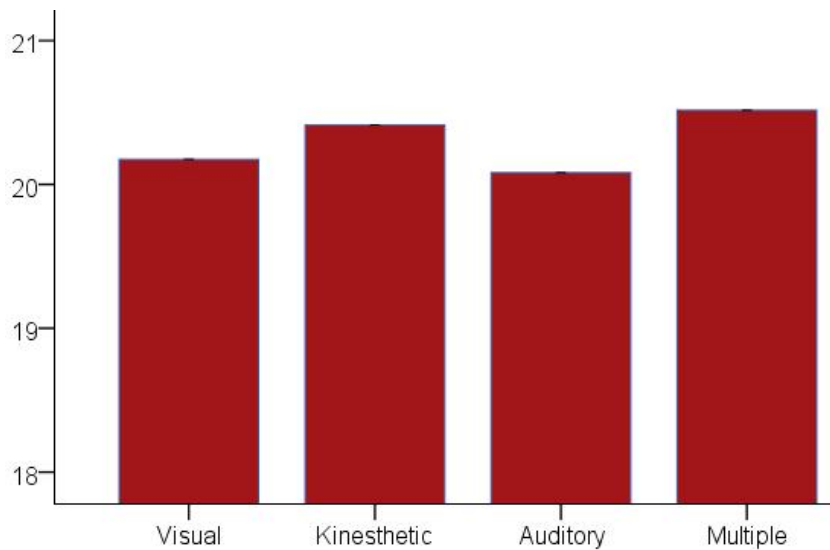
Figure 15. Posttest Mean Scores on Coaching, by Learning Style.

Communication Soft-Skill Development. Scores on Communication were not different at posttest, controlling for pretest scores ($F_{(3,153)} = .78$, $p = .51$)
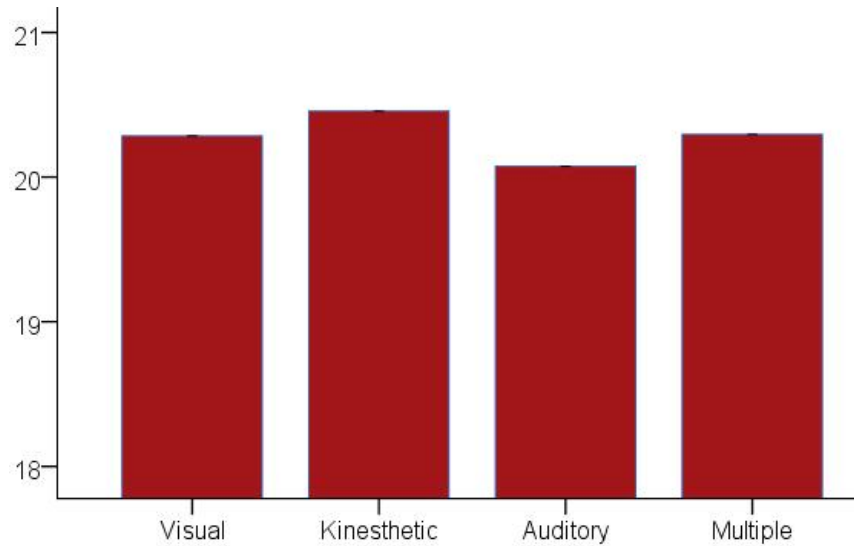
Figure 16. Posttest Mean Scores on Relationship Building, by Learning Style.

Summary

The third hypothesis was found to be false. There was no link proved between closer matches of learning styles and blended learning strategies, and no significant difference in the likelihood of learners with different learning styles reporting different outcomes and impact on personal performance. With hindsight this seems obvious. Blended learning strategies are not uni-strategies employing a single delivery method. Instead they offer a rich learning context aimed at stimulating all of the senses – visual, auditory and kinesthetic. Therefore, in practice it seems reasonable that learners with different learning styles have the potential to thrive. However, the surprising finding in this research is the way those with multiple learning styles performed. This reinforces the point that blended learning strategies provide rich learning contexts across learning styles, and possibly suggests that those who have more a diverse range of learning styles (versus those with a single dominant style) may benefit to a greater degree from blended learning offerings.

The pre/posttest learning styles result indicating that there were changes over the period of the research is also noteworthy, possibly signalling the transitory nature of these subjective self-assessments. Or, perhaps it calls into question the survey measure we used. Nevertheless, since there were no significant links between learning styles and performance, it seems rather pointless to hold much store in learning style assessments (whether they change or not) for screening or streaming learners to specific blended learning programs. However, the finding that is perhaps even more interesting than the change itself, is that so many people (over 60%) self-identified as kinesthetic learners (i.e. preferring to "learn by doing" in a hands-on approach). This may actually have something to do with the context – workplace learning. People tend to take a practical approach in the workplace, and learning by doing (both formal and informal learning) is generally the way daily work practices are disseminated. This suggests that regardless of learning styles, workplace learners may perceive themselves as preferring hands-on learning *on the job*. This mismatch between perception versus measured learning styles score may also draw attention to the issue of personal preferences for learning. Preferences (i.e. whether learners prefer an auditory, visual, or kinesthetic approach to learning new things) may change or shift depending on the topic to be learned and/or the context in which it needs to apply. All this to say, although it is somewhat disappointing that learning styles cannot be used as a predictor of learning outcomes success, the value of learning style assessments may actually rest more in the learner self-awareness generated. Participants, as mentioned earlier, were not told their learning styles until well after the research completed. In return for completing pre/posttest surveys, participants were advised they would receive a personal summary (Appendix H) of personal results. This was widely anticipated, and participants were quite interested to see their scores. Therefore, having learners complete a learning styles measure prior to every course, accompanied with suggestions on how to make the most of the way materials are being presented could be a value-added, constructive use this kind of a tool. A follow-up learning styles survey might also be useful to encourage reflection on "learning to learn". This personal reflection might well be used for future reference, and/or as a starting point for new courses perhaps.

At the end of the project, participants were also asked which of the four blended learning strategies in the research groups they would have chosen if this had not been done randomly. In other words, which of the blended approaches were their preference. Their response was: 55% preferred RG2 (e-learning used pre-post classroom course), 18% chose RG3 (e-learning blended with personal development, collaboration, and coaching), 14% preferred RG4 (e-learning blended with an action-learning project), and 13% chose RG1 (e-learning used as a background resource for personal development). Nineteen people chose the group that they were assigned to in the project. Of those, 58% felt value created greatly outweighed costs and 26% said they broke even. Only 16% felt that the cost outweighed the value created. The result, however, was not significant at the $\alpha = .05$ level ($\chi^2_{(2)} = 5.47$, $p > .05$) – although it does suggest there is value in giving learners a choice in selecting their own blended learning strategies. This will be discussed further in the recommendations section of the report. As a point of comparison, the question about personal preferences for blended learning strategy was asked at a conference session where preliminary research findings were being shared with a group of about a hundred professional trainers and managers whom had not participated in the study. A Classroom Response System (CRS), sometimes referred to as "clickers", was used to capture the data and present it back in real-time in the conference session. Responses to the question "Which of the following blended models would you prefer?" were: 50% of conference participants preferred RG3, 25% chose RG2, 17% selected RG4, and 8% preferred RG1. Then the conference participants were asked: "Which of the following blended learning models do you think participants preferred?" Responses were: 36% predicted RG1 was the top choice; 32% chose RG2, 27% selected RG4, and 5% chose RG3. Everyone laughed as these results were revealed in the conference. What the experts identified as their own preference (RG3) was the selection they predicted learners would *least* prefer! Then the actual research participant choices were presented and again the participants laughed as the results were revealed. What the training experts had predicted as the participants top choice (i.e. RG1) was actually the *least* preferred by research participants! The main lesson from this experience for everyone in the room was that even as training and development experts, it is likely ineffective to predict learners' blended learning preferences based on our own preferences, or on our predictions. To find out what blended strategies are

preferred by learners in a meaningful and accurate way, *learners must be asked to choose for themselves*. Interestingly, a learner-in-control pedagogy underpins second generation e-learning and the approach that guided this research study. The conference experience confirmed the importance of involving learners directly in their own learning. That, however, was most certainly not an expected outcome at the inception of this research. This will be explored further in the Discussion and Implications section of this report. A summary of the preferences identified by the different groups is presented in Figure 17.
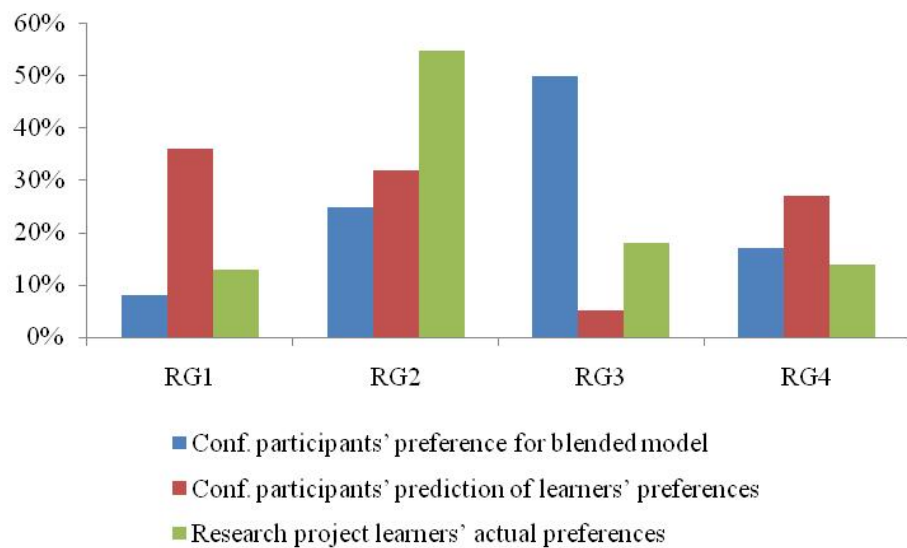
Figure 17. Preferences for Blended Learning Strategies.

Interrelationships Between Major Factors Studied

The research study assessed the learning outcomes and impact on job performance of four different blended learning strategies while exploring learning styles and motivators and barriers for learning. It was anticipated that one of the four blended strategies, Level 4 in the model where participants brought work projects as the focus for learning, would most likely have higher returns. Since the Level 4 model is a very action-oriented approach to learning, it was

thought that those with kinesthetic learning styles would most likely outperform their colleagues with other learning styles assigned to the same research group. It was also thought that the ratio for major motivators to major barriers would be higher for those who created a lot more new value versus others who did not. However, none of these predictions came about as anticipated. Nevertheless, the desire to find interconnections between learning outcomes, learning styles, and motivators persisted. The research team manipulated the findings, applied numerous statistical analytical procedures in the search for some inter-relationships that met significance tests. And, no such inter-relationship has been found. Table 15 was created to emphasize this point. The data for a range of individuals drawn from each of the four Research Groups is presented to show the absence of interconnections- Please note that each table section describes a sample individual. For example, learners who spent more time online did not outperform others. Those who reported "benefits greatly outweigh costs" were present in all four of the research groups, had participants with each of the three different learning styles, spent anywhere from less than an hour to between three and six hours on the research project, and identified different barriers and motivators for learning than their colleagues who were in the same research group. Similarly, those who reported "costs greatly outweigh benefits" also were in all of the groups, exhibited all of the different learning styles, spent widely varying amounts of time on the project, and also had different barriers and motivators for learning.

   This absence of inter-connections that are statistically significant between the three tested hypotheses is in itself an important finding. It emphasizes that there likely are no easy answers, no prescriptive formulas, and no definitive procedures guaranteeing success at a course or program learning design level. This will be explored further in the recommendations section of the report.

Table 15 Comparison by Sample Individual Outcomes within Classifications

Biggest soft-skill diff*	ROL	Hours	Learning style / age / service	Major Motivators	Major Barriers	RG
• +10 Communication • Less developed to Primary	Benefits > Costs	3-6	• Visual • Age: 30-45 • > 5 yrs service	• Flexibility in time • Interactions with others • Sense of community • Confidentiality • Engaging design • Relevant content • Work at my own pace • Fits your style of learning	• Problems with technology • Information overload • Feeling anxious about tests • Vague instructions • Lack of self-discipline • Time-management	RG3
• +7 for Influence • Secondary to Primary	Costs > Benefits	1-3	• Kinesthetic • Age: >45 • > 5 yrs service	• Relevant content • Work at my own pace	• Time-management	RG3
• +7 for Coaching • Secondary to Primary	Benefits > Costs	1-3	• Auditory • Age: 30-45 • > 5 yrs service	• Timely feedback • Confidentiality • Engaging design • Relevant content • Work at my own pace • Fits your style of learning	• Insufficient feedback	RG2
• +5 for Perseverance • Secondary to Primary	Costs > Benefits	1-3	• Auditory • Age: 30-45 • 4 years of service	• No major motivator was indicated.	• Problems with technology • Vague instructions • Lack of exp. with course tools • Lack of Internet skills	RG3
• +4 for Perseverance • Secondary to Primary	Benefits > Costs	1-3	• Visual • Age: 30-45 • > 5 yrs service	• Confidentiality	• Vague instructions	RG2
• +3 for Self-development • Secondary to Primary	Benefits > Costs	3-6	• Multiple-type style • Age: >45 • > 5yrs service	• Flexibility in location • Interactions with others • Sense of community • Timely feedback • Confidentiality • Engaging design • Relevant content • Fits your style of learning	• Problems with technology • Vague instructions • Time-management • Lack of exp. with course tools • Lack of Internet skills	RG1
• + 3 for Empathy • Primary	Costs > Benefits	<1	• Auditory • Age: 30-45	• No major motivators	• Problems with technology • Insufficient feedback	RG1

			• > 5 yrs service		• Vague instructions	
• +3 for Perseverance • Primary	Benefits > Costs	1-3	• Kinesthetic • Age: 30-45 • > 5 yrs service	• Flexibility in location • Timely feedback • Confidentiality • Relevant content • Work at my own pace • Fits your style of learning	• No major barriers	RG4
• +2 for Results focus • Secondary to Primary	Benefits > Costs	<1	• Kinesthetic • Age: 30-45 • 4 years of service	• Flexibility in location • Relevant content • Work at my own pace • Fits your style of learning	• Problems with technology • Lack of exp. with course tools	RG4

Note. Level of Skill Development Descriptors: (a) *primary* (i.e., comfortable with and demonstrate strong tendencies in these competencies. They come most naturally and are used consistently); (b) *secondary* (i.e., demonstrated sometimes; they may be demonstrated less consistently and be less developed than primary competencies); (c) *less developed* (i.e., end to use these competencies less and are more hesitant to use them).

Profile of Participants Who Did Not Respond to the Final Surveys

Two hundred participants indicated that they would like to participate in the research project. Of these, 43 completed the initial survey that informed on location, business line, years of service, etc, but did not complete any other surveys. A further 61 completed aspects of the project at both pre- and posttest, while 98 did not complete any of the final surveys. Nevertheless, the e-learning reports show that 153 of the original 200 participants (76%) did use the e-learning system for an average of 2.5 hours over the period of the research project. Table 16 shows a comparison by research group.

Table 16 Comparison of e-Learning System Usage by Research group

Research Group	Number of Participants in the Original Group	Number of Participants who Logged on	Total Hours	Hours / Participant
RG 1(e-learning as a background resource for personal development)	32	20	24 hrs	1.2 hrs
RG 2 (e-learning used pre-post classroom course)	48	27	50 hrs	1.8 hrs
RG 3 (e-learning blended with personal development, collaboration, and coaching)	60	58	184 hrs	3.2 hrs
RG 4 (e-learning blended with an action-learning project)	60	48	119 hrs	2.5 hrs
Totals	200	153	377 hrs	2.5 hrs

In terms of participants who theoretically "completed" the research project (as identified by those who submitted all of the required final surveys), each of the research groups had attrition near or over 50%. Research group three had participants who showed the least amount of loss, where 48% did not complete all of final surveys, where in groups two and four, there was about 70% incompletion and in research group one, there was just over half. The differences seen here (Table 17) are not significant ($\chi^2 = 7.16$, $p = .067$, $\varphi = .21$).

Table 17 Percentage of Participants Who Did or Did Not Complete, by Research Groups

Research Group	Completers	Non-completers
RG1	44%	56%
RG2	31%	69%

RG3	52%	48%
RG4	28%	72%

Participants' attrition varied by learning style, but not to a significant degree (χ^2 = 6.39, p = .094, φ = .203). In other words, the differences (Table 18) do not indicate that there are any surprising proportional differences.

Table 18 Attrition as Evidenced by Learning Style (Pretest Results)

Learning Style	Completers	Non-completers
Auditory	36%	64%
Visual	22%	78%
Kinesthetic	41%	59%
Multiple Type	57%	43%

Multivariate analyses indicated that on Scotiabank soft-skills as a whole, there was no difference in the set of scores between those who completed the project and those who did not (F = 0.452, p = .947).

DISCUSSIONS AND IMPLICATIONS

The focus of this research study was to compare the learning impact/outcomes of four different blended learning strategies. One of the main rationales was to observe, monitor, test and validate the four-level theoretical model resulting from a previous action learning research study emerging from work reported by Adams (2004). As the results of this research materialized it became evident that there wasn't an indisputable "best blended learning model" emerging. Quite unexpectedly, there were learners who thrived equally well in *each* of the four research groups, as well as others in each group who did not. It seemed that the answer to this outcome might lie in the random assignment of participants to blended learning research groups, and analysis of learning styles data seemed to hold promise for interpreting the research findings. Once again this did not prove to be the case. Not only was there no consistency between learning styles of those who performed well (or not so well) in each of the four research groups, there were pre- and posttest changes in learning styles, as well as major differences between learners' perceptions of primary learning styles versus measured learning styles. This added to the complexity of interpreting the findings. And finally, analysis of barriers and motivators for learning showed no predictive trends, and also suggested that not only could jobs and job contexts be motivators for learning, they could also be barriers for learning as well. In other words, blended learning closely linked to jobs and job contexts where learning is devalued or perhaps even punished would seem to have little chance, if any, of taking hold.

As each of the original three hypotheses/propositions proved false, the following new themes emerged in their place:

- o The importance of understanding the workplace context where learning needs to happen

- o The importance of empowering workplace learners to take ownership of their own learning to do their jobs better, thereby creating new value for themselves and their organization

o The potential of blended learning as a powerful tool for "mass customization" where the benefits of highly personalized learning can accrue

Each of these themes is discussed and explored in this section of the report as the foundation for a new theoretical blended learning model for workplace learning that will be presented in the Recommendations section of this report.

The importance of understanding the workplace context where learning needs to happen

The four-level model being tested in this research emerged over years as part of an earlier action-learning research project that explored and iterated blended learning approaches in different workplace contexts in search for a model that generated concrete value for individual learners and their organizations (Adams, 2004). In that model, Level 4, tightly integrating action-learning projects as the driver for high impact learning, was born in a very competitive, project-oriented culture. The company in the earlier research project can best be described as a network of autonomous profit centers in a highly competitive industry with relatively short client contracts. Training was often viewed by operations as a drain on resources – a cost, not an investment. The breakthrough blended learning strategy in that other organization was to mandate stretch action-learning projects (i.e., defined as a project focus that stretched employees to learn by pushing them outside of their normal areas of responsibilities) as the focus for very results driven learning. Level 4 in that highly competitive, resource scarce context was a success. In contrast, Scotiabank highly values employee training and development, sees learning as an investment, and encourages collaboration and sharing. The Bank is well recognized as an employer of choice. This is a completely different culture than that where the original four-level model emerged. Scotiabank's knowledge-focused, collegial and collaborative culture favours Level 3 (e-learning for personal development blended with collaboration and coaching) and Level 2 (e-learning blended with classroom learning) models, both of which proved highly effective.

The underlying assumption in the first hypothesis is about finding strategies for effectively integrating work and learning to maximize learning output and impacts. This hypothesis does hold true when the context favours learning, as is the case at Scotiabank. The corollary, however, is that the tight integration of work and learning needs to align with

71

organizational culture to maximize impact/outcomes. In theory, action-learning projects (Level 4) can deliver very high benefit-cost returns. However, this will not likely be the case unless organizational practices and culture embrace – and reward – project-based learning.

The other difference between the Scotiabank research and the previous where the four-level model emerged is the role, or priority, of the research project. In the original action-learning research study, the research aspect came in behind organizational practice. In other words, the organizations took the lead on the learning initiative and researchers provided expertise, advice, and objective feedback. From an organizational perspective, the employees were highly visible. Confidentiality of the data gathered by the researchers was maintained; however, the senior management team knew the employees involved and how they performed. The initiative where level 4 emerged in the previous research was part of a succession planning program in a rapidly growing organization. Learners wanted to be visible. They wanted to prove their expertise by showcasing what they could achieve. They wanted to be the next in line for promotion. Once again, Scotiabank was completely different. Participants involved were not visible – all interaction, including the names of those involved was kept completely confidential by the research team. The technologies and research groups were not part of daily workplace offerings or practices. They were added in for the six-week research period only. Confidentiality was identified as a major motivator for participants in this study. However, confidentiality was also a trade-off. While it enabled learners to respond honestly, unhindered by organizational effects, it also created the freedom for learners to choose to start or end the research project at will. Rarely is this ever the case in today's workplace. With tight resources and course tracking statistics, starts/drops/completes are heavily monitored. Interestingly, even without corporate accountability and surveillance factors involved, all of the four approaches had learners who identified positive value creation, positive skill development, and over 75% (153/200) of those who agreed to start the research did spend the suggested time online (i.e. twenty minutes a week for six weeks for a total of at least two hours). This most certainly bodes well for the future of on-the-job approaches to blended learning. If these results can be achieved in a confidential research context, imagine the results when corporate factors such as recognition and rewards are included.

Lastly, this research suggests that it is very beneficial to use surveys about barriers and motivators for learning to better understand learners' perceptions of their work contexts, as well as what personal aspects they find encourage or thwart learning and performance improvement. An ideal use of this kind of information would be to help individuals self-assess what is needed to help them maintain sustainable learning and continuous personal improvement. Another use could be surveys at a program level to determine what aspects are working in favour of personal learning, and others that are actually holding learners back from achieving exceptional outcomes. This goes beyond "smile sheet" (e.g, questions about room temperature, food, location, etc.) assessment that are administered at the end of a workshop. These barriers and motivators for learning would need to be designed to provide feedback on the fundamental design and implementation of the program. And one final use for barriers and motivators surveys could be at a work-team, or supervisor or manager level, where direct reports or team members would be able to identify barriers and motivators in the context that encourages self-development, continuous improvement, and innovation versus those that hold people back from doing a better job. By understanding both the motivators and the barriers, it should be possible to turn some of the negatives into positives, as well as to strengthen the positives to balance the scales in favour of learning.

The importance of empowering workplace learners to take ownership of their own learning to do their jobs better, thereby creating new value for themselves and their organization

This research study clearly shows that different blended learning models can have different individual impacts (i.e., pre/post soft-skills scores) and organizational impacts (i.e., cost-benefit ratio). A somewhat troubling factor in these research findings, for both the research team and the educational community, is that there are no statistically significant, conclusive predictors emerging to explain the differences in a way that can be generalized to a success for all learners model. Instead these findings reinforce and perhaps deepen our awareness of the uniqueness of individual learners, their jobs and job contexts – and the challenges this creates for organizational learning programs. This is a major theme running through all of the findings being reported here.

Although one can argue "uniqueness" of learners is perhaps not a surprising finding, it most certainly has far reaching implications for workplace learning. Unlike academic courses or programs where learners are separated from their jobs and job contexts to learn specific material or demonstrate skills to earn a degree or certificate, workplace learning requires learners to apply what they are learning on the job. After all, doing the job better and creating new value are the dividends paid on workplace investments in employee training and development. One of the messages in this research is that these unique individual factors make it highly unlikely that all learners in the same program, no matter how carefully and competently designed, will have consistent learning outcomes. Add to this the differences in perceptions of motivators and barriers for learning and different learning styles, the equation for success becomes even more elusive. ~~This infers~~ One possibility is that every learner needs a personal learning plan, a highly customized, just-for-me, career-long course of study. Human Resources professionals have been searching for systems and processes to help them assign and/or stream people into productive learning situations, as well as into good job matches. Interestingly, the conference experience (see Figure 17) clearly shows how risky this expert-driven approach can be. The probability for error seems quite high, and every misjudgment costs the organization in terms of underutilized resources, both physical and human. So what's the answer? Given the findings of this study showing that there is not one ideal blended strategy (in particular, the absence of any interconnections or consistent findings shown in Table 15 where learners with similar learning styles were assigned to the same groups and yet performed very differently), an alternative possibility that has emerged (but was not part of the study) lies in giving workplace learners more control and say in their own learning to create contexts that will motivate themselves to learn, and also involve learners in creating their own courses of study. It is true that the learners in this study were not given choices about the blended learning approach they would have preferred. This however is the way training and development in large organizations is conducted today (i.e., one course is designed and rolled out to everyone in a one-size-fits-all strategy). Since that approach is not effective in every case, which has been shown by the results in this study where there wasn't a definitively one-best-way blended strategy, the alternative being suggested here is to involve learners in the choice. More research is still needed. It is however

important to note that the researchers are not proposing that learners need to go it alone – and make these decisions in a void. There is an important role for learning professionals who could be available to support and help individuals, when asked, to select learning and instructional approaches that would be most effective for them for specific contexts or for developing specific soft-skills. A unique blended learning strategy for every workplace learner is quite a radical, and perhaps visionary, statement by today's standards. For example, learners would self-assess personal learning needs, create personal motivators, design personal courses of study to fill learning gaps, self-evaluate and report progress, and claim or reap meaningful individual and organizational rewards based on personal targets. Can this "mass customization" approach where every learner can map out a personal development program to advance skill development and workplace learning be achieved, or is it simply a utopian view? That's the million dollar question.

The potential of blended learning as a powerful tool for "mass customization" where the benefits of highly personalized learning can accrue

Although the research did not find a single "best blended learning model," it did prove that even twenty minutes of online learning blended with other learning modalities over a six week program in every blended learning program in this research can have a positive impact for some learners. As part of a blended learning strategy, therefore, online learning is a highly effective delivery mechanism. The research also shows that different blended learning strategies can work equally effectively for different people.

The key challenge seems to be how to match learners to strategies that will work best for them. One idea is to think in terms of a checklist of options enabling learners to design personalized courses of study much like they build a take-out salad, or order a pizza. Learners could even, theoretically, be guided using a blended learning approach to learn how to take complete ownership for their own learning and personal development. To implement a customizable checklist approach where learners could self-select blended learning options, the first challenge would rest in building the infrastructure of offerings and supports (i.e. the technology aspect and content of the checklist) to make this available, and to maintain and monitor it to ensure quality and relevance. The next challenge would be to teach learners how to

make wise decisions and build effective blended learning solutions to meet personal and organizational needs. And lastly, there would need to be measures of effectiveness of the system put in place as well as organizational mechanisms (i.e. reward systems) integrated to embed a continuous improvement philosophy. If ever there has been a time when this could be achieved, it seems to be now. The abundance of new technologies and tools that can be mixed and matched to offer synchronous and asynchronous learning support is unprecedented. Think about how Twitter (short text messages of 140 characters), Nings (a social platform enabling people to create of join social networks), Voice-threads (audio presentations of thought and ideas), and other new web-based tools and devices could be used to enrich and energize personal learning. A willingness, and sense of urgency, to pioneer new ways to make a "mass customization" approach to workplace learning and employee development a reality is what is required. Not only would this free learners from the conventional bonds of expert-designed and delivered programs and courses by giving them a voice, it would also involve the reinvention of the traditional trainer and course designer roles to those of mentors and professional coaches who would help learners to "learn to learn" effectively.

RECOMMENDATIONS

This research study set out to investigate four different blended learning strategies for supporting workplace learning to identify the most effective strategy and better understand it by analyzing barriers and motivators for learning, and learning styles of the participants in that research group. Instead the research team discovered that some individuals excelled in each of the research groups, and also that there were no common individual characteristics for those who did well in each group, or across the research study. Learning styles differed, learning preferences differed, and major motivators and major barriers for learning also differed. In other words, the major finding is the inability to find a predictable, repeatable, no-fail best approach to *workplace* learning for *soft-skills* development. This unexpected finding has seeded the idea for a new highly individualized, "mass customization" theory for effective blended learning emphasizing the importance of acknowledging the complexity of providing effective soft-skills development programs where personal learning profiles (e.g., personal characteristics, learning needs, learning style/preferences, job responsibilities, job context, job experience, etc.) are unique for every learner. Individualized learning is not a new idea. Learning experts have been talking about it for over a decade. What is new, however, is the way blended learning strategies can make a "mass customizable" learning strategy - a blend tailored to specific learner characteristics, experiences and learning needs - a vibrant reality. The findings in this blended learning research project provide insights on ways to start putting highly personalized programs in place.

In the tradition in action-learning research, both practical and theoretical contributions to knowledge about blended learning are presented in this section to aid both practitioner and academic communities in moving professional practice and research ahead in this field.

Practical Contribution to Knowledge about Blended Learning

This blended research project offers the following practical advice for those interested in developing blended learning strategies for soft-skills development aimed at maximizing learning outcomes for individuals and their organizations:

- Importance of flexible blended learning models that offer learners as much choice as possible

- Value of regularly scheduled learning over time

- Importance of "learning accountability loops" to create tightly structured links between work and learning

- Importance of pre/posttests to evaluate outcomes

- Importance of acknowledging and rewarding learning in meaningful ways for learners

- Importance of a continuous improvement mandate for training and development departments

Each of these points is explored in more detail below.

Importance of flexible blended learning models that offer learners as much choice as possible

Blended learning approaches offer a rich context for learning. The blend of different technologies and instructional approaches creates contexts that can engage learners in a variety of ways, thereby enabling learners to process information using more than one learning style. To build on this research finding, consider offering different options, such as those suggested in Figure 18 that were rated by Scotiabank participants at the end of the research project. In this way learners would be able to self-select the modes of interaction that suit their needs for the topic being studied and the way they can best integrate learning and job responsibilities to create as much synergy between work and learning as possible. This study found that there were no consistent predictors for which learners would be best suited to specific blended learning

offerings. Therefore, it would seem prudent for learning professionals to explore other ways to help people maximize their learning outcomes and impact on job performance. Giving individuals more say and control in the decision-making on effective blended learning strategies that can work for them is an alternative approach that seems to hold promise. Of people who were assigned to the blended learning approach that they alos preferred, 16 out of 19 reported that the learning value created was equal to or greater than the costs). However, more research needs to be conducted to draw firm conclusions regarding the impact of choice.
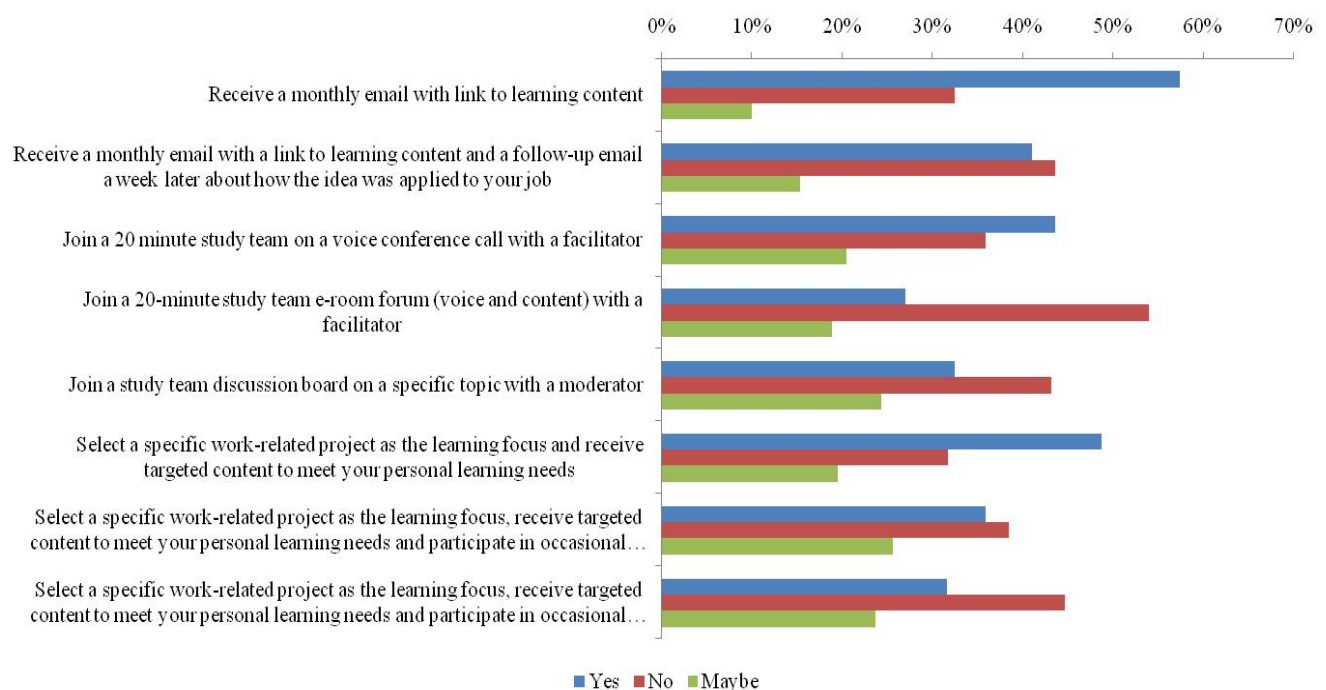
Figure 18. Learner Preferences for Blended Learning Support. Bars represent the percentage of participants' responses to a survey question, "Which of the following learning activities would be of interest? Please select all that apply."

Value of regularly scheduled learning over time

In this research study, learners were asked to find 20 minutes a week (i.e. 2 hours in total over the six-week period) to dedicate to the research project and their personal learning. The online usage figures confirm that those who used the online NewMindsets™ learning materials did create value, spending an average of 2.5 hours in personal study as indicated in Figure 19. Therefore, consider designing blended learning offerings in short spurts. It is most likely easier for many management or supervisory employees to schedule a twenty-minute block of time for personal learning in their busy work days than it will be to get away from the job for a half-day or all-day seminar or training session.
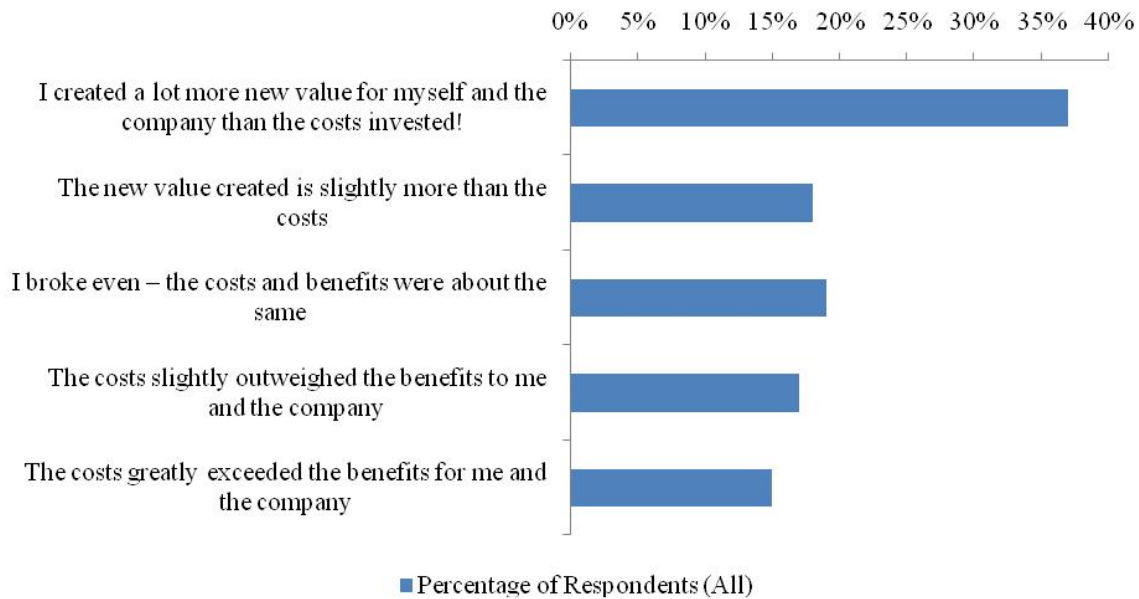
Figure 19. Summary of the Cost-Benefit Returns for the Research Project.

Importance of "learning accountability loops" (Adams, 2008) to create tightly structured links between work and learning

The research supports the importance of creating blended learning strategies that tightly link learning and work if the aim is to maximize job impact. As discussed earlier in the report, tight links between learning and work will vary by organization and by individual learners.

Therefore, it is important to ask learners how they would prefer to create the tight framework that will provide the structure needed to ensure learning gets on their schedule. A list of possible options for doing so is included in Figure 20 where Scotiabank employees have rated the options in terms of effectiveness for them. From an organizational perspective, a tight blended learning structure may involve a strong mandate to create new value from the management team. This was the case in the organization where Level 4 (in the original four-level model research) produced superior cost-benefit returns in comparison to the other levels in the model. However, as can be seen from Figure 21, Scotiabank research participants had varied reactions to mandating learning value creation as a widespread blended learning strategy. Nevertheless, if one takes the total of the responses for high/very high/extremely high, 30-40% were agreeable.
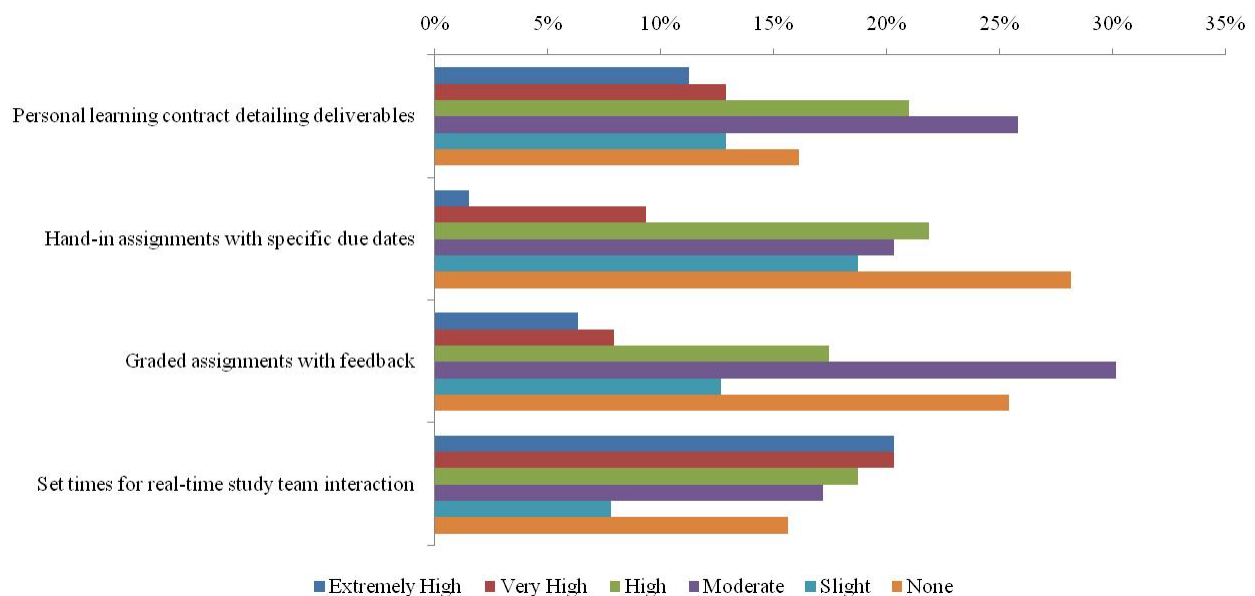
Figure 20. Learner Preferences for Structured Blended Learning Options. Bars represent the percentage of participants' responses to a survey question, "The research was designed in a highly flexible manner to provide meaningful research data on the choices made. For example, we didn't grade your work, or have rewards or penalties for participation as is the case in most formal courses. If we were to do the study again, rate your level of interest in the following options that could provide more structure."
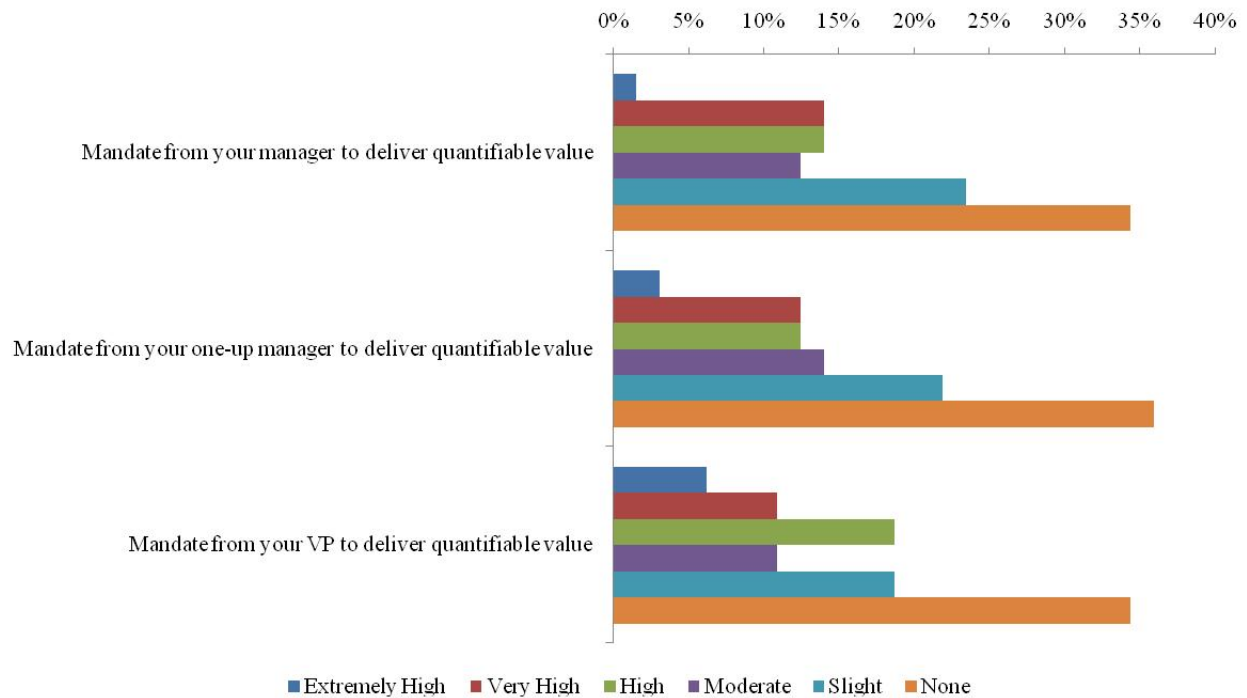
Figure 21. Learner Preferences about Blended Learning Mandate Options. Bars represent the percentage of participants' responses to a survey question, "The research was designed in a highly flexible manner to provide meaningful research data on the choices made. For example, we didn't grade your work, or have rewards or penalties for participation as is the case in most formal courses. If we were to do the study again, rate your level of interest in the following options that could provide more structure."

The important message in Figures 20 and 21 is the wide variety of responses, even when all employees are in the same organization. For this reason, it seems advisable to ask learners for their preferences about ways to help them create tightly structured learning than making the decision for them by designing inflexible top-down approaches when maximizing learning outcomes and job impact is important.

Importance of pre/posttests to evaluate outcomes

The use of pre/post measures proved to be effective in this research for determining shifts and changes in variables of interest. The learning outcomes data provided an objective manner in

which to assess the degree of value created and soft-skill development for both learners and the organization. The pre/post comparisons for learning styles and barriers/motivators for learning were also useful for surfacing assumptions and provoking new insights about learners and learning contexts. Although this research has been unable to explain the reasons for the changes in learning styles and barriers/motivators for learning in a conclusive manner by linking them to blended learning strategies, conducting pre/post surveys seems like a good practice to follow as part of an ongoing evaluation process. For example, feeding this information back to learners may be an effective way to promote reflection about their learning preferences and processes (i.e. which learning styles are dominant, how barriers and motivators for learning influence levels of commitment and ease of learning). Over time this regular feedback may also help to promote a deeper understanding for both organizations and individual learners on how best to structure learning experiences that have maximum impact for everyone involved.

Importance of acknowledging and rewarding learning in meaningful ways for learners

The research findings revealed the importance of creating workplace contexts that motivate learning rather than block it. This, however, is more complex than was originally anticipated. Instead of finding broad themes and consistencies in aspects of job responsibilities and job contexts across an organization that motivate or block learning, the study found that more often than not this seems to be learner-driven. In other words, although there may seem to be consistencies in motivators (i.e. 88% identified the importance of relevant content for learning as a major motivator), that is the exception. Other major motivators such "able to work at my own pace," "flexibility in time," "flexibility in location," and "confidentiality" were identified as major motivators by only half of participants. There was even less agreement about major barriers for learning. This reinforces the importance of investigating what learners do find motivating and rewarding if organizations want learning and continuous improvement programs to payback continuous positive dividends. This point cannot be over-emphasized. What one person my find motivating or rewarding, another may find irrelevant, or possibly even a de-motivator or barrier to personal learning. Figures 22 and 23 show the variety of reactions to questions posed on final research survey about effective ways to acknowledge learning (i.e. letter

from manager) and reward learning (i.e. reward points redeemable for goods and services, career advancement).
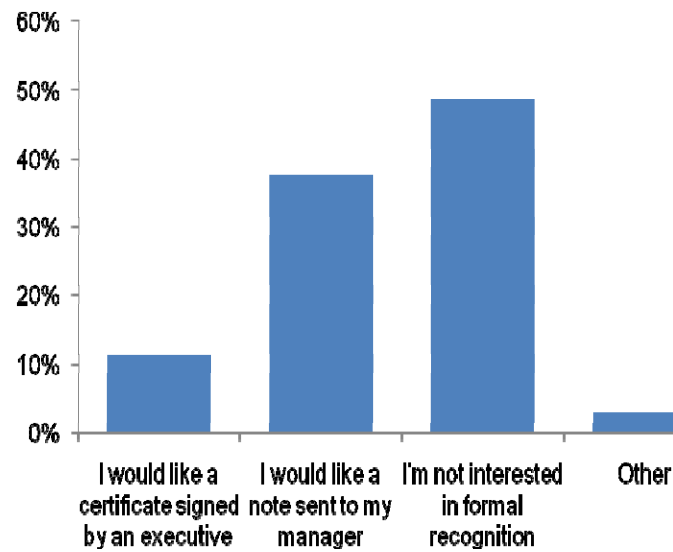
Figure 22. Preferences for Formal Recognition.
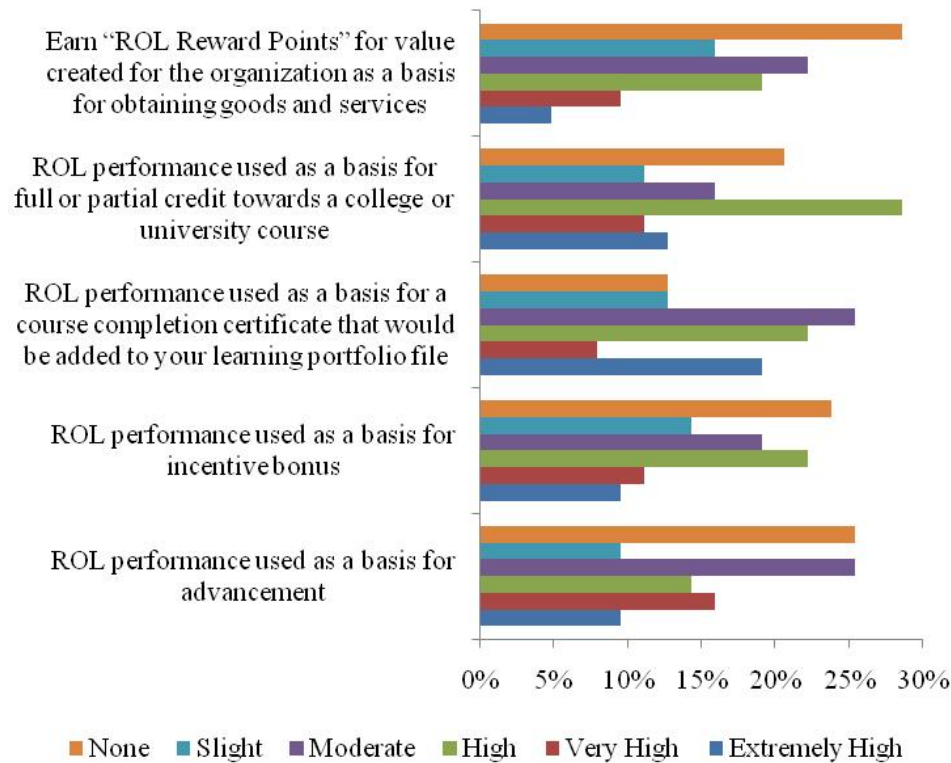
Figure 23. Learner Preferences for Rewarding Blended Learning Output, where ROL means Return on Learning as Cost-Benefit Ratio. Bars represent the percentage of participants' responses to a survey question, "The research was designed in a highly flexible manner to provide meaningful research data on the choices made. For example, we didn't grade your work, or have rewards or penalties for participation as is the case in most formal courses. If we were to do the study again, rate your level of interest in the following options that could provide more structure."

Importance of a continuous improvement mandate for training and development departments

Many of the findings in this research study require us to re-evaluate conventional wisdom and rethink conventional practice around learning. Adopting blended learning strategies provide incentives for both. As new technologies are developed and introduced, finding more effective

ways to do what has been done in the past and actually reinvent workplace professional development seems of paramount importance as resources become tighter and workplace demands greater than ever. This requires more than session feedback (i.e. sometimes called "smile sheets") evaluations. It means seriously looking at every course and program being offered to understand where gains can be made and ways to create business cases for continuing, updating or abandoning offerings. All too often, new offerings that outlast their value, but never get cycled out of production, are draining valuable organizational resources that could be directed towards upgrading and/or initiating new more relevant offerings. Many of the approaches explored in this study (i.e. outcome measures by learner by offering; pre/posttest contextual evaluations; learner style/preference surveys) could be used as a starting point.

Theoretical Contribution to Knowledge about Blended Learning

A preliminary theoretical framework for elements of a "mass customization" approach to workplace learning and professional development is presented in Figure 24 based on the key learnings that have emerged in this research project. The major shift is pedagogical in nature. Instead of a top-down "organization knows best" approach to learning and development, the model is underpinned by a learner-in-control approach where every employee makes decisions about learning within the context of his or her own job-based needs and responsibilities. This is not to say that there will never be a case for top-down, highly regulated conventional learning approaches. Of course there will be times when that learning model will be far more effective. For example, when it comes to organizational mandates around legislated or routinized processes and procedures, more conventional models will be appropriate. However, for soft-skills development to do one's job better, the mass customization model enabling learners to take ownership of personal learning and development will be advisable. The fundamental change is in moving from an organizational model where decisions are made for learners, to one where organizational learning experts ask questions to find effective ways to support a learner-in-control approach. This is not a traditional course-based model. It is a holistic approach designed to foster self-directed, meaningful, career-long learning.

ORGANIZATIONAL RESPONSIBILITIES

- Assess & reinforce organizational factors that promote learning & development
- Eliminate those that do not!

- Identify strategic organizational learning & development needs

- Develop & maintain support systems that foster self-directed, learner-controlled learning (e.g. rewards)

- Develop & maintain a rich inventory of blended learning resources for on the job learning

- Evaluate offerings with a critical eye
- Provide evidence of success to maintain & extend offerings

- Embrace a continuous learning mindset for ongoing organizational learning & innovation

EMPLOYEE RESPONSIBILITIES

Learning Profile

- Self-awareness & self-assessment to create a personal Learning Profile

Learning Mandate

- Identify job-based learning needs

Learning Support

- Request & give help when needed

Learning Content

- Self-select relevant content for learning
- Apply learning on the job

Evaluation & Feedback

- Self-evaluate value creation with a critical eye
- Provide evidence of learning impact to the organization regularly

Continuous Improvement Mindset

- Embrace a continuous learning mindset for ongoing personal & collective growth and development

Figure 24. A Mass Customization Model for Workplace Learning.

In the proposed mass customization model for workplace learning, learners will self-assess how they learn best and what needs to be learned to improve job performance. Learners will request help and give help to others as appropriate in their dual roles of learners and teachers in a vibrant learning community. Learners will self-select learning content, self-determine appropriate evaluation strategies, and self-report evidence of learning impact to support their

87

assessment claims. This ability for learners to adequately take control of their own learning cannot happen in isolation. It needs to be fostered through organizational support systems created and deployed to meet organizational learning strategic imperatives that can advance the development of a unique, competitive knowledge advantage. With a coherent and consistent approach to learning tightly woven into the organizational fabric, organizational culture will evolve to that of a dynamic learning partnership. Learning and job performance will be aligned and tightly linked through reward systems and strategic mandates, and supported through holistic organizational strategies for acquiring and/or creating learning content and technology systems.

CONCLUDING THOUGHTS AND NEXT STEPS

To conclude, the rationale for this research study was threefold: (a) to observe, monitor, test, review and validate the four-level framework in a large, leading-edge Canadian organization; (b) to deepen and extend our understanding of the use of e-learning for supporting soft-skills development in the Canadian workplace to maximize impact on job performance; and (c) to provide a solid platform for future blended learning research in the workplace. Much has been achieved to advance our understanding of blended learning strategies and their impacts in terms of workplace learning. As with most research, answering questions often leads to even more questions. Such is the case in this situation. That a single best blended learning model could not be clearly delineated suggests other possibilities need to be explored. Based on the complexity of individual factors involved, the idea of being able to slot people into a pre-designed blended learning program in a top-down manner seems problematic. Instead, this report favours a "mass customization" approach be considered as a way to provide a personal learning path for each and every employee. This approach has generally been viewed as impossible in the past because of the seemingly infinite nature of possibilities. It is, however, now a possibility that seems eminently doable, considering the vast possibilities for supporting individual and collective learning in today's web-world. It is our hope that this research report brings new light and a sense of urgency to this important mandate to find new, effective ways to maximize the job impact and performance outcomes of personal learning in our workplaces.

BIBLIOGRAPHY

Adams, J., & Morgan, G. (2007). "Second generation" e-learning: Characteristics and design principles for supporting management soft skills development. *International Journal on E-Learning,* 6(2), 157-185.

Adams, J. (2004). *"Second generation" e-learning: An action-based exploration of design and implementation.* Unpublished doctoral dissertation, York University, Toronto.

Adams, J. (2008). Rapid talent development. *Training & Development, 62*(3), 68-73.

Akkoyunlu, B., & Soylu, M. Y. (2008). A study of student's perceptions in a blended learning environment based on different learning styles. *Educational Technology & Society, 11*(1), 183-193.

Albrecht, B. (2006). Enriching student experience through blended learning. *ECAR Research Bulletin, 12.*

Altrichter, H., S., Kemmis, R. McTaggart, & Zuber-Skerritt, O. (2002). The concept of action research. *The Learning Organization*, *9*(3), 125-131.

Argyris, C., & Schon, D. (1978). *Organizational learning: A theory of action perspective.* Reading, MA: Addison Wesley.

Berge, Z. L. (1998). Barriers to online teaching in postsecondary institutions: Can policy changes fix it? *Online Journal of Distance Learning Administration, 1*(2). Retrieved March 10, 2008, from http://www.westga.edu/~distance/ojdla/summer12/berge12.pdf

Bersin, J. (2003). What works in blended learning? Retrieved October 23, 2008, from http://www.learningcircuits.org/2003/jul2003/bersin.htm

Bonk, C.J., & Graham, C.R. (2005). *Handbook of blended learning: Global perspective, local designs.* San Francisco: Pfeiffer.

Carman, J. M. (2005). *Blended learning design: Five key ingredients*. Retrieved April 27, 2008, from http://www.agilantlearning.com/pdf/Blended%20Learning%20Design.pdf

Cook, K., Owston, R. D., & Garrison, D. R. (2004). *Blended Learning Practices at COHERE Universities.* (Institute for Research on Learning Technologies Technical Report No. 2004-5). Toronto, ON: York University.

Dobbs, R. L (2005). An experimental study of the impact of training on faculty concerns. *Journal of Industrial Technology, 21*(1), 2-8.

Dziuban, C. D., Hartman, J. L., & Moskal, P. D. (2004). Blended learning. *ECAR Research Bulletin, 7*. Retrieved April 27, 2008, from http://net.educause.edu/ir/library/pdf/erb0407.pdf

Dziuban, C. D., Hartman, J. L., & Moskal, P. D. (2005). Higher education, blended learning and the generations: Knowledge is power – no more. In J. Bourne & J. C. Moore (Eds.), *Elements of Quality Online Education: Engaging Communities.* Needham, MA: Sloan Center for Online Education.

Eden, C., and Huxham, C. (1996). Action research for the study of organizations. In S. Clegg, C. Hardy, & W. Nord (Eds.), *Handbook of organizations studies.* London: Sage, 526-542.

Fung, Y. Y. (2004). Collaborative online learning: interaction patterns and limiting factors. *Open Learning: The Journal of Open and Distance Learning, 19*(2), 135-149.

Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.), *Handbook of blended learning: Global Perspectives, Local Designs*. San Francisco, CA: Pfeiffer.

Kirkpatrick (1979). Techniques for evaluating training programs. *Training and Development Journal*, *33*(6), 78-92.

Kirkpatrick (1998). *Evaluating training programs the four levels*. San Francisco, Calif: Berrett-Koehler.

Lewin, K. (1947). *The research center for group dynamics*. New York: Beacon House.

Liu, Y., Theodore, P., & Lavelle, E. (2004). Experimental effects of online instruction on teachers' concerns about technology integration. *International Journal of Instructional Technology & Distance Learning, 1*(1). Retrieved September 23, 2006, from http://www.itdl.org/journal/Jan_04/article03.htm

Lupshenyuk, D., Hocutt, M. M., & Gibbs, J. E. (2007). Investigating concerns of teacher education students about the integration of online learning communities in traditional instruction. In G. Richards (Ed.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* (pp. 6275-6282). Chesapeake, VA: AACE.

Martyn, M. (2003). The hybrid online model: Good practice. *Educause Quarterly, 1*, 18-23.

McGreal, R., & Anderson, T. (2007). E-Learning in Canada. *Journal of Distance Education Technologies*, *5*(1), 1-6.

Moore, J. C. (2004). ALN principles for blended environments: A collaboration. The Sloan Consortium. Retrieved November 20, 2008, from http://www.sloan-c.org/publications/books/alnprinciples2.pdf

Morgan, G. (1997). Appendix B: A note on research method. In *Imaginization: New mindsets for seeing, organizing, and managing.* Thousand Oaks: Sage, 295-312.

Morgan, G., & Adams, J. (2009). Pedagogy First! Making web-technologies work for soft-skills development in leadership and management education. *Journal of Interactive Learning Research, 20*(2), 129-156.

Morgan, G., & Ramirez, R. (1984). Action learning: A holographic metaphor for guiding social change. *Human Relations, 37*, 1-28.

Morgan, G., & Smircich, L. (1980). The Case for qualitative research. *Academy of Management Review, 5*(4), 491-500.

Muilenberg, L. Y, & Berg, Z. L. (2005). Student barriers to online learning: A factor analytic study. *Distance Education, 26*(1), 29-48.

Muthén, L. K., & Muthén, B. O. (1998 – 2007). *Mplus User's Guide.* (5th ed.). Los Angeles, CA: Muthén & Muthén.

Nagura, H., & Arakawa, Y. (2003). Effectiveness of blended learning in management skill training. *NRI Papers.* Nomura Research Institute, Ltd.

Owston, R., Wideman, H., & Murphy, J. (2008). Blended learning for professional development in diverse urban settings: Findings from three project evaluations. *Proceedings of the Annual Meeting of the American Educational Research Association*, New York, NY.

Panda, S., & Mishra, S. (2007). E-learning in a mega open university: Faculty attitude, barriers and motivators. *Educational Media International, 44*(4), 323-338.

Pedler, M. (Ed.). (1983). *Action learning in practice.* Aldershot: Gower.

Picciano, A. G. (2006). Blended learning: Implications for growth and access. *Journal of Asynchronous Learning Networks, 10*(3).

Popper, K. (1958). *The logic of scientific discovery*. London: Hutchinson.

Procter, C. (2003). Blended learning in practice. *Proceedings of Conference on Education in a Changing Environment*, Salford, UK.

Revans, R. (1982). *The origins and growth of action learning.* Bromley, UK: Chartwell Bratt.

Simpson, M. (2008). Attempting to realise the potential of blended learning: An initial teacher education case study. In *Hello! Where are you in the landscape of educational technology?Proceedings ascilite Melbourne 2008*. Retrieved December 2008, from http://www.ascilite.org.au/conferences/melbourne08/procs/simpson.pdf

Susman, G., & Evered, R. (1978). An assessment of the scientific merits of action research. *Administrative Science Quarterly, 23*, 582-603.

Thorne, K. (2003). *Blended learning: How to integrate online and traditional learning.* London, UK: Kogan Page.

Tynjala, P., & Hakkinen, P. (2005). E-Learning at work: Theoretical underpinnings and pedagogical challenges. *Journal of Workplace Learning*, *17*(5/6), 318- 336.

Vaughan, N. (2007). Perspectives on blended learning in higher education. *International Journal on E-Learning, 6*(1), 81-94.

Vaughan, K., & MacVicar, A. (2004). Employees' pre-implementation attitudes and perceptions to e-learning: A banking case study analysis. *Journal of European Industrial Training, 28*(5), 400-413.

Whyte, W. F. (Ed.). (1991). *Participatory action research.* Thousand Oaks, CA: Sage.

APPENDIX A: Research Ethics Forms

Research Ethics Approval Letter

YORK
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OFFICE OF
RESEARCH
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Certificate #:	2007- 178
Approval Period:	09/20/07-09/20/08

Memo

To: Professors Jean Adams, Gareth Morgan, Ron Owston
        jadams@schulich.yorku.ca   rowston@edu.yorku.ca

From: Alison M. Collins-Mrakas, Manager, Research Ethics

Date: **Monday August 20th, 2007**

Re: **Ethics Approval**

        Blended Learning for Soft Skills Development: Testing a Four-level Model
        Integrating Work and Learning to Maximize Personal Practice and Job
        Performance

I am writing to inform you that the Human Participants Review Sub-Committee has
reviewed and approved the above project.

Should you have any questions, please feel free to contact me at: 416-736-5914 or
via email at: acollins@yorku.ca.

Yours sincerely,

Alison M. Collins-Mrakas M.Sc.
Manager, Research Ethics

Research Ethics Approval Letter (Renewal)

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UNIVERSITY

Certificate #:	2007- 178
Renewal Approved:	08/28/08
Approval Period:	08/28/08-08/28/09

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Memo

To: Professors Jean Adams, Gareth Morgan, Ron Owston
jadams@schulich.yorku.ca   rowston@edu.yorku.ca

From: Alison M. Collins-Mrakas, Manager, Research Ethics

Date: **Thursday August 28th, 2008**

Re: **Ethics Approval**

Blended Learning for Soft Skills Development: Testing a Four-level Model Integrating Work and Learning to Maximize Personal Practice and Job Performance

With respect to your research project entitled, "Blended Learning for Soft Skills Development: Testing a Four-level Model Integrating Work and Learning to Maximize Personal Practice and Job Performance", the committee notes that, as there are no substantive changes to either the methodology employed or the risks to participants in and/or any other aspect of the research project, a renewal of approval re the above project is granted.

Should you have any questions, please feel free to contact me at: 416-736-5914 or via email at: acollins@yorku.ca.

Yours sincerely,

Alison M. Collins-Mrakas M.Sc., LLM
Manager, Research Ethics

Human Participants Research Protocol and Informed Consent Form

HUMAN PARTICIPANTS REVIEW SUB-COMMITTEE (HPRC)
Protocol Form

Who should complete this Protocol Form?
All faculty members (including contract, adjuncts, and seconded) who are conducting funded or un-funded, minimal or more than minimal risk* research that involves the use of human participants, must complete this Protocol Form. Students who are conducting underlined funded minimal or more than minimal risk research that involves the use of human participants must also complete this form. This includes all experiments, interviews, and participant observation. If you are a student and your research is non-funded AND minimal risk, please consult with your Department Chair's, Graduate Programme Director's or Faculty Dean's office to discuss the approval process for your research.

How long will the review process take?
The average time to process minimal risk protocols is approximately twenty working days from the date of receipt in the Office of Research Services (ORS). **INCOMPLETE OR ILLEGIBLE PROTOCOLS WILL BE RETURNED TO THE RESEARCHER, WHICH WILL DELAY THE PROCESS.**

Is there an electronic version of the Protocol Form?
The Protocol Form is available on the York Research website (www.research.yorku.ca) in either .pdf or web-based format. An electronic version of it can also be e-mailed upon request in either Word or WordPerfect. Alternatively, responses do not need to be completed on the Protocol Form, but can be completed on the researcher's own sheets.

Who can I contact if I have any questions?
Please contact the Coordinator, Research Ethics Review, Office of Research Ethics at ext.55201 or (yudum@yorku.ca).

*The HPRC uses the definition of minimal risk as outlined in the SSHRC/NSERC/CIHR *Tri-Council Policy Statement "Ethical Conduct for Research involving Humans"* (August 1998): "If potential subjects can reasonably be expected to regard the probability and magnitude of possible harms implied by participation in the research to be no greater than those encountered by the subject in those aspects of his or her everyday life that relate to the research then the research can be regarded as within the range of minimal risk" (p. 1.5). An expanded version of this definition is available from ORS upon request.

Please submit completed form and attachments (plus six copies) to:
Secretary, Human Participants Review Sub-Committee
Office of Research Ethics
309 York Lanes

Checklist:

❑   Original, plus six copies

❑   Form is signed

❑   Consent statement is attached (informed consent form, letter, or verbal statement)

PART A - GENERAL INFORMATION

A. Name of Principal Investigator(s): Jean Adams, Gareth Morgan, Ron Owston

B. Department and Home Faculty (or Research Centre/Institute):
Campus Mailing Address: Extension: E-mail:
Jean Adams – N323 SSB – York Campus   416 736 9078   jadams@schulich.yorku.ca
Gareth Morgan – N333 SSB – York Campus   ext 77915   morgan@imaginiz.com
Ron Owston – TEL 1029 – York Campus   416 736 5019   rowston@edu.torku.ca

C. Names of any other persons involved in the data collection:
Rita Hanesiak

D. Status of Principal Investigator:
    X   York Faculty Member
    ❑   Graduate Student
    ❑   Undergraduate Student
    ❑   Other

    If student, please provide course director's or supervisor's name:

E. Title of Research Project: Blended Learning for Soft Skills Development: Testing a four-level model integrating work and learning to maximize personal practice and job performance

F. Is this research defined:
    X   Minimal Risk
    ❑   Non-minimal Risk
              (Please see (*) footnote on first page for definition of minimal risk.)

G. Is this a revised version of a protocol previously reviewed by the HPRC?
    ❑   Yes
    X   No

    If yes, please explain:

H. Approximate dates for proposed study: Start: Aug 13, 2007 End: Dec 31, 2008

I. Is any anticipated funding for this project from internal (i.e., York University) sources?
    ❑   Yes
    X   No
    If yes, what is the funding source?:

J. Is any anticipated funding for this project from any external (i.e., outside York) sources?
    X   Yes
    ❑   No

    If yes, what is the funding agency and/or program?:

    An application for a CCL Research Grant (Adult Learning) has been approved.

PART B - RESEARCH INFORMATION

1. In layperson's terms, please provide a general and brief description of the research (e.g., hypotheses, goals and objectives, etc.).

The focus of this research study is to compare the learning impact/outcomes of four different blending learning strategies. The theoretical model guiding the work is the result of a four year action learning research study emerging from earlier dissertation work (Adams, 2004) where it was defined and operationalized and is now ready for a further stage of testing. The four hundred bank employees who will be invited to participate in the research will be randomly assigned to one of four parallel course offerings of the same e-learning course. Each course will be delivered using a different blending strategy to develop management soft skills (e.g. self-directed e-learning, a blend of classes and e-learning, a blend of coaching and e-learning, a blend of "stretch" action-learning projects and e-learning). Participants will use a personal case and skills assessment as the focus for the self-development course. At course launch, they will be given an overview of the program, technologies and expectations. Feedback will be gathered through surveys and interviews about various factors during the three-month course. Before-after skill development and learning styles assessment results for each learner and each of the four groups using different blending strategies will be evaluated using quantitative methods. At the end of the course, participants will also complete a one page confidential self-report assessment on what was learned (including qualitative / quantitative impacts resulting from actions taken on their personal cases), and personal observations on barriers and motivators for learning, including perspectives on belonging to learning communities.

The following hypotheses / propositions will be tested:

o Hypothesis / proposition #1: The tighter and more well-defined the links between learning and the job (i.e. moving from blended learning strategy level 1 to 4), the more likely participants are to report demonstrable impacts/positive outcomes on job performance.

o Hypothesis / proposition #2: The tighter and more well-defined the links between learning and the job (i.e. moving from blended learning strategy level 1 to 4), the more likely participants are to report learning motivators rather than barriers to learning.

o Hypothesis / proposition #3: The closer the match between individual learning styles and the blended strategy of the course delivery selected, the more likely participants are to report positive learning outcomes and impact on personal skill development.

2. State who the participant(s) will be (e.g., experimental subjects, interviewees, community members to be observed, etc.). Please provide details about the research subjects that are relevant to your particular research (number, age, sex, students, children, businesspeople, government employees, etc.). Also discuss the relationship of the researchers to the prospective subjects (e.g., teacher, parent, advisor, stranger, etc.).

The study will involve up to 400 Scotiabank employees across the organization who will be invited to join the program.. Since we are testing a blended learning framework in a workplace context it is particularly important to involves a cross-section of employees (age, sex, functional expertise, leanring styles, skill development needs, etc.). The participants will have no relationship with the researchers.

3. How will participants be recruited (e.g., snowball technique, random sampling, previously known to interviewer, telephone solicitation, etc.)?

Participants will be invited to join the program through corporate bulletins issued by the executive team.

4. Will you be offering inducements to participate (e.g., money, gift certificates, academic credit, etc.)?

❑ Yes
X No

If yes, please elaborate:

5. What exactly will be required of the participant(s) (e.g., answer a formal questionnaire, respond to interview questions, engage in a free-ranging discussion, undergo any medical procedures, etc.)? If applicable, please attach any research instruments (e.g., sample interview questions, questionnaires, etc.).

Participants will use a personal case and skills assessment as the focus for the self-development course. At course launch, they will be given an overview of the program, technologies and expectations. Feedback will be gathered through surveys and interviews about various factors during the three-month course. Before-after skill development and learning styles assessment results for each learner and each of the four groups using different blending strategies will be evaluated using quantitative methods. At the end of the course, participants will also complete a one page confidential self-report assessment on what was learned (including qualitative / quantitative impacts resulting from actions taken on their personal cases), and personal observations on barriers and motivators for learning, including perspectives on belonging to learning communities.

Participant data will be gathered as follows:

- Questionnaires: Key questions will be asked periodically to learn more about barriers and motivators in each of the four blending approaches. The data will be analyzed using qualitative analysis techniques for identifying trends and insights. Questions will include:
    - ○ *Before* the program begins: 1) Based on your previous experiences, what are the barriers to workplace learning for you? 2) Based on your previous experiences, what are the motivators for workplace learning for you?
    - ○ *Mid-point* in the program: 1) What barriers to learning have you encountered in this program? 2) What changes can be made to overcome them? 3) What is motivating you to learn in this program? 4) How can we build on these motivators to improve the program further?
    - ○ *After* the program completes: 1) Based on your experience in this program, what were the most significant barriers to learning? 2) Based on your experience in this program, what were the motivators? 3) If you were starting again, what would you do differently (if anything)? 4) What things in the program were done well? 5) What improvements would you suggest?
- Observation: Since aspects of community-based learning (e.g. online collaborative forums, learning teams) will be part of the learning support to varying degrees in the four blending strategies, the study provides an opportunity to observe aspects of community-based learning. Therefore, online forums will be observed and relevant data extracted for further analysis if appropriate.
- Interviews: To more specifically determine the influence of community-based learning (if any in this study), a random selection of participants from each of the four blending strategies will be contacted at the completion of the program and asked: "What influence, if any, did the community-based learning support provided in the program have on your learning? Please give specific examples to illustrate your response."

6. What, if any, are the risks to the participants?

Or,

   X   No risks:

7. What, if any, are the benefits to the participants?

Participants will benefit by improving personal soft-skills development and belonging to a learning community that will provide opportunities for networking and knowledge sharing.

Or,

   ❑   No benefits

8. Is there a possibility of commercialization of research findings? If so, would give rise to an apparent or actual or potential conflict of interest on the part of researchers, the University or sponsors?

  ❑ Yes

  X No   *If yes, please elaborate.*

9. *This section pertains to issues around informed consent. Before completing, please read "Important Statement Regarding Informed Consent" attached to the end of this form.*

    (a) Will you provide to the participants a full explanation of the research prior to their participation?

       X Yes

       ❑ No   *If no, please elaborate:*

    (b) Is substitute consent involved (e.g., children, youths under 18, incompetent adults, etc.)?

       ❑ Yes

       X No   *If yes, please elaborate:*

    (c) Is deception involved?

       ❑ Yes

       X No   *If yes, please elaborate (including issues around debriefing, if applicable):*

    (d) Will individuals remain anonymous?

       Please note that it is expected that participants remain anonymous unless participants explicitly have given their permission otherwise.

       X Yes

       ❑ No   *If no, please elaborate:*

    (e) Will the data be kept confidential?

Please note that it is expected that the data be kept confidential unless the participants explicitly have given their permission otherwise.

X Yes
❏ No   *If no, please elaborate:*

(f) How will informed consent be obtained? (please check one):

X Informed Consent Form (please attach draft version)

X Letter* (please attach draft version)

X Verbally* (please attach draft approximation of what participants will be verbally told)

* If informed consent is being obtained by letter or verbally, please provide a rationale regarding why an informed consent form is not being used.

10. Is there any additional information that you would like to add that may assist the HPRC in reviewing your protocol?

This ethics form is being submitted as one of final requirements for receiving funding from Canadian Council on Learning (CCL) - Adult Learning. Support from ORS with the submission of the application in March was greatly appreciated.

I have examined the guidelines and principles detailed above, and *the Senate Policy for the Ethics Review Process for Research Involving Human Participants*, and affirm that, to the best of my knowledge, this research conforms thereto. I hereby undertake to notify the Human Participants Review Committee if I make any major procedural changes involving the use of human participants on this project. I will also notify the Human Participants Review Committee if any unforeseen risks not specified in the research proposal appear. In such a case, the study will be suspended pending clarification.

_____   _____
Signature of Principal Investigator (PI)   Date

_____   _____
Signature of Faculty Advisor (if PI is a student)   Date

Item 9 - Important Statement Regarding Informed Consent

A. The HPRC has adopted the position that all human participants (e.g., interviewees, research subjects, community members, etc) have the right to be informed of:
- the nature of the research (hypotheses, goals and objectives, etc.);
- the research methodology to be used (e.g., medical procedures, questionnaires, participant observation, etc.);
- any risks or benefits;
- their right not to participate, not to answer any questions, and/or to terminate participation at anytime without prejudice (e.g., without academic penalty, withdrawal of remuneration, etc.)
- their right to anonymity and confidentiality;
- any other issues of which the participants should be aware that are relevant to specific protocols and research projects.

B. The HPRC recognizes that the manner the researcher uses to obtain the informed consent varies according to the nature of the research, status of the participants, and culturally-specific norms. Although the HPRC requires that the principles of informed consent (outlined in A. above) be met, it is very flexible in how this consent is obtained. The HPRC will accept any of the three methods outlined below:

1. Informed consent form: The traditional informed consent form is the standard for research involving human participants. This would detail the principles outlined in A. above, and require the participants' signatures.
2. Letter: Where the traditional informed consent form is not appropriate (e.g., interviews with artists or government officials, mass mailed questionnaires, etc.), the researcher may wish to seek permission through a letter inviting them to participate. This letter must nonetheless incorporate the principles of informed consent outlined in A. above.
3. Verbal statement: In some instances, where written communication is not feasible (children, illiterate adults, certain communities), researchers can relay the principles outlined in A. above verbally.

Although it is impossible to come up with *one* generic model that will suffice for every research endeavour, an Informed Consent Form Template is available for your review and assistance on the York Research website at: www.research.yorku.ca

C. The HPRC recognizes that researchers completing this protocol may not be at the stage of their research where they are able to provide this information. Nonetheless, the HPRC requires that a "best effort" draft be attached to this protocol. **PROTOCOLS THAT DO NOT ATTACH THIS INFORMATION WILL BE RETURNED TO THE RESEARCHER.**

ATTACHMENT 1 – SURVEYS, QUESTIONNAIRES, ASSESSMENT INSTRUMENTS

The following materials will be used to support the research study.

a) Assessment instruments:

Final decisions on the assessment tools that will be used will be made between August 2007 and March 2008. The aim is to use existing Scotiabank competence tools. These are confidential and have not been included in this application.

b) Sample of Questionnaires:

Key questions will be asked periodically to learn more about barriers and motivators in each of the four blending approaches. The data will be analyzed using qualitative analysis techniques for identifying trends and insights. Questions will include:

- *Before* the program begins: 1) Based on your previous experiences, what are the barriers to workplace learning for you? 2) Based on your previous experiences, what are the motivators for workplace learning for you?
- *Mid-point* in the program: 1) What barriers to learning have you encountered in this program? 2) What changes can be made to overcome them? 3) What is motivating you to learn in this program? 4) How can we build on these motivators to improve the program further?
- *After* the program completes: 1) Based on your experience in this program, what were the most significant barriers to learning? 2) Based on your experience in this program, what were the motivators? 3) If you were starting again, what would you do differently (if anything)? 4) What things in the program were done well? 5) What improvements would you suggest?

c) Sample of Interview questions:

To more specifically determine the influence of community-based learning (if any in this study), a random selection of participants from each of the four blending strategies will be contacted at the completion of the program and asked:

- "What influence, if any, did the community-based learning support provided in the program have on your learning? Please give specific examples to illustrate your response."

ATTACHMENT 2 – INFORMED CONSENT FORM

Date: July 14, 2007.

Study Name: Blended Learning for Soft Skills Development: Testing a four-level model integrating work and learning to maximize personal practice and job performance

Researchers:
Principal Investigator: Jean Adams

Co-Investigators: Rita Hanesiak
Gareth Morgan
Ron Owston

Sponsors: Canadian Council on Learning
Schulich School of Business (York University)
Institute for Research on Learning Technologies (IRLT)
Scotiabank

Purpose of the Research: To explore the learning impacts/outcomes of a course using different blending strategies for developing soft skills and improved job performance.

What You Will Be Asked to Do in the Research: You will be asked to a) answer interview questions about the nature of your personal learning experience; b) participate in surveys and questionnaires periodically throughout the program; c) submit work that will be reviewed as part of the research project; d) record thoughts and ideas in an online discussion board that will be monitored by the researchers.

Risks and Discomforts: We do not foresee any risks or discomfort from your participation in the research.

Benefits of the Research and Benefits to You: Improvements to our understanding about the impact and learning outcomes resulting from of different blended learning strategies will be gained through your involvement and participation in this research project.

Voluntary Participation: Your participation in the study is completely voluntary and you may choose to stop participating at any time.

Withdrawal from the Study: You can stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any other group associated with this project.

Confidentiality: All information you supply during the research will be held in confidence and unless you specifically indicate your consent, your name will not appear in any report or publication of the research. Your data will be safely stored in a locked facility and only research

staff will have access to this information. Confidentiality will be provided to the fullest extent possible by law.

Questions About the Research? If you have questions about the research in general or about your role in the study, please feel free to contact Dr. Jean Adams either by telephone at (416) 736-2100, extension 77962 or by email jadams@schulich.yorku.ca. This research has been reviewed by the Human Participants in Review Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact Ms. Alison Collins-Mrakas, Manager, Research Ethics, 309 York Lanes, York University (telephone 416-736-5914 or e-mail acollins@yorku.ca).

Legal Rights and Signatures:

I, _____, consent to participate in "Blended Learning for Soft Skills Development" conducted by Dr. Jean Adams (Principal Investigator). I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature_____ **Date**_____
Participant

Signature_____ **Date**_____
Principal Investigator

ATTACHMENT 3 – INFORMED CONSENT
(This will be posted on the website for easy reference for participants)

Date:	July 14, 2006.

Study Name: Blended Learning for Soft Skills Development: Testing a four-level model integrating work and learning to maximize personal practice and job performance

Researchers:

Principal Investigator: Jean Adams

Co-Investigators: Rita Hanesiak
Gareth Morgan
Ron Owston

Sponsors: Canadian Council on Learning
Schulich School of Business (York University)
Institute for Research on Learning Technologies (IRLT)
Scotiabank

Purpose of the Research: To explore the learning impacts/outcomes of a course using different blending strategies for developing soft skills and improved job performance.

What You Will Be Asked to Do in the Research: You will be asked to a) answer interview questions about the nature of your personal learning experience; b) participate in surveys and questionnaires periodically throughout the program; c) submit work that will be reviewed as part of the research project; d) record thoughts and ideas in an online discussion board that will be monitored by the researchers.

Risks and Discomforts: We do not foresee any risks or discomfort from your participation in the research.

Benefits of the Research and Benefits to You: Improvements to our understanding about the impact and learning outcomes resulting from of different blended learning strategies will be gained through your involvement and participation in this research project.

Voluntary Participation: Your participation in the study is completely voluntary and you may choose to stop participating at any time.

Withdrawal from the Study: You can stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any other group associated with this project.

Confidentiality: All information you supply during the research will be held in confidence and

- 11 -
Human Participants Review Sub-Committee
Protocol Form

unless you specifically indicate your consent, your name will not appear in any report or publication of the research. Your data will be safely stored in a locked facility and only research staff will have access to this information. Confidentiality will be provided to the fullest extent possible by law.

Questions About the Research? If you have questions about the research in general or about your role in the study, please feel free to contact Dr. Jean Adams either by telephone at (416) 736-2100, extension 77962 or by email jadams@schulich.yorku.ca. This research has been reviewed by the Human Participants in Review Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact Ms. Alison Collins-Mrakas, Manager, Research Ethics, 309 York Lanes, York University (telephone 416-736-5914 or e-mail acollins@yorku.ca).

Legal Rights and Signatures:

I, _____, consent to participate in "Blended Learning for Soft Skills Development" conducted by Dr. Jean Adams (Principal Investigator). I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature_____   **Date**_____
Participant

Signature_____   **Date**_____
Principal Investigator

APPENDIX B: Invitation Letter

Subject: **Invitation to participate in an Adult Learning Research Project**

We are pleased to invite you to participate in a 2008 Global Performance and Learning Office initiative in partnership with York University's Schulich School of Business and the Canadian Council on Learning (CCL). Our project is one of eleven projects designed to explore leading edge approaches to learning.

Because of your interest in personal development and learning, we're eager to have you join our project. As a participant, you will be randomly assigned to one of four parallel research groups scheduled during April and May 2008. Your feedback on different aspects of the project will help to shape what we do in the future, as well as contribute valuable insights on what works and what doesn't in a learning environment.

The time commitment is not expected to exceed an average of 30 mins./week over a 6 week interval. Personal information and learning outcomes are confidential. Participation is voluntary. You can select out at any time if you wish. Outcomes at an organizational level only will be shared with those who participate and our management team.

To register or to request more information, please go to the following website:

http://www.yorku.ca/surveys/survey.php?sid=370

To learn more about the project, please visit the project website at:

http://www.yorku.ca/irlt/blended/index.html

Scotiabank is proud of our commitment to employee development and learning. The findings from this research project will put us at the forefront of this emerging field. We strongly support this project and encourage you to consider lending your support by agreeing to participate.

Sincerely,

[Name]

APPENDIX C: Demographic Survey

1. Please enter your first name.

[   ]

2. Please indicate your last name.

[   ]

3. Your Business Line is:

[▼]

4. Please indicate your department.

[   ]

5. Please indicate your job level.

[▼]

6. How long have you worked at Scotiabank?

☐ Less than 6 months

☐ 6 months - less than 1 year

☐ 1 year - less than 3 years

☐ 3 years to less than 5 years

☐ Five years or more

7. Your email address is:

[   ]

8. Please enter your work address.

[   ]

9. Please enter your work phone number with area code.

[   ]

10. Are you willing to join this research project? (All information will be kept confidential and you can leave the project at any time if you wish)

☐ No ☐ Yes

11. Would you like someone to contact you with more information about the project?

☐ No ☐ Yes

Participant Background Survey   1

109

12. If you would like someone to contact you, please provide the question or topic of your inquiry below:

13. Are you registered for a Scotiabank course in April or May 2008?

14. If you are taking 'Coaching Skills for Leaders' in April May, please indicate the start date.

15. If you are taking 'Crucial Conversations' in April / May, please indicate the start date.

16. If you are taking 'Transition to People Management' in April / May, please indicate the start date.

17. If the course you are taking in April-May period is not listed in the previous question, please provide the course name and start date here:

18. Which of these Scotiabank courses have you taken most recently?

19. Please record the "username" you would like to use to access online content during the project (e.g. your first initial and last name).

Also be sure to write it somewhere for future reference and use - thanks.

Finish

Quit Survey - Do Not Save Answers

APPENDIX D: Learning Styles/Preferences Survey

Survey Statements	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I can remember best about a subject by listening to a lecture that includes information, explanations and discussion.					
I prefer to see information written on a chalkboard and supplemented by visual aids and assigned readings.					
I prefer to use posters, models, or actual practice and other activities in class.					
I am skilful with and enjoy developing and making graphs and charts.					
I can tell if sounds match when presented with pairs of sounds.					
I can remember best by writing things down several times.					
I learn to spell better by repeating words out loud than by writing the words on paper.					
I can understand a news article better by reading about it in the newspaper than by listening to a report about it on the radio.					
I chew gum, smoke, or snack while studying.					
I am good at working and solving jigsaw puzzles and mazes.					
I grip objects in my hands during learning periods.					
I prefer listening to the news on the radio rather than reading about it in the newspaper.					

APPENDIX E: Barriers and Motivators for Learning Survey

Based on your previous experiences, what BARRIERS to personal learning have you encountered? (e.g. What made you want to give up and stop learning in the past?)

	No Barrier	Minor Barrier	Major Barrier
1. Problems with technology	☐	☐	☐
2. Feeling isolated	☐	☐	☐
3. Information overload	☐	☐	☐
4. Feeling anxious about taking tests	☐	☐	☐
5. Insufficient feedback	☐	☐	☐
6. Vague instructions	☐	☐	☐
7. Lack of self-discipline	☐	☐	☐
8. Time-management	☐	☐	☐
9. Lack of experience with the course tools used	☐	☐	☐
10. Lack of Internet skills	☐	☐	☐
11. Limited access to the Internet	☐	☐	☐

12. Other barriers not on this list? Please record them below.

13. Please elaborate on the barriers to personal learning you identified above if you wish:

Based on your previous experiences, what MOTIVATORS for personal learning have you encountered? (e.g. What has made your experience positive and made you want to get involved in learning in the past?)

	No Motivator	Minor Motivator	Major Motivator
14. Flexibility in time	☐	☐	☐
15. Flexibility in location	☐	☐	☐
16. Interactions with others	☐	☐	☐
17. Sense of community	☐	☐	☐
18. Timely feedback from facilitators	☐	☐	☐
19. Confidentiality	☐	☐	☐
20. Engaging design	☐	☐	☐
21. Relevant content	☐	☐	☐
22. Being able to work through course materials at my own pace	☐	☐	☐
23. Fits your style of learning	☐	☐	☐

24. Other motivators not on this list? Please provide them below.

25. Please elaborate on the motivators to personal learning you identified above if you wish:

26. If you would like to provide more details about your past experiences, please provide your contact information below and indicate whether you would like to do so by email, or phone (Your involvement is voluntary, and all responses are confidential):

Barriers and Motivators for Learning Survey 2

APPENDIX F: End Results and Feedback Survey

1. Please provide your first name:

[   ]

2. Please provide your last name:

[   ]

3. To which of the following demographic groups do you belong?

☐ Baby boomers (over 45 years old)

☐ Generation X (30 to 45 years old)

☐ Generation Y (under 30 years old)

4. To which Research Group do you belong?

☐ RG1

☐ RG2

☐ RG3

☐ RG4

☐ Not sure

5. In about 25 words or so, please describe the business application you selected at the beginning of the research project:

[   ]

6. List your key learnings or take-aways gained during the six-week research project:

[   ]

7. Please give examples of how you have been applying what you learned on the job and the difference it is making:

[   ]

8. How much time did you spend on the project?

Note: The estimated commitment was 20 minutes a week, or 2 hours in total over the six week period. For RG2, please include the time spent on the Scotiabank course separately in the following question.

☐ Less than 1 hour

☐ Between 1 and 3 hours

☐ More than 3 and less than 6 hours

☐ More than 6 and less than 10 hours

☐ More than 10 hours

End Results and Feedback Survey 1

9. For RG2, how much time did you spend on the Scotiabank course you were registered for during the research period?

☐ less than 4 hours

☐ between 4 and 8 hours

☐ more than 8 hours

10. Please give a rough estimate the value derived from your learning activity for yourself and/or Scotiabank? For example:

- Did you save time by approaching a situation in a new way? Estimated time saving?
- Did you or those you were coaching add new revenue, or avoid a revenue loss? Estimated revenue gained or saved?
- Did you avoid a potential problem? Can you estimate the monetary value of the positive impact?

[   ]

11. Return on Learning (ROL) is a way to report the new value created and benefits derived from your learning versus the costs of participating.

Based on your responses to questions 8, 9 and 10, how would you rate your Return on Learning during the program?

☐ I created a lot more new value for myself and the company than the costs invested!

☐ The new value created is slightly more than the costs

☐ I broke even – the costs and benefits were about the same

☐ The costs slightly outweighed the benefits to me and the company

☐ The costs greatly exceeded the benefits for me and the company

12. In your opinion, what is your primary learning preference?

☐ Auditory – I learn best by hearing ideas

☐ Visual – I learn best by seeing images and reading

☐ Kinaesthetic – I learn best by doing things and getting involved in activities

☐ Not sure

13. In your opinion, what is your second favourite learning preference?

☐ Auditory – I learn best by hearing ideas

☐ Visual – I learn best by seeing images and reading

☐ Kinaesthetic – I learn best by doing things and getting involved in activities

☐ Not sure

14. In your opinion, what is your least preferred learning preference?

☐ Auditory – I learn best by hearing ideas

☐ Visual – I learn best by seeing images and reading

☐ Kinaesthetic – I learn best by doing things and getting involved in activities

☐ Not sure

15. In this research we randomly assigned everyone to one of four different research groups using four different approaches for delivering the same learning.

If you would have had a choice, which of the following would you have preferred?

☐ RG1 – Job focused learning using self-directed online materials in a self-directed manner without obligations to go to class, or participate in any collaborative learning activities

☐ RG2 – Classroom course with online learning as a pre-course assignment, access to content after the course, and the option to participate in a post-course study team

☐ RG 3 – Job focused learning using self-directed online materials with mandatory participation on a study team

☐ RG4 – Project or problem-based learning using self-directed online materials with mandatory participation on a project support team where team members offer practical advice and suggestions

☐ None of the above (Please provide details below)

16. What is the reason for your choice in question 15?

[   ]

The research was designed in a highly flexible manner to provide meaningful research data on the choices made. For example, we didn't grade your work, or have rewards or penalties for participation as is the case in most formal courses.

If we were to do the study again, rate your level of interest in the following options that could provide more structure:

	Extremely High	Very High	High	Moderate	Slight	None
17. Personal learning contract detailing deliverables	☐	☐	☐	☐	☐	☐
18. Hand-in assignments with specific due dates	☐	☐	☐	☐	☐	☐
19. Graded assignments with feedback	☐	☐	☐	☐	☐	☐
20. Set times for real-time study team interaction (e.g. conference calls or live chats)	☐	☐	☐	☐	☐	☐
21. Mandate from your manager to deliver quantifiable value	☐	☐	☐	☐	☐	☐
22. Mandate from your one-up manager to deliver quantifiable value	☐	☐	☐	☐	☐	☐
23. Mandate from your VP to deliver quantifiable value	☐	☐	☐	☐	☐	☐
24. ROL (return on learning) performance used as a basis for advancement	☐	☐	☐	☐	☐	☐
25. ROL (return on learning) performance used as a basis for incentive bonus	☐	☐	☐	☐	☐	☐
26. ROL (return on learning) performance used as a basis for a course completion certificate that would be added to your learning portfolio file	☐	☐	☐	☐	☐	☐
27. ROL (return on learning) performance used as a basis for full or partial credit towards a college or university course	☐	☐	☐	☐	☐	☐
28. Earn "ROL Reward Points" for value created for the organization as a basis for obtaining goods and services	☐	☐	☐	☐	☐	☐

29. Please provide more details or ideas about questions 17 to 28 if you wish:

[   ]

End Results and Feedback Survey 3

30. Would you like formal recognition for your participation in this project?

Select all that apply.

☐ Yes – I would like a certificate signed by an executive

☐ Yes – I would like a note sent to my manager

☐ Other – please contact me for more details

☐ No – I'm not interested in formal recognition

31. Would you like to continue to access the NewMindsets online content at no cost until the end of December 2008?

☐ No

☐ Yes

32. I'm looking for a small number of participants interested in continuing the research project in a modest manner until the end of the year. Does this interest you?

☐ Yes

☐ No

☐ Maybe

If you are interested in continuing the project, on your own time, which of the following learning activities would be of interest?

Please select check all that apply.

	Yes	No	Maybe
33. Receive a monthly email with link to learning content	☐	☐	☐
34. Receive a monthly email with a link to learning content and a follow-up email a week later about how the idea was applied to your job	☐	☐	☐
35. Join a 20 minute study team on a voice conference call with a facilitator	☐	☐	☐
36. Join a 20-minute study team e-room forum (voice and content) with a facilitator	☐	☐	☐
37. Join a study team discussion board on a specific topic with a moderator	☐	☐	☐
38. Select a specific work-related project as the learning focus and receive targeted content to meet your personal learning needs	☐	☐	☐
39. Select a specific work-related project as the learning focus, receive targeted content to meet your personal learning needs and participate in occasional 20-minute one-on-one mentored discussions	☐	☐	☐
40. Select a specific work-related project as the learning focus, receive targeted content to meet your personal learning needs and participate in occasional 20-minute small group mentored team discussions	☐	☐	☐

41. Other comments about the research and your participation:

[   ]

## APPENDIX G: Preliminary Baseline Data Report

Participant Demographics

Most of the participants who joined the study have been Scotiabank for five years or more. A breakdown of the duration of employment for the participants involved in the research is provided below:

| Duration	Participants
Less than 6 months	.5
6 months – 1 year	.5
1 – 3 years	3
3 – 5 years	4
Five years or more	92

Note. The values represent percentage of participants.

Employees worldwide decided to join the study. Below you will see a figure that indicates the proportion of participants from different areas of the world:
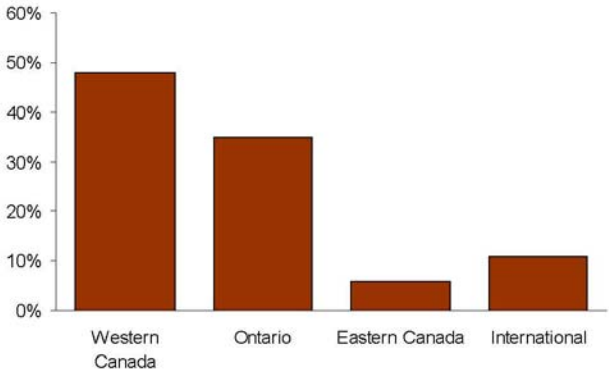
Soft-skills Assessment Pretest Results: Average of All Respondents

The survey asks questions about key competencies and results are categorized as "Less Developed", "Secondary Competencies", and "Primary Competencies". No average score fell into the "Less Developed" category. Three competency categories had average scores that were indicative of Secondary Competencies: Relationship Building, Self-Development, and Coaching. These are the competencies that fall to the left of the light green line.
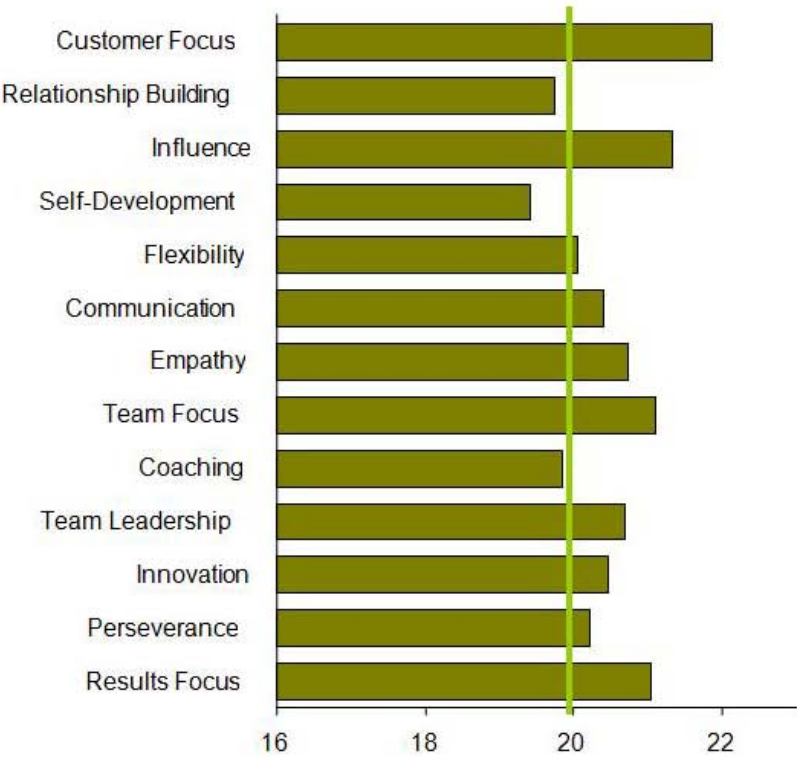
Learning Preferences Pretest Results: Average of All Respondents

Participants filled out a Learning Preferences Survey. The results for the entire group are given below, with scores for each type of learning indicated by job level. Further, the overall average for each learning preference is indicated by a dotted line through each figure. None of the average scores at each job level were meaningfully different. The scores for Auditory Learning preferences overall are higher than those for Visual learning preferences.
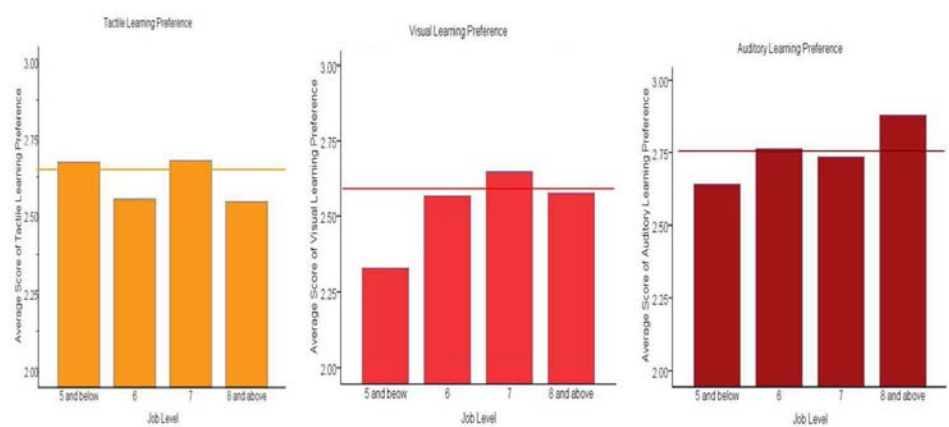
Barriers and Motivators for Learning Pretest Results: Average of All Respondents

Barriers to learning

The results for the entire group are given below, with average scores for each learning barrier (from 0 to 2). The survey asks questions about barriers and indicators are categorized as *no barrier*, *minor barrier*, and *major barrier*. No average score fell into the "major barrier" category. Three learning barriers had average scores that were indicative of "minor barrier": *information overload*, *vague instruction*, and *time management*.
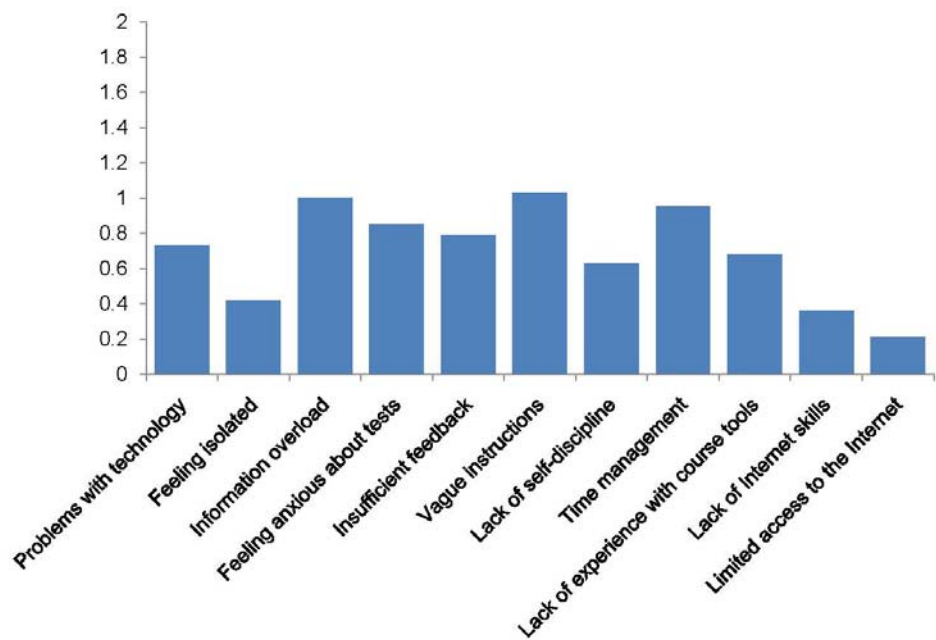
Motivators for learning

The results for the entire group are given below, with average scores for each motivator (from 0 to 2). The survey asks questions about motivators and indicators are categorized as *no motivator*, *minor motivator*, and *major motivator*. No average score fell into the "major motivator" category. However, two motivators for learning had average scores in between of "major motivator" and "minor motivator": *relevant content* and *fits your style of learning*.
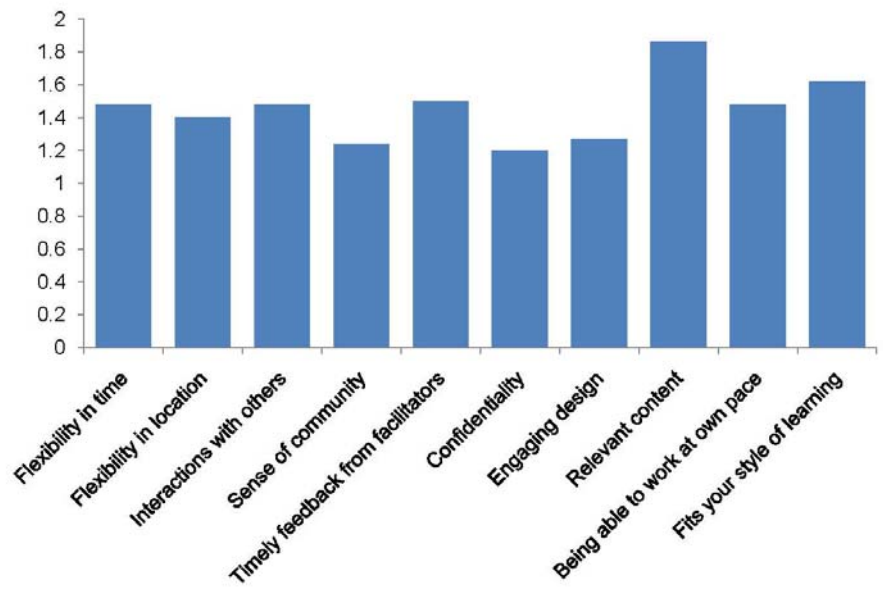
APPENDIX H: Sample of Post Research Individual Feedback

Blended Learning for Soft-skills Development (BLSD) Research Project

Personal Feedback Report (2008)

Dear [Name],

Your before-after responses to the Learning Preferences and the Soft-Skills Assessment questionnaires are summarized below. Although there are many interpretations that can be made, we have refrained from doing so and instead invite you to consider what the data means to you. If you wish to share your ideas, please contact one of us with your insights. We'd welcome your input!

Our interpretation of the results will be reported at a macro level across the research project in the final report that will be distributed to all participants by the end of the year. Once again, thank-you for supporting our work.

1. Your Learning Style / Preferences Results

Everybody learns best in certain ways. Although this can be influenced by environment, time, and personal situations, in general everyone has a default way of learning that will garner optimal results.

We have indicated your learning preferences in order of strongest to weakest as taken from the questionnaires before and after the research. You may be interested to compare this against the learning style you indicated to be your strongest to weakest, as noted to the right.

Learning Style	Before	After	You consider yourself a...
Primary preference	Kinesthetic	Kinesthetic	Visual – Learn best by seeing images and reading
Secondary preference	Auditory	Auditory	Kinesthetic Learner – Learn best by getting involved
Least preferred	Visual	Visual	Auditory – Learn best by hearing ideas

*Note: The learning preferences were tallied using half of the questionnaire before the project and half after. Although the questions were slightly different, statistically the results should be consistent. Instances where you scored the same on two or more styles indicate that you will likely learn as effectively from one method as you will from the other(s).

2. Your Soft-Skills Assessment Results

This section indicates your scores on the Scotiabank Soft-Skills Assessment from before and after the research project. It is common for scores to fluctuate somewhat over time as you learn and development new skills.

Area Criteria	After	Before	Difference	Comments based on "after" scores:
Results Focus	19	21	-2	Primary competency
Perseverance	21	21	0	Primary competency
Innovation	21	19	+2	Primary competency
Team Leadership	20	17	+3	Secondary to primary competency
Coaching	18	14	+4	Secondary competency
Team Focus	19	19	0	Primary competency
Empathy	20	18	+2	Secondary to primary competency
Communication	20	16	+4	Secondary to primary competency
Flexibility	21	18	+3	Secondary to primary competency
Self Development	21	20	+1	Primary competency
Influence	22	20	+2	Primary competency
Relationship Building	21	22	-1	Primary competency
Customer Focus	22	20	+2	Primary competency

➡ **Primary (19-24)** -You are comfortable with and demonstrate strong tendencies in these competencies. They come most naturally to you, you will use them consistently

➡ **Secondary (13-18)** - You demonstrate these competencies sometimes; they may be demonstrated less consistently and be less developed than Primary competencies

➡ **Less Developed (0-12)** You tend to use these competencies less and are more hesitant to use them

APPENDIX I: Detailed Instructions for Each Research Group

DETAILED INSTRUCTIONS FOR RESEARCH GROUP 1:

OVERVIEW

Background and general information …

As you may already be aware, there are four different blended approaches being offered to different groups of Scotiabank employees at the same time. At the end of the study we'll report the findings to everyone involved. In the meantime, we appreciate your involvement and will welcome your feedback and questions as we proceed.

Research shows that adult learners, unlike children who generally need more structure, thrive in experiential, problem-based learning approaches where personal interests drive exploration and competence development. That is the approach being taken in this adult learning project. To start the program, you will be asked to select a work-related problem or issue as the focus for personal learning. This is a critical step. It gives a focus to what you want to achieve, and will enable you to check back at the end of the 6 week project to self-evaluate your learning and personal progress. More guidance will be provided on this later; however, you may want to give this some thought before we begin in April.

The research group to which you have been assigned will be experiencing a very flexible, highly customized approach to self-directed learning. *Each participant in this research group is completely in control of his or her own learning*. You do <u>not</u> need to attend classes; you do <u>not</u> need to pass any tests; you do <u>not</u> have to join pre-determined collaborative sessions. Instead, you can determine what works best for you. So, if you want to participate in online discussion, please do so. There is, however, no formal obligation to do so.

More details about specific learning activities and events will be posted shortly. *Please check this site weekly for announcements and updates*.

 Thank-you for joining our research project ...
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STEP 1: CREATE A FOCUS FOR PERSONAL LEARNING

Write a short description of a problem or personal challenge you will be facing during the April-May period to which you will be able to apply what you learn and make a positive difference.

Start by outlining the problem or personal challenge, your goals or desired outcome, and the things you want to learn to help you accomplish your goals.

Then think about how you will evaluate success in a way that can be clearly demonstrated to others.

It is ideal to select a robust problem or challenge to make it worth the time and effort you will be investing

STEP 2: SPEND 20 MINUTES A WEEK ONLINE FOR LEARNING

Try to schedule a 10 to 20 minute period for personal learning on NewMindsets each week of this program.

Get off to an easy start by simply clicking each of the titles and read the front screen. Click the back arrow to return.

Then spend time each week on the item(s) that are of most interest.

IMPORTANT - *Don't try to cover everything. Instead, apply what you're learning directly to your project or scenario and record your progress in personal notes as you go.*

STEP 3: APPLY YOUR LEARNING TO YOUR JOB

With the content you learned in your 20-minute time spent online in mind, apply the ideas to your daily work activities and practices. In other words, *learn while you're working!*

You may want to keep a personal log or learning journal to capture the key insights as you go. Or, exchange ideas with others in the research project or in your workgroup to benefit even more.

STEP 4: ASSESS YOUR LEARNING OUTCOMES & PERSONAL PROGRESS

During the week of June 2nd, an End Results & Feedback survey will be sent to you by email. During the first week in June, you'll also be asked to complete the Learning Preferences, Soft-skills Competence, and Motivators & Barriers questionnaires to wrap up the research project.

Personal feedback will be sent to you in July, and a preliminary project report will likely be available by September.

On behalf of my Research Team and Scotiabank, I'd like to thank you for participating in this research project.

DETAILED INSTRUCTIONS FOR RESEARCH GROUP 2:

OVERVIEW:

As you may already be aware, there are four different blended approaches being offered to different groups of Scotiabank employees at the same time. At the end of the study we'll report

the findings to everyone involved. In the meantime, we appreciate your involvement and will welcome your feedback and questions as we proceed.

Research shows that adult learners, unlike children who generally need more structure, thrive in experiential, problem-based learning approaches where personal interests drive exploration and competence development. That is the approach being taken in this adult learning project. To start the program, you will be asked to select a work-related problem or issue as the focus for personal learning. This is a critical step. It gives a focus to what you want to achieve, and will enable you to check back at the end of the 6 week project to self-evaluate your learning and personal progress. More guidance will be provided on this later; however, you may want to give this some thought before we begin in April.

The research group to which you have been assigned will be experiencing a very flexible, highly customized approach to self-directed learning. *Each participant in this research group is taking a Scotiabank course in the April-May period.* As part of this research project, you will be provided with supplementary online materials and collaborative discussion opportunities on this site which may extend some of the things you cover in the Scotiabank course. You will also be asked to complete a short pre-course and post-course assignment to encourage you to apply your learning to your job.
More details about specific learning activities and events will be posted shortly. *Please check this site weekly for announcements and updates***.**

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STEP 1: CREATE A FOCUS FOR PERSONAL LEARNING

Write a short description of a problem or personal challenge you will be facing during the April-May period to which you will be able to apply what you learn and make a positive difference.
Start by outlining the problem or personal challenge, your goals or desired outcome, and the things you want to learn to help you accomplish your goals.
Then think about how you will evaluate success in a way that can be clearly demonstrated to others.
It is ideal to select a robust problem or challenge to make it worth the time and effort you will be investing

STEP 2: COMPLETE THIS ASSIGNMENT BEFORE ATTENDING YOUR SCOTIABANK COURSE

Spend no more than 5-10 minutes recording THREE key statements and/or questions that best summarize important elements of what you want to learn to help you achieve the goals you set in the problem or personal challenge described in step 1 above.
... OR ....
If you have already completed the course, please summarize THREE things that you learned and want to explore further during the research period. *Please submit your work online for future reference.*
In the post-course assignment, you will using these ideas as the framework for summarizing the new things you learned that are relevant for you and how they can be applied to maximize your on-the-job impact.

STEP 3: SPEND 20 MINUTES A WEEK ONLINE FOR LEARNING

Try to schedule a 10 to 20 minute period for personal learning on NewMindsets each week of this program.
Get off to an easy start by simply clicking each of the titles and read the front screen. Click the back arrow to return.
Then spend time each week on the item(s) that are of most interest.
IMPORTANT - *Don't try to cover everything. Instead, apply what you're learning directly to your project or scenario and record your progress in personal notes as you go*.

STEP 4: APPLY YOUR LEARNING TO YOUR JOB

With the content you learned in your 20-minute time spent online in mind, apply the ideas to your daily work activities and practices. In other words, *learn while you're working!*
You may want to keep a personal log or learning journal to capture the key insights as you go. Or, exchange ideas with others in the research project or in your workgroup to benefit even more …

STEP 5: COMPLETE THIS ASSIGNMENT AFTER ATTENDING YOUR SCOTIABANK COURSE

Spend no more than 10-15 minutes filling in details about what you have learned in your Scotiabank course and online the NewMindsets website using the three key statements and/or questions as the framework
The key is to summarize the new things that you've learned that are particularly relevant for you and the work you're doing, as well as how these new ideas and skills can be applied to maximize your on-the-job impact. *Please submit your work online for future reference.*

STEP 6: ASSESS YOUR LEARNING OUTCOMES & PERSONAL PROGRESS

During the week of June 2nd, an End Results & Feedback survey will be sent to you by email. During the first week in June, you'll also be asked to complete the Learning Preferences, Soft-skills Competence, and Motivators & Barriers questionnaires to wrap up the research project.
Personal feedback will be sent to you in July, and a preliminary project report will likely be available by September.
On behalf of my Research Team and Scotiabank, I'd like to thank you for participating in this research project.

DETAILED INSTRUCTIONS FOR RESEARCH GROUP 3:

OVERVIEW:

As you may already be aware, there are four different blended approaches being offered to different groups of Scotiabank employees at the same time. At the end of the study we'll report the findings to everyone involved. In the meantime, we appreciate your involvement and will welcome your feedback and questions as we proceed.

Research shows that adult learners, unlike children who generally need more structure, thrive in experiential, problem-based learning approaches where personal interests drive exploration and competence development. That is the approach being taken in this adult learning project. To start the program, you will be asked to select a work-related problem or issue as the focus for personal learning. This is a critical step. It gives a focus to what you want to achieve, and will enable you to check back at the end of the 6 week project to self-evaluate your learning and personal progress. More guidance will be provided on this later; however, you may want to give this some thought before we begin in April.

The research group to which you have been assigned will be experiencing a very flexible, highly customized approach to self-directed learning. *Each participant in this research group will be assigned to a small mentored study group that will meet for short (20 minute) conference calls, or facilitated online forums occasionally during the six-week research project.* The aim is foster collaborative learning by building on different experiences and backgrounds.
More details about specific learning activities and events will be posted shortly. *Please check this site weekly for announcements and updates*.

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STEP 1: CREATE A FOCUS FOR PERSONAL LEARNING

Write a short description of a problem or personal challenge you will be facing during the April-May period to which you will be able to apply what you learn and make a positive difference.
Start by outlining the problem or personal challenge, your goals or desired outcome, and the things you want to learn to help you accomplish your goals. *It is ideal to select a robust problem or challenge to make it worth the time and effort you will be investing*
Then think about how you will evaluate success in a way that can be clearly demonstrated to others.
These problems or personal challenges will be discussed briefly at your first mentored study team session. More details on dates, time, agenda will be available soon ...

STEP 2: SPEND 20 MINUTES A WEEK ONLINE FOR LEARNING

Try to schedule a 10 to 20 minute period for personal learning on NewMindsets each week of this program.
Get off to an easy start by simply clicking each of the titles and read the front screen. Click the back arrow to return.
Then spend time each week on the item(s) that are of most interest.
IMPORTANT - *Don't try to cover everything. Instead, apply what you're learning directly to your project or scenario and record your progress in personal notes as you go*.

STEP 3: APPLY YOUR LEARNING TO YOUR JOB

With the content you learned in your 20-minute time spent online in mind, apply the ideas to your daily work activities and practices. In other words, *learn while you're working!*
You may want to keep a personal log or learning journal to capture the key insights as you go. Or, exchange ideas with others in the research project or in your workgroup to benefit even more …

STEP 4: PARTICIPATE IN THE COLLABORATIVE LEARNING ACTIVITIES FOR YOUR GROUP

The aim is to make collaboration as easy as possible to get to know a few others in the research project and also gain benefits from working together. Therefore, we are recommending the use of technologies you know rather than exploring new collaborative products on the market.
Choices for collaboration are completely up to the team. You can use email, private discussion boards on Moodle, telephone and/or team conference calls using a Scotiabank bridge.

Suggested weekly collaborative activities are provided below:

 Week 2 Activity – April 21-25

Spend 15 minutes online learning. Split yourselves into TWO groups alphabetically by last name (e.g. Two groups of 3; or, one of three 3 and another of 2 people if there are five people in your group). Take 5 minutes to share one thing you learned in weeks 1 & 2 by email with the others, and mention how you are applying it to your job.

Week 3 Activity – April 28-May 2
Spend 10-15 minutes online learning. Take 5 to 10 minutes to join a Moodle discussion forum private to your Learning Team where each person contributes ONE thing you learned this week and how you are applying it to your job. Comment on two other postings in your group so everyone gets some feedback. Research Team members will also join in this discussion where appropriate.

Week 4 Activity – May 5-9
Spend 15-20 minutes online learning.
Team Leader will be contacting people to see if there is an interest in coordinating a team conference call in weeks 5 and/or 6. If there is, please contact me for more details.

Week 5 Activity – May 12-16
Spend 10-15 minutes online learning. Take 5-10 minutes to collaboration in one of the following ways:
Online Option – In a group chat or discussion forum private to the team using Moodle, post a question related to the learning focus where you want input. Others respond online offering suggestions and options. Research Team members will contribute when appropriate.
Phone Option – In a teleconference call have each person spend 1-2 minutes each to cover one thing learned, and how it is being applied to the job. A research team member can be invited to join your call if you wish.

Week 6 Activity – May 20-24
Take 5-10 minutes for collaboration to wrap-up the research project. Share one or two things that you learned in the 6 week period that you found helpful and how you are applying these ideas to your job. If you do this online, comment on two other postings.

STEP 5: ASSESS YOUR LEARNING OUTCOMES & PERSONAL PROGRESS

During the week of June 2nd, an End Results & Feedback survey will be sent to you by email. During the first week in June, you'll also be asked to complete the Learning Preferences, Soft-skills Competence, and Motivators & Barriers questionnaires to wrap up the research porject.
Personal feedback will be sent to you in July, and a preliminary project report will likely be available by September.
On behalf of my Research Team and Scotiabank, I'd like to thank you for participating in this research project.

DETAILED INSTRUCTIONS FOR RESEARCH GROUP 4:

OVERVIEW:

As you may already be aware, there are four different blended approaches being offered to different groups of Scotiabank employees at the same time. At the end of the study we'll report the findings to everyone involved. In the meantime, we appreciate your involvement and will welcome your feedback and questions as we proceed.

Research shows that adult learners, unlike children who generally need more structure, thrive in experiential, problem-based learning approaches where personal interests drive exploration and competence development. That is the approach being taken in this adult learning project. To start the program, you will be asked to select a work-related "stretch" project as the focus for your personal learning. This is a critical step. It clearly identifies what you want to achieve, and will enable you to check back at the end of 6 weeks to self-evaluate your learning and personal progress. More specific guidance will be provided on the "stretch" projects later; however, you may want to give this some thought before we begin in April.

The research group to which you have been assigned will be experiencing a very flexible, highly customized approach to self-directed learning. *Each participant in this research group will be assigned to a small mentored project team study group that will meet for short (20 minute) conference calls, or facilitated online forums occasionally during the six-week research project.* The aim is foster collaborative learning by building on different experiences and backgrounds to provide additional help with these personal "stretch" project.

More details about specific learning activities and events will be posted shortly. *Please check this site weekly for announcements and updates*.

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STEP 1: IDENTIFY A "STRETCH" PROJECT FOR PERSONAL LEARNING

 Write a short description of a "stretch project" (i.e. a project you want to do, significant problem or personal challenge you will be facing during the April-May period) to which you will be able to apply what you learn and make a positive difference.

Start by outlining the project, problem or personal challenge, your goals or desired outcome, and the things you want to learn to help you accomplish your goals. *It is ideal to select a robust problem or challenge to make it worth the time and effort you will be investing.*
Then think about how you will evaluate success in a way that can be clearly demonstrated to others e.g. ways to measure the value created such as return on investment (ROI), or testimonials about gains made, etc.
These "stretch projects" will be discussed at your first mentored project team session. More details on dates, time, agenda will be available soon ...

STEP 2: SPEND 20 MINUTES A WEEK ONLINE FOR LEARNING

Try to schedule a 10 to 20 minute period for personal learning on NewMindsets each week of this program.
Get off to an easy start by simply clicking each of the titles and read the front screen. Click the back arrow to return.
Then spend time each week on the item(s) that are of most interest.
IMPORTANT - *Don't try to cover everything. Instead, apply what you're learning directly to your project or scenario and record your progress in personal notes as you go.*

STEP 3: APPLY YOUR LEARNING TO YOUR JOB

With the content you learned in your 20-minute time spent online in mind, apply the ideas to your daily work activities and practices. In other words, *learn while you're working!*
You may want to keep a personal log or learning journal to capture the key insights as you go. Or, exchange ideas with others in the research project or in your workgroup to benefit even more.

STEP 4: PARTICIPATE IN THE COLLABORATIVE LEARNING ACTIVITIES FOR YOUR PROJECT TEAM

The aim is to make collaboration as easy as possible to get to know a few others in the research project and also gain benefits from working together. Therefore, we are recommending the use of technologies you know rather than exploring new collaborative products on the market.
Choices for collaboration are completely up to the team. You can use email, private discussion boards on Moodle, telephone and/or team conference calls using a Scotiabank bridge.

Suggested weekly collaborative activities are provided below.

Week 2 Activity – April 21-25
Spend 15 minutes online learning. Take 5 minutes this week to post a short summary of your project online Moodle private to your team. Offer ideas / suggestions on two other projects so that everyone gets some feedback. The Research Team will contribute when appropriate You may also want to contact each other by email or phone if you wish.

Week 3 Activity – April 28-May 2
Spend 10-15 minutes online learning. Take 5 to 10 minutes to join a Moodle discussion forum private to your Project Team where each person contributes ONE thing you learned this week, and how you are applying it to your job and your project. Comment on two other postings in your group so everyone gets some feedback. Research Team members will also join in this discussion where appropriate.

Mid-point : Week 4 Activity – May 5-9
Spend 15-20 minutes online learning.
Team Leader will be contacting people to see if there is an interest in coordinating a team conference call in weeks 5 and/or 6. If there is, please contact me for more details.

Week 5 Activity – May 12-16
Spend 10-15 minutes online learning. Take 5-10 minutes to collaboration in one of the following ways:
Online Option – In a group chat or discussion forum private to your team using Moodle, post a question related to your project where you want input. Others respond online offering suggestions and options. Research Team members will contribute when appropriate.
Phone Option – In a teleconference call have each person spend 1-2 minutes each to cover one thing learned, and how it is being applied to the job and your project. A research team member can be invited to join your call if you wish.

Wrap-up : Week 6 Activity – May 20-24
Take 5-10 minutes for collaboration to end the research. Share one or two things that you learned in the 6 week period that you found helpful and how you are applying these ideas to your job and your project. If you do this online, comment on two other postings.

STEP 5: ASSESS YOUR LEARNING OUTCOMES & PERSONAL PROGRESS

During the week of June 2nd, an End Results & Feedback survey will be sent to you by email. During the first week in June, you'll also be asked to complete the Learning Preferences, Soft-skills Competence, and Motivators & Barriers questionnaires to wrap up the research project.
Personal feedback will be sent to you in July, and a preliminary project report will likely be available by September. On behalf of my Research Team and Scotiabank, I'd like to thank you for participating in this research project.