Workplace Learners' Perceptions towards a Blended Learning Approach

Denys Lupshenyuk, and Jean Adams

Abstract—The current paper presents the findings of a research study on learners' barriers and motivators engaged into blended programs in a workplace context. In this study, the participants were randomly assigned to one of four parallel e-learning courses, each of which was delivered using a different learning strategy. Data were collected through web-based and telephone surveys developed by the researchers. The results showed that vague instruction, time management, and insufficient feedback were the top-most barriers to blended learning. The major motivators for blended learning included content relevance, flexibility in time, and the ability to work at own pace.

Keywords—Adult education, barriers, blended learning, motivators, workplace learning.

I. INTRODUCTION

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 [10], [20]. With the continuing advancement of digital technology, blended learning takes on new dimensions merging the best features of conventional face-to-face instruction and online education. Blended learning is generally agreed to involve a mixture of instructional modalities, delivery media, instructional methods, and web-based technologies [10]. Blends of instructional modalities usually entail a balanced mixture of onsite, web-based, and self-paced learning [13], [19]. To make blended learning more powerful, educators mix delivery methods, for instance, classroom training or seminars, web-based courses, DVDs, video, computer simulations, printed materials, the Internet, PowerPoint slides, etc [5]. In many cases, blended learning is designed with the use of synchronous and/or asynchronous web-based technologies, such as chat rooms, wikis, threaded discussions, virtual classrooms, instant messaging, conferencing tools, bulletin boards, audio/video computer conferencing, blogs, etc [10]. Some researchers believe that a combination of new pedagogies, learning theories, and instructional methods transforms approaches to teaching and learning in blended learning environments [6]. Potential benefits of blended learning include pedagogical richness (e.g., shifting from a presentational format to active learning), greater access to personalized learning, to 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) [3], [8], [14], [17], [19], [21].

For the purposes of the current study, the term *blended learning* is being defined as a combination of various instructional modalities intertwined with synchronous and/or asynchronous web-based 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.

To engage adult learners in blended programs that provide just-in-time access to learning tools and resources requires a well considered and customized instructional design aligned with individual learning preferences, needs, interests, and job-oriented goals. In this regards, learners' attitudes towards factors that encourage and impede their learning are assumed to play a significant role in designing and delivering blended programs in a workplace context. Much has been written on learners' perceptions, concerns, and motivation about the use of technology in online learning programs, as well as their attitudes towards the use of a combination of web-based learning activities with face-to-face interaction [7], [11], [12]. While the impact of challenges and benefits of fully online learning on students in a post-secondary context is well established [4], [18], there are relatively few studies on barriers and motivators for blended learning in a workplace setting [22].

Several studies related to learners' perceptions of the online mode of instruction identified the following barriers as predominant: 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, interaction with others), lack of prerequisite skills (e.g., research and information processing skills), and time management barrier [4], [9], [15]. A few studies identified the major motivators for online learning: work-related content and the application of easy-to-use technologies [22]. Nagura and Arakawa [16] reported that most learners had a positive view of blended learning feeling that the topics included in training

D. Lupshenyuk is PhD Candidate in the Faculty of Education, York University, Toronto, ON M3J 1P3 Canada (corresponding author to provide phone: 647-285-3320; e-mail: denys_lupshenyuk@ edu.yorku.ca).

J. Adams is with the Schulich School of Business, York University, Toronto, ON M3J1P3 Canada (email: jadams@schulich.yorku.ca).

matched their needs and goals. It is clear that blended learning is an approach that satisfies the needs of students, as well as raises pedagogical concerns in terms of facilitation, technology support, and re-design of training programs.

II. CONTEXT OF THE STUDY

The current study of barriers and motivators for workplace learning was part of a large-scale research project, the Blended Learning for Soft-Skills Development (BLSD), funded by the Canadian Council on Learning and coordinated by York University's Schulich School of Business, the Institute for Learning Technologies (IRLT) at York University (Toronto, Canada). The purpose of the BLSD research project was to compare the learning outcomes of four different blended learning strategies and to determine which strategy yielded optimal results or change in organizational and interpersonal behavior. Quasi-experimental methodology was employed to determine if learning skills interacted with group allocation to affect learning outcomes or change in skills.

The four research groups utilized a different blended learning strategy to develop their management soft-skills (see Table I). In *Group One*, self-directed e-learning, participants received no treatment (e.g. no assignments, no mentorship, no collaboration) to support job performance and soft-skills development. *Group Two*, a blend of classes and e-learning, had participants who were taking a formal course and required to complete pre- and post-work assignments. In *Group Three*, a blend of coaching and e-learning, participants developed their personal learning objectives and had access to mentoring groups and remedial performance support. *Group Four*, a blend of "stretch" action-learning projects and e-learning, was designed to learn through individual or team project applications and provided just-in-time for action learning [2].

The permission to conduct the BLSD project was granted by the York University Human Participants Review Committee. Confidentiality was maintained throughout the research project to protect the ethical integrity of the research process. The two hundred research participants from a large Canadian corporation were randomly assigned to one of four parallel course offerings of the same e-learning course, each of which was delivered using a different blended strategy for management soft-skills development.

Participants used a personal case and skills assessment to focus their learning and personal development. Learning activities were delivered via two e-learning platforms – NewMindsets and Moodle – that provided participants with new capabilities to support personal on-the-job learning, just-in-time access to learning resources, and web-based tools supporting communication and collaboration in action projects [1]. Each week participants were expected to spend 20 minutes for their learning, so called the use of a 20-minute rule [1]. As a result, over a six-week period each participant invested three hours in their learning and their participation in the research project.

TABLE I
BLENDED LEARNING: A FOUR-LEVEL MODEL FOR INTEGRATING WORK AND ONLINE LEARNING [2]

Blended Learning Model	Details for Integrating Work and Online Learning
Level 1: e-Learning as a Background Resource	Online learning resources are made available as voluntary background material for supporting job performance and personal development 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	Online materials are integrated with classroom instruction 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	Online materials are tightly coupled with personal learning objectives 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	Online materials support action projects that have been mandated to deliver demonstrable value through individual or team project applications 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.

Research data were collected through questionnaires, surveys, and phone interviews before, after, and throughout a two-month research project. Information collected for analysis included demographic and workplace variables, sof-skills and learning styles assessments, confidential self-reports on what was learned (i.e., impacts of actions taken on their personal cases), and barriers and motivators for blended learning.

Participants' Characteristics. Since the collection of demographic data was not part of the study on barriers and motivators, the demographic profile of the participants is provided below in this section. The largest number (32%) of the participants were located in the province of Ontario, 28% were from Alberta, 21% from British Columbia, 12% from overseas, and about 5% from the Maritime provinces, Saskatchewan, Quebec, and the United States. The majority (91%) of the participants had been with a Canadian corporation for more than five years, 4% -- for three to five years, and 4% -- between one and three years. All the participants were in senior management jobs. Participants

completed a learning style survey and the results indicate that most people are either auditory learners (37%) or kinesthetic learners (35%), while 15% were visual learners and 13% had multiple learning styles.

At the end of the study, demographic data gathered for those who responded to the final survey indicated 1.5% were Generation Y (< 30 years); 56% were Generation X (30 to 45 years); and 43.5% were Baby Boomers (> 45 years). Participants also self-reported the total time spent on the six week research project: 34% 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 per week.

III. METHODS

The purpose of the current study was to explore changes in how research participants perceived barriers and motivators for learning at a program-wide level at the pre- and posttest examinations. For this study, the Barriers and Motivators for Learning (BML) Questionnaire was developed and distributed to the research participants through a web-based survey system hosted by York University. The BML Questionnaire consisted of three parts: (a) an inventory of possible eleven barriers and ten motivators that learners usually encounter during online learning, (b) open-ended questions encouraging participants to bring their own perspectives in relation to barriers and motivators, and (c) a field for participants to provide their contact information in case they were willing to discuss their experiences in detail. The research participants were asked to identify and rate the strength of the proposed barriers and motivators on a three-point scale ranged from '1' indicating "no barrier or motivator," '2' indicating "minor barrier or motivator," to '3' indicating "major barrier or motivator." Average survey completion times for the participants varied from 3 min 25 sec to 6 min 17 sec.
Participants' responses were downloaded from the electronic survey hosting site and analyzed using the SPSS software. The researchers performed a descriptive analysis of the pre- and posttest survey data in order to obtain the percentage distribution for every barrier and motivator at a program-wide level. In addition, a rank order analysis was applied to compare different sets of major barriers and motivators – before and after the research project and between the research groups.

IV. FINDINGS AND DISCUSSION

A. Barriers to Blended Learning

The results in relation to the major barriers to blended learning before and after the participants took an e- learning course are demonstrated in Table II.

TABLE II
MAJOR BARRIERS TO BLENDED LEARNING IN THE PRE- AND POSTTEST ADMINISTRATION

Barriers	Pretest Results (%)	Posttest Results (%)
Problems with technology	15.0	17.9
Feeling isolated	4.7	12.8
Information overload	24.0	17.9
Feeling anxious about taking tests	22.5	5.1
Insufficient feedback	14.7	23.1
Vague instructions	29.5	41.0
Lack of self-discipline	10.1	15.4
Time-management	24.8	35.9
Lack of experience with the course tools used	10.9	17.9
Lack of Internet skills	7.0	15.4
Limited access to the Internet	5.4	5.1

Interestingly, barriers to blended learning had "major barrier" response rates of less than about 30% at the pretest and 41% and less at the posttest. In the pretest, the following major barriers to learning for the participants were identified: "vague instruction" (29.5%), "information overload" (24.0%), and "time management" (24.8%). The participants expressed their least concerns about limited access to the Internet (5.4%), lack of Internet skills (7.0%), and online isolation (4.7%). In the posttest administration, the response rate for two recurrent barriers increased, compared to the pretest - "vague instructions" (41.0%) and "time management" (35.9%). A third major barrier at the posttest was "insufficient feedback" (23.1%) suggesting that the participants were challenged by "following instructions" or "confusing directions." Also, three of the eleven barriers were rated as 'no barriers' by at least 76% of the participants, including "limited access to the Internet" (87.2%), "lack of Internet skills" (79.5%), and "anxiety about tests" (76.9%)..

It should be noted that "information overload" indicated by 24% of the participants as a 'major barrier' at the pretest dropped by almost 7% by the end of their participation in the learning course. The explanation for this significant drop could lay down in design of the content for blended learning programs. During their, the participants had access to a well-structured content provided by *NewMindsets*, an e-learning solution developed by York University's Schulich School of Business. Interestingly, a time management barrier was still an issue for the participants even though they were asked to spend only twenty minutes a week for their learning. For example, ane participant noted, "Interruptions, either at work or at home, are a major factor I encounter. I tend to put things off until absolutely necessary. Then I am stressed, but I do get the job/training done." Another appealing finding was a drop in participants' concerns about "feeling anxious about taking

tests" obviously caused by lack of test assignments in the learning design of courses.

The participants also identified some other barriers:

- *work-related pressures* (e.g., "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 to block off time without interruptions. I can tell people that I am not available but there seems to always be a reason for interruption.");
- *boredom while learning online* caused by the nature of text-based online learning (e.g., "My major barrier is reading and understanding. I am better off listening to audio and video than reading in order to understand concepts");
- *poor self-directed learning skills* (e.g., "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")

B. Motivators for Blended Learning

The percentage distributions for major motivators for blended learning rated by the research participants at the pre- and posttest are reported in Table III. Survey results aggregated across all participants in different research groups before the research study began indicated that the top-most motivators were: "relevant content" (88.4%), "fits your learning style" (67.4%), and "flexibility in time" (60.5%). "Engaging design," and "sense of community," and "confidentiality" were the lowest rated motivators for the participants.

TABLE III
MAJOR MOTIVATORS FOR BLENDED LEARNING IN THE PRE- AND POSTTEST ADMINISTRATION

Motivators	Pretest Results (%)	Posttest Results (%)
Flexibility in time	60.5	57.5
Flexibility in location	55.0	55.0
Interactions with others	55.8	20.0
Sense of community	40.3	10.0
Timely feedback from facilitators	56.5	32.5
Confidentiality	43.4	52.5
Engaging design	45.0	35.0
Relevant content	88.4	82.5
Being able to work through course materials at my own pace	58.1	57.5
Fits your style of learning	67.4	47.5

Following the research study, the rank order of motivators showed that "relevant content" remained to be the top-most motivator as perceived by the participants at the pretest. This was followed by the motivators slightly dropped in their response rate – "flexibility in time," "work at my own pace," "flexibility in location," and "confidentiality." Interestingly, "interactions with others" that was reported to be within the top motivators in the pre-test administration significantly dropped by 35.8% and appeared at the bottom of the motivator inventory. A "confidentiality" factor received 52.5% response rate and was ranked within the top motivators, though it was considered one of the least important motivators at the beginning of the study. In both pretest and posttest data, "sense of community" was perceived by the participants as the least important motivating factor to engage in blended learning activities.

It appears that online socialization was not very attractive to the participants. By looking closely at their comments, several reasons could be considered. Low interest in online interaction could be caused by lack of necessary technical skills. During the BLSD project, the participants utilized *Moodle* for their communications and *NewMindsets* for content delivery. Some participants in their responses reported the difficulty caused by switching from one application to another one. Other indicated the lack of guidance and scaffolding, and several participants felt nostalgic for face-to-face interaction (e.g., "I am definitely more motivated to learn in a classroom setting. Conversation, instruction with visual examples and feedback help me to clearly understand the subject").

V. CONCLUSION

Despite the fact that significant difference has not been found, the descriptive data revealed that workplace learners perceive as their top-most motivators content relevance, flexibility in time, and the ability for learners to work at their own pace. The major barriers that could discourage workplace learners from learning using blended strategies comprise: vague instruction, time management, and insufficient feedback. This research study demonstrated that blended learning solutions were able to positively impact workplace learners' motivation to learn. In other words, the participants in this study had stronger motivators, than barriers to learning. For example, five motivators had posttest response rates of more than 50% of the participants, while the highest posttest response rate for one of the barriers was 41%.

If blended learning is to provide benefits to workplace learners, the blended solutions should be designed to facilitate and guide the learning process taking into account learners' perceptions about factors encouraging or discouraging them from learning. Scaffolding, in this case, is particularly important in order to engage adult learners in online interactions.

There is still a need for additional empirical research using qualitative methods to further verify the factors that benefit or discourage workplace learners from using blended learning

solutions to improve their skills and job performance. The further research is necessary to compare motivators and barriers that participants perceive while using one of the four blended learning strategies mentioned at the beginning of the paper.

REFERENCES

[1] J. Adams, "Blended learning for soft-skills development: Testing a four-level model integrating work and learning to maximize personal practice and job performance," unpublished statement of work, Canadian Council on Learning.

[2] J. Adams, "Second Generation" e-learning: An action-based exploration of design and implementation," Ph.D. dissertation, York University, Toronto, Ontario, Canada, 2004

[3] B. Albrecht, "Enriching student experience through blended learning," ECAR Research Bulletin, vol. 12, 2006.

[4] Z. L. Berge. (1998). "Barriers to online teaching in post-secondary institutions: Can policy changes fix it?" Online Journal of Distance Learning Administration, vol. 1. Available:

[5] http://www.westga.edu/~distance/ojdla/summer12/berge12.pdf

[6] J. Bersin. (2003). "What works in blended learning?" Available: http://www.learningcircuits.org/2003/jul2003/bersin.htm

[7] J. M. Carman. (2002, October). "Blended learning design: Five key ingredients." KnowledgeNet. Available:

[8] http://www.knowledgenet.com/pdf/Blended Learning Design_1028.PDF

[9] R. L. Dobbs, "An experimental study of the impact of training on faculty concerns," Journal of Industrial Technology, vol. 21(1), pp.2-8, 2005.

[10] C. D. Dziuban, J. L. Hartman, and P. D. Moskal, P. (2004). "Blended learning." ECAR Research Bulletin, vol. 7. Available: http://net.educause.edu/ir/library/pdf/erb0407.pdf

[11] Y. Y. Fung, "Collaborative online learning: interaction patterns and limiting factors," Open Learning: The Journal of Open and Distance Learning, vol. 19(2), pp. 135-149, 2004.

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

[13] Y. Liu, P. Theodore, and E. Lavelle, "Experimental effects of online instruction on teachers' concerns about technology integration," International Journal of Instructional Technology & Distance Learning, vol. 1, 2004. Available:

[14] http://www.itdl.org/journal/Jan_04/article03.htm

[15] D. Lupshenyuk, M. M. Hocutt, and J. E. Gibbs, "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, Chesapeake, VA, 2007 pp. 6275-6282.

[16] M. Martyn. "The hybrid online model: Good practice." Educause Quartely, vol. 1, pp. 18-23, 2003.

[17] http://www.sloan-c.org/publications/books/alnprinciples2.pdf

[18] L. Y. Muilenberg, and Z. L. Berg, "Student barriers to online learning: A factor analytic study," Distance Education, vol. 26(1), pp. 29-48, 2005.

[19] H. Nagura and Y. Arakawa, "Effectiveness of blended learning in management skill training," NRI Papers, Nomura Research Institute, Ltd., 2003.

[20] R. Owston, H. Wideman, and J. Murphy. "Blended learning for professional development in diverse urban settings: Findings from three project evaluations." Paper presented at the Annual Meeting of the American Educational Research Association, New York, March, 2008.

[21] S. Panda, and S. Mishra, "E-learning in a mega open university: Faculty attitude, barriers and motivators," Educational Media International, vol. 44(4), pp. 323-338, 2007.

[22] A. G. Picciano, A. G. "Blended learning: Implications for growth and access." Journal of Asynchronous Learning Networks, vol. 10(3), 2006.

[23] C. Procter. "Blended learning in practice." Proceedings of Conference on Education in a Changing Environment, Salford, UK, 2003

[24] N. Vaughan. "Perspectives on blended learning in higher education." International Journal on E-Learning, vol. 6(1), 81-94, 2007.

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