Examining Students' Attitudes toward Blended Learning in Adult Literacy and Basic Skills Programs

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Abstract

Literacy and Basic Skills (LBS) programs offer adult learners, with low literacy and basic skills, opportunities to improve employment skills and pre-requisite courses for entrance into post-secondary education. Barriers to learning that students encounter in LBS programs might be reduced through a blended learning instructional approach. Due to limited access to technology in LBS programs, little is known about attitudes of LBS students toward online learning. The purpose of this study was to investigate the attitudes of community college students at three LBS sites toward blended learning, perceived success in blended learning, and individual differences among students with respect to their attitudes toward blended learning. Over 90% of 149 LBS students (94 male, 55 female) who participated in the study agreed that they achieved success in the program; their learning needs were met through face-to-face class attendance, and they indicated that in-class communication with instructors and peers was important for learning. By comparison, 40% of students agreed that the online activities met their learning needs, and less than 25% of students agreed they could learn online effectively. Some students avoided online content due to their limited computer skills or because they viewed the content as unnecessary for course requirement. Students preferred face-to-face learning over online learning because they viewed the face-to-face format as encouraging, supportive, and collaborative. Students reported that more online learning opportunities were needed when they were not able to attend class or for support of specific learning skills. Age and time out of formal education was significantly and positively correlated with preference for face-to-face learning. Level of education was significantly, negatively correlated with preference for online learning.

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Contents

1. Introduction

Adult Literacy and Basic Skills (LBS) programs have been funded by governments in Canada and the United States since the 1950s (CLLN, 2015; Government of Canada, 2015; ProLiteracy, 2003). The mandate of LBS programs is to provide adults with low literacy and educational levels the opportunity to improve their skills through academic upgrading and life skills or career training, which is currently and most often provided in traditional, face-to-face classrooms (Canadian Literacy Learning Network (CLLN, 2015); Government of Canada, 2015; Ministry of Training, Colleges and Universities (MTCU), 2014; ProLiteracy America 2003). Literacy skills, in particular, have been recognized internationally as being critical for positive social, educational, and economic outcomes in LBS programs (CLLN, 2015; Government of Canada, 2015; ProLiteracy, 2003). Since LBS programs typically have shown high absenteeism and drop-out rates (ABC Canada, 2001; British Columbia Ministry of Advanced Education, 2005; Thomas, 1990; Malicky & Norman, 1994), service providers are challenged to show success for target numbers of learners and continue to seek instructional approaches that will better support student success.

Applicants to LBS programs are typically considered a vulnerable population (CLLN, 2015; Government of Canada, 2015; MTCU), 2014; ProLiteracy America 2003). For example, LBS programs in Ontario define suitable adults as those who are unemployed or under-employed, lack a high school diploma, have been away from formal education for extended periods of time, collect government assistance, and/or have a disability (physical and/or learning) (MTCU, 2014). Therefore, adult learners enter LBS programs with individual characteristics that contribute to low academic success rates (e.g., British Columbia Ministry of Advanced Education, 2005; ABC Canada, 2002; Malicky & Norman,

1994; Pross & Barry, 2004; Zacharakis, Steichen, & Diaz de Sabates, 2011). Personal learning barriers for LBS students in face-to-face classes included time management, employment and nature of job, family situation, and financial issues (e.g., British Columbia Ministry of Advanced Education, 2005; Hayes, 1988), and these same barriers were also reported for online students in higher education (Giguere, 2009; Packham, Jones, Miller, & Brychan, 2004; Park & Choi, 2009; Willging & Johnson, 2004). Face-to-face instruction alone and online instruction alone may not be adequate to meet the individual needs of students.

In addition to individual barriers to success, Quigley (1998) reported LBS student success in face-to-face learning environments was impacted by negative past experiences of failure and lack of instructor response to individual learning needs (Quigley, 1998). Furthermore, several studies have observed that adults often leave LBS programs before successful completion due to dissatisfaction with the face-to-face instructional approach due to the various factors (e.g., Pross & Barry, 2004; British Columbia Ministry of Advanced Education, 2005; Malicky & Norman, 1994; Quigley, 1998; Quigley & Uhland, 2000). On the other hand, LBS programs that created safe and flexible learning environments through caring instructors and tutors helped learners gain the confidence required to succeed (Pross & Barry, 2004). However, even though the face-to-face teacher-student relationship motivated adult learners, this had little impact on success if the student had individual barriers to learning, such as time management issues due to work and family responsibilities, which interfered with class attendance (Hayes, 1988; Quigley, 1998; Zacharakis et al., 2011). Blended learning is an instructional approach that includes face-to-face instruction and an online component. A blended learning approach has the

potential to provide face-to-face and online instructional support and encouragement while accommodating the students' time management needs through the flexibility of the online component.

Students in higher education have benefited from blended learning environments that emphasize social-constructivist pedagogy, address the different learning needs of students, and build collaborative learning communities (e.g., Bernold, Spurlin, & Anson, 2007; Fisher & Baird, 2005; Gill, 2009; Hoskins, 2012; Packham et al., 2004; Rovai, 2002; Wyatt, 2011). At least three studies in blended learning noted improved student satisfaction, retention and success in higher education environments (e.g., Boyle, Bradley, Chalk, Jones, & Pickard, 2003; Fenouillet & Kaplan, 2009; Sorden & Munene, 2013). Blended learning has also provided supportive resources and collaborative opportunities outside of the face-to-face classroom that students in higher education viewed as beneficial to learning (e.g., Moloney, Hickey, Bergin, Boccia, Polley, & Riley, 2010; Ausburn, 2004; Lim, Morris, & Kupritz, 2007). Students in higher education reported flexibility in time of day access to online course resources (Cicco, 2009) and increased instructor and peer supports outside of the face-to-face classroom (Lim et al., 2007; Sorden & Munene, 2013) as important features for blended learning. Also, students in higher education indicated that their attitudes toward online learning were influenced by their ability and confidence to use technology (Muilenburg & Berge, 2005; Hauser, Paul, Bradley, & Jeffrey,, 2012).

Purpose of Study

A number of LBS programs report low access to and student avoidance of technology for learning due to skill barriers (ABC Canada, 2002; British Columbia Ministry of Advanced Education, 2013), however, the impact of blended learning in LBS programs

has not been reported in the literature. Having taught LBS students for a number of years, the author recognized the potential of blended learning to provide student supports that could impact retention and success. The purpose of the current study, then, was to investigate LBS adult students' attitudes toward blended learning, perceived success in blended learning, and individual differences among students with respect to their attitudes toward blended learning.

2. Literature Review

Overview

The literature review consisting of 42 peer-reviewed journal articles and five published books (1975 to 2014) can be categorized into eight themes:

- blended learning (six articles)
- collaboration and instructor/peer support (11 article, 2 books)
- instructional design (4 articles, 3 books)
- perceived success LBS face-to-face programs (3 articles)
- success for blended learning versus face-to-face learning (8 articles)
- success and communication with instructors and peers (4 articles, 3 books)
- success and collaboration (9 articles, 3 books)
- individual differences and LBS programs (10 articles)
- individual differences and blended learning (14 articles).

Student Attitudes toward Blended Learning

Regarding student attitudes towards blended learning, four themes emerged in the literature review: student attitudes toward blended learning and face-to-face learning, degree of communication, collaboration and instructor/peer support, and attitudes toward blended instructional design features. Each of these themes will be discussed in turn.

2.2.1. Blended Learning

A number of studies in higher education compared students' attitudes toward blended, face-to-face, and online learning and reported positive attitudes toward blended learning (e.g., Gill, 2009; Hauser, Paul, & Bradley, 2012; Larson & Sung, 2009; Rovai &

Jordan, 2004; Senn, 2008; Vance, 2012). Gill (2009) reported on 253 university students whose attitudes toward blended learning were positive when the course components were innovative, interesting, and interactive. Hauser, Paul, and Bradley (2012) indicated in a study of 240 university students that their learning depended heavily on personal interactions with the face-to-face instructor and on the organization and completeness of the online course materials. Larson and Sung (2009) surveyed 168 college students who indicated that they were more motivated and satisfied with blended learning and online learning in comparison to face-to-face learning. Rovai and Jordan (2004) reported that 68 graduate students expressed positive attitudes toward blended learning because students appreciated the convenience of online access with the support of face-to-face instructors when needed. Senn (2008) surveyed 51 graduate students' and conducted case studies and reported that students preferred blended learning over face-to-face, because they enjoyed the flexibility of the online format but were eager to meet in the face-to-face setting for extra instructional support. Similarly, Vance (2012) surveyed 1,874 undergraduate students who also indicated a preference for blended learning due to the convenience of online support coupled with an instructor presence.

The literature reported positive attitudes for higher education students toward a blended learning approach. Blended learning could provide an instructional approach that could improve LBS students' toward learning in comparison to face-to-face learning alone or online learning alone.

2.2.2. Communication in Blended Learning Courses

Several studies indicated that students' attitudes were positively influenced by the degree of communication in the blended course design (e.g., Ausburn, 2012; Conceicao &

Lehman, 2013; Fisher & Baird, 2005; Gülbahar & Madran, 2009; Muilenburg & Berge, 2005; Tello, 2007). Ausburn (2014) delivered a questionnaire to 67 undergraduate students who indicated that they valued blended learning features such as active communication and interaction among learners and effective two-way communication between learners and instructor. Similarly, Conceicao and Lehman (2013) surveyed 272 undergraduate students and 167 graduate students and the results showed that the online instructor feedback and response to individual student needs motivated and supported their online learning. Fisher and Baird (2005) reviewed 100 graduate student portfolios and found positive student attitudes toward blended learning when an instructor provided students with support and feedback both online and face-to-face. Gülbahar and Madran (2009) surveyed 374 college and high school students and reported improved student satisfaction in blended learning as communication between instructors and students increased. Muilenburg and Berge (2005) surveyed 1,056 graduate, university, and college students who described positive attitudes toward online learning that included social interaction with instructors and peers and when instructors' support and timely feedback were present. Finally, Tello (2007) surveyed 714 university students and found that student attitudes toward the learning environment were positively impacted by the timeliness and appropriateness of instructor feedback and the amount of course-related communications.

The literature indicated that higher education students' attitudes toward blended learning were positively influenced by the amount of course communication. Blended learning that enhances communication in LBS courses could result in improved students' attitudes toward learning.

2.2.3. Collaboration and Instructor/Peer Support

Quite a few studies reported that students appreciated the instructor or peer support and collaborative opportunities provided by a blended learning instructional approach (e.g., Ausburn, 2014; Conceicao & Lehman, 2013; Fisher & Baird, 2005; Gill, 2009; Gülbahar & Madran, 2009; Hauser et al., 2012; Lim et al, 2007; Lewis, 2010; Rovai & Jordan, 2004; Sorden & Munene, 2013; Vance, 2012). Ausburn (2014) reported that positive attitudes for 67 university students resulted from blended learning that supported collaborative and active learning communities. Conceicao and Lehman (2013) reported positive attitudes for 272 undergraduate students toward blended learning when the class developed a sense of community through instructor-student and peer collaboration. Fisher and Baird (2005) reported that 100 graduate students in blended learning courses preferred to be a part of a learning community that provided media technologies which encouraged student participation through problem solving activities and exchange of ideas. Gill (2009) compared the attitudes of 253 students toward passive and collaborative blended learning in a two-year university study and found an increased student preference toward collaborative blended learning at the end of the study as opposed to working alone. Gülbahar and Madran (2009) investigated blended learning satisfaction among 374 college and high school students and reported that students' satisfaction increased as their participation in collaborative activities increased. Hauser et al. (2012) suggested that blended instruction met the needs of students through face-to-face instructor-student collaboration while providing organized, online resources for support outside of the classroom. Lim et al. (2007) delivered a questionnaire to 125 undergraduate students and the results indicated that students enrolled in blended learning felt better supported by

peers and instructors than those students enrolled in online learning alone. Lewis (2010) surveyed 182 students in college level online and blended learning courses and found that students preferred blended learning due to the increased collaborative interactions with other students and instructors in comparison with online learning alone. Rovai and Jordan (2004) surveyed 68 graduate students and reported positive attitudes toward the blended learning course in that it provided a more connected, collaborative learning community than traditional face-to-face or online courses. Sorden and Munene (2013) surveyed 108 college students and reported that student satisfaction increased in blended learning environments over face-to-face or online learning, with a strong link between social and collaborative activities and satisfaction in blended learning. Finally, Vance (2012) surveyed 1,874 undergraduate students who indicated positive attitudes toward blended learning that provided collaborative, online learning activities combined with traditional instructor-led learning activities.

The literature indicated that higher education students appreciated the enhanced collaboration and support from instructors and peers provided by blended learning environments. LBS students might benefit from the collaborative and support opportunities provided through a blended learning design.

2.2.4. Instructional Design

A number of researchers observed positive student attitudes when blended learning design was self-directed, individualized, and active (e.g., Ausburn, 2014; Fisher & Baird, 2005; Gülbahar & Madran, 2009; Nikitenko, 2011). Ausburn (2004) reported that 67 university students valued the blended learning design that offered options for individualized learning, self-directed learning, and variety in learning activities. Fisher and

Baird (2005) reported positive attitudes for 100 graduate students when blended course design with elements addressed the individual needs of adult learners and included media technologies that provided active student participation through problem solving activities and exchange of ideas. Gülbahar and Madran (2009) found that satisfaction with blended learning increased for 374 college and high school students when the activities were self-directed and students could make their own choices about what and how to learn. Lastly, Nikitenko (2011) conducted questionnaires with 152 college students enrolled in blended learning courses and 88 college students enrolled in online learning courses and reported that asynchronous features (discussion forums, self-paced online exercises and tests, flexible timelines) were more appreciated than the less flexible synchronous features (online chat rooms, videoconferencing).

The literature indicated that higher education students' had positive attitudes toward self-directed blended learning. LBS programs may see improved student success by incorporating these preferred features into blended learning designs.

Blended Learning and Perceived Success in LBS Programs

LBS programs report low access to and student avoidance of technology for learning (ABC Canada, 2002; British Columbia Ministry of Advanced Education, 2013); research on perceived success of LBS programs is currently limited to face-to-face instruction so it was necessary to focus on blended learning research in higher education. Four themes emerged in the literature review:

- LBS face-to-face programs,
- success for blended learning versus face-to-face learning in higher education,

- success and communication with instructors and peers in higher education, and
- success and collaboration in higher education.

Each of these themes will be discussed in turn.

2.3.1. LBS Face-to-Face Programs

Three studies reported that students in LBS face-to-face programs related program success to classroom community, one-on-one instructor support, and peer support (i.e., Quigley & Uhland, 2000; Reynolds & Johnson, 2014; Zacharakis et al., 2011). Zacharakis et al. (2011) conducted focus group interviews with 104 LBS students and reported strengths related to program success to be the teacher-student relationship (e.g. cares, motivates, provided resources), hands-on activities, group activities, and student engagement in the classroom. Similarly, Reynolds and Johnson (2014) investigated program persistence for 60 LBS students and found that students frequently mentioned classroom community, peer support and teacher-student relationships as contributing factors to success. Furthermore, Quigley and Uhland (2000) conducted a quasi-experimental study with 20 LBS students and reported improved student success in face-to-face learning that included one-on-one support from instructors and that built communities of learners in the classroom.

2.3.2. Blended-Learning Success in Higher Education

While there is no research on the impact of blended learning in LBS programs, a number of studies in higher education have examined the impact of blended learning on perceived success. Three themes emerged: success in blended learning versus face-to-face, communication with instructors, and enhanced collaborative learning communities. Each of these themes will be addressed in turn.

2.3.2.1. Success for Blended vs Face-to Face Learning

Some studies reported mixed results when comparing student success in blended to face-to-face and online only learning (e.g., Ashby & McNary, 2011; Boyle et al., 2003; Fenouillet & Kaplan, 2009; Gonzalez, 2014; Giguere, 2009; Larson & Sung, 2009; Rovai & Jordan, 2004; Senn, 2008). Boyle et al. (2003) reported that blended learning delivered to 600 university students over a six-month period significantly increased student grades and success rates compared to traditional face-to-face or online only courses. Fenouillet and Kaplan (2009) compared the academic success of 692 undergraduate students and reported greater positive effects in blended learning and online learning compared to face-to-face learning alone. Gonzalez (2014) conducted a study of success of 285 college students and reported lower student success in face-to-face classes in comparison to the blended learning format. Giguere (2009) studied course completion rates over three consecutive, university academic years from 6,634 course enrolments in 137 face-to-face courses and 70 blended learning courses and reported that course completion rates were consistently higher in blended learning courses than for those in face-to-face courses. Rovai and Jordan (2004) compared student success of 68 graduate students using pre-test and post-test analysis and found the highest success for blended learning students, followed by face-to-face and then online learning students.

In contrast to these positive evidences, Senn (2008) reported lower student success for students, as measured by final grades of their graduate level course, for 35 students in blended learning in comparison to 16 students in face-to-face learning. These graduate students perceived that blended learning required more work than face-to-face learning. The additional time and effort required for students to overcome difficulties in blended

learning might have interfered with the students' attention to detail and ability to complete the highest quality assignments possible. Ashby and McNary (2011) also reported lower success rates for students in blended learning, as measured by their final grades in math courses, for 167 students who self-selected to enrol in blended online, or face-to-face math courses. However, Larson and Sung (2009) compared success for 168 university students, measured through exam scores and final grades in an introductory management information systems course, in face-to-face learning, online learning, and blended environments. No significant differences were found in student success among the three different delivery modes.

2.3.2.2. Success and Communication with Instructors and Peers

Four studies reported improved student success resulting from blended learning environments that enhance communication with instructors and peers (i.e., Conceicao & Lehman, 2013; Fenouillet & Kaplan, 2009; Gonzalez, 2014; Muilenburg & Berge, 2005). Conceicao and Lehman (2013) surveyed 439 university students who reported that the instructor's one-on-one feedback online and informal course announcements online were important for success. Similarly, students were more likely to experience frustration and drop out of online courses when instructor support and timely instructor feedback were absent (Muilenburg & Berge, 2005). Fenouillet and Kaplan (2009) found greater student success in a study of 692 undergraduate students when blended learning and online learning environments provided communication with instructors and peers through asynchronous services such as e-mail, discussion forums, and file exchange via a learning management system. Gonzalez (2014) found lower student success in a study of 285 college students in face-to-face classes in comparison to blended learning classes and

attributed this success to more interactions with the instructor and other students, and increased instructor feedback.

2.3.2.3. Success and Collaboration

Seven studies indicated that blended learning improved student success through enhanced collaborative learning communities (Boyle et al., 2003; Conceicao & Lehman, 2013; Gonzalez, 2014; Lewis, 2010; Muilenburg & Berge, 2005; Rovai & Jordan, 2004; Senn, 2008) Tinto (1997) suggested that one of the most reliable predictors in learning success was student involvement or engagement. Further, student involvement was accomplished through the development of learning communities at the college, program and classroom levels and it had positive effects on student success in higher education (Tinto, 1997; Kuh, Cruce, Shoup, & Kinzie, 2008). Specifically, student success has been reported to be improved through enhanced collaboration with peers in online environments (Conceicao & Lehman, 2013; Muilenburg & Berge, 2005). Boyle et al. (2003) found blended learning instruction that was social, collaborative, and differentiated led to improved student satisfaction, retention and success. Gonzalez (2014) reported that college students in blended learning classes learned the material online before coming to their face-to-face lectures which allowed for deeper, collaborative, classroom interactions in comparison to those students in the face-to-face format. Lewis (2010) surveyed college students who reported increased perceived success in their courses when they were given more opportunities to interact with instructors and students. Rovai and Jordan (2004) conducted pre-tests and post-tests with 68 graduate and reported that blended learning observed the highest degree of collaboration and success, followed by face-to-face and then online. Lastly, Senn (2008) reported that graduate students appreciated the collaborative

opportunities available for blended learning, but indicated that the face-to-face component was the quickest way for students to get help with misconceptions when learning new concepts.

Individual Differences, LBS Programs, and Blended Learning

A number of individual differences are considered to be important for academic success in LBS programs since they are often perceived as learning barriers by students (MTCU, 2014; CLLN, 2015). These individual differences include:

- age,
- gender,
- level of education,
- disability (physical and/or learning),
- computer skills, and
- employment status (unemployed, employed full-time, employed part-time).

Each of these individual differences and their relationships to LBS programs and blended learning are discussed in turn.

2.4.1. Age

2.4.1.1. LBS Programs

Four studies reported mixed results with respect to the influence of age on success in LBS programs (i.e., Hayes, 1988; Pross & Barry, 2004; Smith & Smith, 2008; Zacharakis, 2011). Hayes (1988) surveyed 160 adults and observed that older adults benefitted from flexible program schedules to support their employment and family responsibilities while younger adults required help to become self-directed learners. Pross and Barry (2004) reported that LBS students aged 16-24 had the lowest success rates at 58%, while those

aged 45 and older had the highest success rates at 83%. Zacharakis (2011) found older students perceived their age as a barrier to success in a focus group study of 104 adults aged 18 to 30 years old from 25 LBS sites. Finally, Smith and Smith (2008) conducted a secondary analysis of 3,518 surveys from the National Household Education Survey (National Center for Education Statistics (NCES), 2006a) and reported that the odds of LBS students engaging in asynchronous learning activities increased by 1-2% with each year of age.

2.4.1.2. Blended Learning

A number of studies have reported either small or no correlations between age and student attitudes toward blended learning (e.g., Ashby, et al., 2011; Giguere, 2009; Nikitenko, 2011; Packham et al., 2004; Sorden & Munene, 2013). Packham et al. (2004) interviewed with 20 undergraduate students and results indicated that older students (50 plus years of age) were less successful at completion of online activities than younger students. Nikitenko (2011) surveyed 240 graduate and undergraduate students and found no significant correlations between age and students' attitudes toward online learning or blended learning. Sorden and Munene (2013) analysed the satisfaction in blended learning college courses in relation to age for 108 students and found only small, positive correlations, with 95% of the variation being due to unknown factors. Giguere (2009) also reported no correlations between age and successful completion rates of 70 blended learning university courses. Lastly, Ashby et al. (2011) compared the attitudes of 167 college students toward online, face-to-face, and blended learning instruction and found no relationships between age and attitudes toward the learning environments.

2.4.2. Gender

2.4.2.1. LBS Programs

Persistence in LBS programs appears to differ based on gender, usually in favour of females (British Columbia Ministry of Advanced Education, 2005; Hayes, 1988; Pross & Barry, 2004; Smith & Smith, 2008). The British Columbia Ministry of Advanced Education (2005) found that females completed their courses more often than males. Hayes (1988) reported that females in LBS programs expressed positive attitudes toward learning more often than males. Pross and Barry (2004) found that 39% of male students, compared to 23 % of female students, dropped out of their studies. Smith and Smith (2008) looked for relationships between self-directed, blended learning activities and gender for adult learners in LBS programs. No significant effects for gender on participation in self-directed, and asynchronous learning activities were reported.

2.4.2.2. Blended Learning

Studies of adults in higher education investigated relationships between gender and blended learning and reported mixed results (e.g., Ashby et al., 2011; Ausburn, 2004; Gülbahar & Madran, 2009; Nikitenko, 2011; Packham et al. 2004; Sorden and Munene, 2013). Ashby et al. (2011) compared the attitudes of 167 college students toward online, face-to-face, and blended learning instruction and found higher percentages of females self-selected to enrol in blended learning than in face-to-face or online learning. Questionnaires completed by 67 undergraduate students reported that females placed importance on the blended learning course to provide a sense of belonging and involvement while males looked for fast and effective assistance upon request and more opportunities to learn new technology skills than females (Ausburn, 2004). Gülbahar and Madran (2009) surveyed

374 college and high school students and found that male students were more satisfied with blended learning environments than female students. Packham et al. (2004) interviewed 20 undergraduate students and reported that males were more likely to drop out of online courses than females. Sorden and Munene (2013) investigated satisfaction of 108 students in 11 blended learning college courses in relation to gender and no differences in blended learning satisfaction were found between males and females. Lastly, Nikitenko (2011) investigated graduate students' attitudes toward online learning and blended learning and also found no differences in attitudes based on gender.

2.4.3. Level of Education

2.4.3.1. LBS Programs

Lower levels of education have been reported to negatively influence success in LBS programs (e.g., Malicky & Norman, 1994; Smith & Smith, 2008; Zacharakis, 2011). Malicky and Norman (1994) found high proportions of unsuccessful LBS students had lower than a grade 12 education; less than half of drop outs had received a high school diploma or the GED and a high proportion of dropouts in the first three months had a grade 9 education or less. Smith and Smith (2008) reported that LBS adults with less than a grade 12 diploma were significantly less likely to engage in asynchronous learning activities than those with a grade 12 education level. Finally, Zacharakis (2011) conducted focus group interviews with 104 LBS students from 25 sites. Approximately 80% of the students interviewed lacked a grade 12 diploma and perceived their lower levels of education as a barrier to their learning.

2.4.3.2. Blended Learning

Three studies of adults in higher education investigated relationships between level of education and blended learning with two reporting positive correlations and one reporting a negative correlation (i.e., Fenouillet & Kaplan, 2009; Giguere, 2009; Packham, et al. 2004). Fenouillet and Kaplan (2009) compared grades by academic year for 692 undergraduate and graduate students in blended learning and found that grades increased as the academic year increased. Giguere (2009) looked for relationships between level of education and successful completion rates of 70 blended learning university courses and reported a positive correlation between successful blended learning course completions and level of education. Successful blended learning course completions also increased with course level while no significant relationship was found between prior-university education and preference for blended learning. Packham et al. (2004) conducted semi-structured interviews with 20 undergraduate students to examine reasons for withdrawal from an online course. Results indicated that students with higher levels of education were less likely to complete their online courses. However, the reason for students' withdrawal was not directly related to their level of education; instead this trend occurred because these students did not place high priority on attaining another degree. Students without higher education qualifications were more motivated to complete their program.

2.4.4. Disability

2.4.4.1. LBS Programs

Students often enter LBS programs with negative past educational experiences which result in interrupted education and continue to affect their attitudes toward learning (Hayes, 1988; Quigley, 1998; Pross & Barry, 2004). These negative experiences were

reported by some learners to be the result of learning difficulties due to physical, mental, and/or learning disabilities which were key barriers to persistence in LBS programs (Porter, Cuban, & Comings, 2005). Many adult LBS learners experienced frustration with studies and dropped out since they had learning and reading disabilities, either with no formal diagnosis, or they chose not to reveal their disabilities to program instructors (Porter et al., 2005).

2.4.4.2. Blended Learning

At least two studies of adults in higher education reported on the potential of blended learning environments to have positive impacts on students with special needs (i.e., Tandy & Meacham, 2009; Couzens, Poed, Kataoka, Brandon, Hartley, & Keen, 2015). Higher education institutions considered the role of technology to transform the traditional face-to-face classroom into a blended learning environment with enhanced accessibility (Tandy & Meacham, 2009). Couzens et al. (2015) conducted a case study of seven university students who self-identified and had access to and used disability services. Students expressed positive attitudes toward the following blended learning options: informed, caring and clear lecturers and/or tutors; increased flexibility and choice which addressed specific student needs; experimentation with different learning modes; technologies, assessment choices and timing. Negative attitudes were found to be due to the limited access to assistive technologies which was restricted to students with documentation and training (Couzens et al., 2015).

2.4.5. Computer Skills

LBS programs, in general, appear to have low access to and student avoidance of technology for learning (ABC Canada, 2002; British Columbia Ministry of Advanced

Education, 2013). However, four studies in higher education indicated that improved computer skills positively affected attitudes toward blended learning environments (i.e., Ausburn, 2004; Gülbahar & Madran, 2009; Hauser et al., 2012; Muilenburg & Berge, 2005) while two studies in higher education reported no relationship between computer skills and attitudes toward blended learning (i.e., Nikitenko, 2011; Sorden & Munene, 2013). Ausburn (2004) had 67 students complete a questionnaire and reported that students in blended learning environments would benefit from choice in accessing technology support based on their level of computer skill. Gülbahar and Madran (2009) surveyed college and high school students (n=374) and found that positive attitudes toward blended learning increased with the higher levels of computer and internet skills and computer and internet use. For 240 university students in both online and face-to-face medium, Hauser et al. (2012) reported positive correlations between computer self-efficacy scores and performance. Performance was measured by grades achieved in a hands-on exam that covered database tasks. Students experienced less anxiety while learning if they demonstrated their computer skills independently and effectively (Hauser et al., 2012). Muilenburg and Berge (2005) surveyed university and college students who indicated they were motivated to learn online if they were confident in their ability to use technology. Nikitenko (2011) also surveyed 240 graduate and undergraduate students but found no significant correlations between students' attitudes toward online learning or blended learning and prior online experience. Similarly, Sorden and Munene (2013) found no correlations between blended learning satisfaction for 108 college students and their computer expertise or online course experience.

2.4.6. Employment Status

2.4.6.1. LBS Programs

Students' employment status and income often negatively affect attitudes toward learning in LBS programs (MTCU, 2014, CLLN, 2015). The British Columbia Ministry of Advanced Education (2005) reported that employed students were less likely to complete their programs due to time constraints, as were unemployed students with no financial supports which created monetary challenges. Financial problems for LBS students presented barriers to learning such as transportation and child care which prevented adult learners from attending face-to-face classes (Malicky & Norman, 1994; Pross & Barry, 2004) and created stress for adult students and interfered with their learning (Pross & Barry, 2004). Porter et al. (2005) reported that many adult LBS students were from low-income households who frequently changed jobs and had unstable housing, child-care and transportation. All of these factors had negative impact on LBS program participation.

2.4.6.2. Blended Learning

At least two studies in higher education looked at the relationship between employment status and student attitudes toward instruction (Giguere, 2009, Packham et al., 2004). Giguere (2009) looked for relationships between employment status and successful completion rates of 70 blended learning courses offered at the British Columbia Open University (BCOU). No differences were found between employment status (full-time student, employed part-time, employed full-time) and successful completion of blended learning courses. Packham et al. (2004) conducted semi-structured interviews with 20 undergraduate students to examine reasons for withdrawal from online courses. The results indicated that unemployed learners experienced more success in online courses

than those who were employed. Students indicated that time management issues related to the demands of the course combined with employment responsibilities interfered with their ability to complete courses.

At least two other studies reported that student persistence in higher education programs was influenced by employer support (i.e., Park & Choi, 2009; Willging & Johnson, 2004). Park and Choi (2009) surveyed 147 students to measure the effects of employer support on persistence in an online, university course. Of the 147 students, 98 persisted and 49 dropped out, and characteristics of these groups were compared. Students were more likely to persist in their courses if employers were supportive of the course demands. These results were consistent with Willging and Johnson's (2004) study which showed that student persistence in online learning was most affected by external factors such as employer support, changing jobs, and workload.

Identifying Gaps in the Research

The literature review suggests that a differentiated approach to program planning might be more effective, given multiple barriers to retention and success reported for various LBS and higher education programs (Angulo-Ruiz & Pergelova, 2013; Bernold et al., 2007; Campbell & Campbell, 1997; Falasca, 2011; Kuh et al., 2008; Shelton, 2003; Schofield & Dismore, 2010; Tinto, 1997; Wetzel et al., 1999; Wyatt, 2011; Zacharakis et al., 2011). Blended learning provides more opportunities for differentiated instruction than face-to-face instruction alone or online instruction alone (Ausburn, 2014; Fisher & Baird, 2005; Gülbahar & Madran, 2009; Nikitenko, 2011). However, research on blended learning has not been systematically conducted for LBS programs. LBS learners are a vulnerable group of students who often enter their programs with many barriers to learning that interfere

with their success. Programs that use a blended learning approach may have the potential to improve retention and success.

In addition, ABC Canada (2002) found that only a third of learners in adult basic education were using online technologies for learning and that a third of students were not interested in learning online. British Columbia Ministry of Advanced Education (2013) reported low access to technology in LBS programs. Given the lack of research of online learning in LBS programs, this present investigation of attitudes toward online learning in LBS programs could provide insight into an instructional approach to improve student success.

Individual differences such as age, gender, and level of education are demographics most often reported in the literature for face-to-face LBS programs (e.g., Pross & Barry, 2004; British Columbia Ministry of Advanced Education, 2005; Malicky & Norman, 1994; Quigley, 1998) but have not been examined for LBS blended learning environments. Demographics such as disability (physical and/or learning), computer skills, and employment status (unemployed, employed full-time, employed part-time) are considered to be barriers to success in LBS programs but are less documented in the literature for both face-to-face and blended learning programs. Further, an exploration of student attitudes toward blended learning in LBS programs would provide insight into instructional approaches that could improve retention and success for adult learners. This enhanced understanding can influence institutional policy and practice to ensure continuous program improvement and enhanced student retention and success.

Research Questions

This study, informed by the gaps in the existing literature, investigated the following three research questions:

1. What are the attitudes of adult learners in LBS programs toward blended learning?
2. What is the impact of blended learning on their perceived success in an LBS program?
3. What individual differences exist with respect to attitudes toward blended learning?

3. Method

Overview

In this study, quantitative and qualitative data were collected, following a convergent parallel mixed methods approach (Creswell 2014). A survey was used to collect the quantitative data about student attitudes toward face-to-face learning, student attitudes toward asynchronous learning, and student attitudes toward their perceived success in the program. Next, individual interviews were used to collect detailed qualitative data about student attitudes toward face-to-face learning, online learning and their perceived success as affected by these modes of instruction in the program. The information gathered was integrated to provide a comprehensive analysis of the research questions.

Participants

A total of 149 students (94 male, 55 female) enrolled in Literacy and Basic Skills (LBS) programs offered at three community colleges participated in the study. The age ranges for learners were 19-25 years (52%, n=77), 26-35 years (27%, n=40), 36-44 years (15%, n=22), 45-54 years (5%, n=7), and over 54 years (1%, n=1).

The courses taken included mathematics (n=48, 32%), science (n=38, 26%) and English (n=63, 42%). Seventy-seven percent (n=115) of participants were pursuing a post-secondary goal path, 15% percent (n=22) were interested in enhancing skills for employment, while 8% (n=12) were seeking apprenticeship. Twenty-seven percent (n=40) of participants reported having a physical and/or learning disability. These may or may not be disabilities that have been formally diagnosed by a medical doctor. LBS programs

usually have high numbers of students with disabilities as many applicants to take part in government assistance disability programs. LBS students are also considered to have a learning disability if they had an Independent Education Plan (IEP) during secondary school. Twelve percent of the students in this study (n=18) required assistive technology to access educational programs.

With respect to education level, 43% (n=64) of students had been out of education for more than six years while 57% (n=85) had been out of education for less than six years. Regarding highest level of education attained, 70% (n=25) of participants completed grade nine to 11, 43% (n=64) finished grade 12, 16% (n=24) had some form of post-secondary education, 21% (n=31) had a college diploma, and 3% (n=4) obtained a university degree. Thirty nine percent (n=58) of learners had a history of interrupted education. For all students who participated in this study, English was their first language and they all had the minimum level of literacy required for acceptance into LBS programs.

Regarding employment status, 13% (n=19) of participants had been unemployed for more than six years, 30% (n=45) have been out of work for less than a year, 12% (n=18) were employed full time, 33% (n=49) were employed part time, 37% (n=55) collected some type of government assistance. Program training supports were provided to participants that met the low income requirements. These supports include gas cards, bus passes and child care expenses. Twenty seven percent (n=40) of participants received training supports while 73% (n=109) of participants were not eligible or did not require training supports.

Research Context

Learners registered in academic upgrading at three LBS sites in Ontario during the September 2014 to December 2014 semester were invited to participate in the survey and interviews. Site A is a college of approximately 6,500 students located in a suburban region of approximately 333,000 people. Site B is a college of approximately 1,300 students located in a suburban region of approximately 41,000 people. Site C is a college of approximately 3,500 students located in a suburban region of approximately 90,000 people.

Instruction was delivered using a blended learning approach that provided face-to-face instruction with an online component at each site. Face-to-face instruction consisted of three hour classes scheduled two days per week, for 15 weeks. Learners registered for a maximum of two courses per 15-week semester, and chose from four subject areas: technical math, English, biology, and chemistry. Literacy learning was threaded throughout the curriculum for all LBS courses. Choice of courses was dependent on the learner's goal path and post-secondary program of their choice. Face-to-face class time was considered mandatory and consisted of instructor-led lectures, whole group question and answer sessions, one-on-one teacher assistance, student group activities, quizzes and tests.

The online component was not considered mandatory, but provided additional resources and support for students outside of the face-to-face environment. If students missed class they used online resources to catch up and submit assignments. The online learning was offered in an asynchronous format through the Blackboard learning management system. Literacy learning was also threaded throughout the online resources with a focus on digital literacy. Online resources provided clear guidance to supplement

the face-to-face learning and included videos and web sites to reinforce face-to-face content, course resources (e.g., lecture PowerPoints, podcasts), assignments and teachers provided communication and feedback through email and discussion board on Blackboard.

Data Collection Tools

3.4.1. Overview

Each student filled in a survey providing information about detailed demographic data (see Appendix B, Items 1 to 11). Attitudes toward blended learning in LBS programs were assessed using a face-to-face attitude scale (see Appendix A, Items 1 to 7) and an online attitude scale (see Appendix A, Items 8 to 12). Perceived success was measured using two scale items (see Appendix A, Items 13 and 14). One open-ended question on the survey asked students to describe how the program could better support their learning. Finally, students who were interviewed, were asked two questions regarding their attitudes toward face-to-face learning and online learning and three questions about how the program could better support their learning and success in education.

3.4.2. Tool Development

The survey items (see Appendix A) were developed based on themes pertaining to student attitudes toward face-to-face learning, student attitudes toward online learning, and student attitudes toward perceived success. The survey items were revised based on feedback from two graduate research supervisors and four LBS service providers. A draft of the survey and interview questions was then delivered to 10 adult LBS learners prior to the study, to establish the clarity and relevance of the questions from the point of view of the participant. Revisions were made to the survey items based on feedback from the 10 adult LBS learners. All survey and interview questions were written to accommodate the

literacy levels of all participants. However, given the different literacy levels for adult learners in LBS programs, the survey was delivered to small groups of learners so that each question could be read and explained as the participants completed the survey. The interview questions were developed based on the themes of the survey items to provide detailed explanatory qualitative data (see Appendix C).

3.4.3. Likert Scale Questions

Attitudes toward face-to-face learning were assessed using seven, 7-point Likert scale items (see Appendix A, items 1 to 7). These survey items asked the participants to assess organization, attendance, communication with other students, instructors, and tutors for learning, and preferences and ability to learn with respect to face-to-face instruction. The internal reliability coefficient, based on Cronbach's Alpha, was 0.70 for the seven items pertaining to attitudes toward face-to-face learning.

Attitudes toward online learning were assessed using five, 7-point Likert scale items (see Appendix A, items 8 to 12) and focussed on organization, participation, use of online activities, skill level, and preference and ability to learn with respect to online instruction. The internal reliability coefficient, based on Cronbach's Alpha, was 0.79 for the five items pertaining to attitudes toward asynchronous online learning.

Participants were asked to report about perceived program success by answering two, 7-point Likert scale items (see Appendix A, items 13-14) about the completion of their learning goals in the program and about their perception of achieved success in the program. The internal reliability coefficient was 0.82, based on Cronbach's Alpha, for the two items pertaining to perceived program success. When considering Cronbach's Alpha

values for measures used in social sciences (Kilne, 1999; Nunnally, 1978), the internal reliability coefficients for all three scales in this study were acceptable.

An open-ended question (see Appendix A, Item 15) completed the survey and provided more detailed information about how the program could better support their learning. Students provided comments about face-to-face learning, online learning and perceived success when answering this open-ended question.

3.4.4. Individual Differences

Demographic questions were included on the paper survey (see Appendix B, items 1 to 10) to help assess individual differences in LBS students' attitudes toward blended learning. Individual differences considered in this study were age, gender, level of education, time out of formal education, history of interrupted education (during elementary and/or secondary education), disability (physical or learning), use of assistive technology for learning, computer skills, employment status (employed part-time, employed full-time, unemployed), and use of program training supports (funds provided by program for costs associated with transportation and/or child care expenses).

3.4.5. Interviews

Individual interview questions were administered to 37 volunteer participants in November 2014 and December 2014 in their classrooms. All the participants who completed surveys were invited to take part in the interviews. All 37 students who volunteered and consented to provide more information about their attitudes were interviewed. Each interview consisted of five open-ended questions focussing on the contributions of face-to-face and online components to learning, as well as questions about how the program could better support student needs, what features helped students

persist to the end of the course, and what aspects of the program acted as barriers (see Appendix C). The procedure for conducting the interviews is described below.

Procedure and Data Collection

3.5.1. Consent

The principal investigator visited each site in November 2014 and December 2014 to provide potential participants in this study with a letter of invitation (see Appendix D) which described the study expectations should they agree to take part. The study was described in detail to the potential participants prior to them making the decision to participate. Students were assured that participation in the study was voluntary, anonymous and that no negative impact would result from their participation or non-participation. Participants, who wished to, completed the student consent form (see Appendix E). A total of 149 paper surveys (88% completion rate) and 37 individual interviews (22% completion rate) were completed out of 170 potential participants from all three sites.

3.5.2. Administration of Attitude Survey

The survey (see Appendix A) was administered at each site on three separate days. Accompanied by the course instructors, as the principal investigator I read and explained each question with groups of participants to ensure that all questions were clearly understood. Participants at each site took approximately 20 minutes to complete the surveys.

3.5.3. Administration of Interviews

All survey participants were given a copy of the interview questions ahead of time to help them decide if they would like to provide qualitative information about their LBS

program experiences. Participants who did not wish to answer the interview questions returned the blank question sheets to the principal investigator. All 37 participants who volunteered to answer the interview questions indicated that they would prefer to not be audio-recorded during the interview. Interview participants agreed to provide written answers to the interview questions. The principal investigator read the responses provided by each interview participant and asked the participants questions to clarify their hand written answers when the information provided was confusing. The interviews were conducted in the students' classroom after completion of the survey. Each interview took 20 minutes to complete. A unique number was assigned to each survey participant along with their consent form. For example, participant one was assigned the unique number P1. To ensure anonymity of interview data, this same number was assigned to the completed interview questions for those participants who also participated in interview.

Data Analysis

3.6.1. Attitudes toward Blended Learning

Face-to-Face learning. To answer research Question 1, "What are the attitudes of adult learners in LBS programs toward blended-learning", descriptive data (mean, standard deviation and frequency) was collected using the face-to-face learning scale items (see Appendix A, items 1 to 7).

Next, a content analysis was conducted on the qualitative data generated from the open-ended interview question "How did the face-to-face component contribute to your learning?" Their comments were placed into two categories: positive attitudes toward face-to-face learning and negative attitudes toward face-to-face learning. Sample comments were categorized into emergent themes to provide more detailed descriptions of

adult learners' attitudes toward face-to-face learning. The content analysis was conducted by the principal investigator at two different times and test-retest method determined no significant differences between the paired content analyses *(t*=0.63*, df*=186*, ns)*. Descriptive analyses (mean, standard deviation, and frequency) of the comments and sample comments were categorized to provide more detailed descriptions of adult learners' attitudes toward face-to-face learning.

Online learning. To answer research Question 1, "What are the attitudes of adult learners in LBS programs toward blended learning?" descriptive data (mean, standard deviation and frequency) was collected on survey items related to online learning (see Appendix A, items 8 to 12).

Content analysis was conducted on the qualitative data generated from the open-ended interview question, "How did the asynchronous online component contribute to your learning?" Comments were placed into two categories: positive attitudes toward online learning and negative attitudes toward online learning. Sample comments were categorized into emergent themes to provide more detailed descriptions of adult learners' attitudes toward online learning. The content analysis was conducted by the principal investigator at two different times and test-retest method determined no significant differences between the paired content analyses *(t*=0.64*, df*=163*, ns)*. Descriptive analyses (mean, standard deviation, and frequency) of the comments and sample comments were categorized to provide more detailed descriptions of adult learners' attitudes toward online learning.

3.6.2. Blended Learning and Perceived Success

To answer research Question 2, "What is the impact of blended learning on their perceived success in the LBS program?" descriptive data (mean, standard deviation and frequency) was collected for survey items related to their perceived success (see Appendix A, items 13 to 14). Next, a correlation analysis was conducted between the face-to-face learning attitude scale items and the total rate of their perceived success. Then, a correlation analysis was conducted between the asynchronous learning attitude scale items and their perceived success.

In addition, a content analysis was conducted on the qualitative data generated from the interview questions on meeting goals and persisting to the end of the course (see Appendix C – Questions 3 to 5). Comments were placed into four categories: positive attitudes toward perceived success and face-to-face learning; negative attitudes toward perceived success and face-to-face learning; positive attitudes toward perceived success and online learning; negative attitudes toward perceived success and online learning. The comments samples were categorized into emergent themes to provide more detailed descriptions of adult learners' attitudes toward perceived success and face-to-face and online learning. The content analysis was conducted by the principal investigator at two different times and test-retest method determined no significant differences between the paired content analyses *(t*=0.64*, df*=172*, ns)*. Descriptive analyses (mean, standard deviation, and frequency) of the comments and sample comments were categorized to provide more detailed descriptions of adult learners' attitudes toward perceived program success.

3.6.3. Individual Differences and Blended Learning

To address research Question 3, "What individual differences exist with respect to attitudes toward blended learning?" Correlation analyses were conducted for the total score of attitudes toward face-to-face learning, online learning score and the following individual characteristics: age, level of education, and time out of formal education. Next, one-way analysis of variance was used to examine differences in adult learners' attitudes toward face-to-face learning and in adult learners' attitudes toward online learning by employment status (unemployed, employed full-time, employed part-time). Lastly, independent t-tests were conducted to determine if there were differences in gender, disability, use of assistive technology for learning, use of program training supports for learning, and learners' history of interrupted education with respect to the total scores of attitudes toward face-to-face learning and online learning.

4. Results

Overview

Three research questions were addressed in this paper:

1. What are the attitudes of adult learners in LBS programs toward blended learning?
2. What is the impact of blended learning on perceived success LBS program?
3. What individual differences exist with respect to attitudes toward blended learning?

The results for each of these questions are discussed in turn.

Attitudes toward Blended Learning

4.2.1. Face-to- Face Attitudes (Survey Data)

Over 90 % of participants agreed or strongly agreed that attending face-to-face classes was important for learning, in-class communication with an instructor was important, and the organization of face-to-face classes met their learning needs. Almost nine out of 10 students agreed or strongly agreed they can learn more effectively through face-to-face instruction. Nearly two thirds of students valued face-to-face communication with their peers. Over half of the students felt communication with face-to-face tutors was important for learning and agreed they would like more face-to-face instruction. The students who indicated neutral responses neither agreed nor disagreed that the attitude item was important for their learning (see Table 1).

Table 1 Adult Learners' Attitudes toward Face-to-face Learning (n=149)

Survey Item	*M*[1]	SD	Disagree[2]	Agree[3]	Neutral[4]
Important for my learning	6.4	0.9	1%	95%	4%
In class communication with my instructors important	6.3	1.0	3%	94%	3%
Met my learning needs	6.2	1.0	1%	93%	6%
Learn more effectively	6.2	1.1	2%	89%	9%
In class communication with peers important	5.1	1.6	12%	65%	23%
Communication face-to-face with tutors important	5.0	1.7	13%	56%	31%
Would like to have more face-to-face instruction	4.9	1.5	11%	53%	36%

[1] Seven point Likert Scale (1-Strongly Disagree to 7- Strongly Agree)
[2] Somewhat Disagree, Disagree and Strongly Disagree
[3] Somewhat Agree, Agree and Strongly Agree
[4]Neither agree nor disagree

4.2.2. Attitude toward Face-to-Face (Qualitative Data)

Students provided 92 comments about face-to-face learning from the open-ended survey and interview questions. Eighty-four percent (n=77) of these comments were positive about face-to-face learning. Five themes emerged from these comments, including collaboration with instructors and peers, encouragement from instructor, preference for face-to-face classes, one on one learning, and instructor feedback. Each participant was given a unique number to maintain confidentiality. For example, participant one was designated as P1.

Thirty-one percent of the comments (n=24) indicated that **collaboration** with instructors and peers during class had a positive influence on their learning. Sample comments included as below:

> "The teacher gives us hints, short cuts and better explanations and even life experiences to explain the lesson." (P7)
>
> "The teacher could answer questions more clearly to help in my understanding." (P44)
>
> "Helps with fast and easy understanding and the teacher could answer questions more clearly to help in my understanding." (P107)
>
> "I learn best this way so I can ask questions and get further explanation." (P94)
>
> "I got the answers to questions that I have that I couldn't get from the online resources." (P101)
>
> "I like face-to-face better than online because I would quickly receive answers and other classmates could also help." (P100)
>
> "Questions are answered clearly by the instructor." (P14)
>
> "Question and answer periods were helpful and discussions with teacher and peers about relevant world science issues helped me to apply my classroom learning to the real world." (P105)

Encouragement from face-to-face instructors was mentioned as important for learning in 26% of positive comments (n=20). Sample comments included:

> "The face-to-face gave me a push to do my work and gave me support for my learning." (P67)
>
> "Teachers are very reassuring and build my confidence." (P64)
>
> "The teachers know me and know my learning style so it helps me to understand." (P70)
>
> "I felt comfortable going to all of my instructors if I had a question or problem with the material that was being presented to me." (P97)
>
> "Encouragement from instructor and peers in class was important." (P106)

"Encouraging face-to-face learning and teacher availability." (P133)

"Face-to-face classes encouraged me and kept me on track." (P109)

Seventeen percent (n=13) of the comments indicated that students **preferred face-to-face classes**. Sample comments included the following:

"I felt like being present during all classes was critical. When I missed classes I was always worried about getting behind or missing important information." (P5)

"Retention of concepts is better through face-to-face lectures." (P85)

"I learn better face-to-face than online." (P57)

"Face-to-face was helpful because it is easier when you hear the lesson as opposed to reading it myself." (P7)

"Face-to-face classes were well organized." (P148)

"This suits my learning style best." (P89)

Thirteen percent of the comments (n=10) mentioned that **one on one support** provided during classes was important for learning. Sample comments included as follows:

"I need to ask questions and have one on one support." (P101)

"The one on one support from my instructors has a huge impact on my success."

(P52)

"The instructor's one-on-one help in class helps me the best." (P58)

"I learn best in the classroom with the help of an instructor." (P96)

Students cited **feedback from instructors** as important for learning in 13% of comments (n=10). Sample comments included:

"It was great to get feedback and help if it was needed; face-to-face is a must in my opinion." (P6)

"Helped me to understand test errors." (P63)

Only 15% of comments (n=14) showed negative attitudes toward face-to-face learning. Themes that emerged were rigid class schedules and time management, student confidence, instructor teaching style and pedagogy.

Half of the negative comments (n=7) pertained to **rigid class schedules and time management.** Some comments were as follows:

"There is not enough time in class to get all the work done." (P37)

"Provide more flexible schedules for classes." (P57)

"Rigid class schedule is sometimes hard to keep due to outside responsibilities." (P45)

Half of the negative comments (n =7) pertained to **instructor teaching style and pedagogy** as follows as follows:

"Teachers should explain things more clearly and not talk condescendingly to students. Instructors need to be patient with students." (P141)

"Better review for tests is needed and less hands on labs." (P94)

"Classes could use more chalk board instructions, examples, in knowing how to deal with or work out certain problems." (P43)

"Take your time explaining your lecture. Don't speed through the material." (P13)

"More one on one help with assignments is needed." (P62)

"I am a physical and visual learner. More face-to-face teaching to match my learning style is needed." (P6)

4.2.3. Attitudes toward Online Learning (Survey Data)

Over 40% of the students agreed or strongly agreed that the organization of online activities met their learning needs. About one third of students agreed or strongly agreed that the activities were easy to use, that the activities were important for learning, and would like more online learning in the program. Almost one quarter of students thought

they could learn effectively through online instruction while 50% felt they were not able to learn online. The students who indicated neutral responses neither agreed nor disagreed that the attitude item was important for their learning (see Table 2).

Table 2Adult Learners' Attitudes toward Online Learning

Survey Item	*M*[1]	SD	Disagree[2]	Agree[3]	Neutral[4]
Met my learning needs	4.6	1.4	9%	43%	48%
Activities were easy to use.	4.6	1.3	6%	37%	57%
Important for my learning	4.4	1.6	15%	36%	49%
Would like more online	4.0	1.6	26%	29%	45%
Learn effectively through online instruction.	3.4	1.7	50%	23%	27%

[1] Seven point Likert Scale (1-Strongly Disagree to 7- Strongly Agree)
[2]Somewhat Disagree, Disagree and Strongly Disagree
[3] Somewhat Agree, Agree and Strongly Agree
[4] Neither agree nor disagree

4.2.4. Attitudes toward Online Learning (Qualitative Data)

Students offered 61 comments about online learning gleaned from the open-ended and interview questions. Sixty-one percent of these comments (n=37) were positive. Four themes emerged from the positive comments about online learning related to **time management, supplemental resources and support, learning skills,** and requests for **more online learning**.

Thirty-two percent of comments (n=12) indicated that the online component helped with **time management** so they could keep up with the course work when they were not able to attend face-to-face classes. Sample comments were as follows:

> "The online resources helped me to keep up with the material when I had to miss class due to work." (P96)

> "This helped when I could not get to class, I could still access material on line and not fall behind." (P94)

> "I would like more resources for learning on line. Being an adult learner, I cannot always make it to class due to work or prior responsibilities. Having an on line option to stay up to date with course work would be helpful in these cases. The lack of online learning made it more difficult when I was sick or working." (P12)

> "When I couldn't make it to class I could still access the material online" (P95)

Students described in 27% of the comments (n=10) that the online **resources** supported their learning outside of the classroom. Sample comments were as follows:

> "The online resources are remarkable. All of the extra worksheets, websites and videos all contributed to help me understand the material that the instructors have taught me in class." (P97)

> "The online resources gives me visuals and videos that I can access outside of class." (P101)

> "It helped me to understand the in class material and gave me support outside of class." (P102)

> "The technology advanced the course, gave me help outside of the classroom." (P103)

> "This provided more information and examples outside of the classroom." (P107)

> "It was helpful in Biology when I missed class." (P7)

> "I use blackboard to access course material and stay organized." (P5)

Students requested **more online learning** in 24% of the comments (n=9). Sample comments were as follows:

> "The online instruction was not overly effective and should be enhanced." (P143)

> "I believe on line learning is much easier for me than face-to-face at times. I would prefer more on line course work than what is currently available. I hope that more work for class could be done on the computer." (P60)

> "I would like an option to do more work online. This would be helpful for students that struggle with face-to-face instruction." (P148)

"More on line work would be better for me since I am shy." (P33)

Lastly, 16% of the comments (n=6) described that the online component contributed to specific **learning skills**. Sample comments were as follows:

"It helped me to improve my reading and understanding." (P44)

"It taught me different ways to solve problems." (P8)

"It was a great help and resource and a great tool to learn." (P6)

"The online component was necessary for research assignments." (P70)

"It helped me to complete my assignments." (P109)

Thirty-nine percent of the comments (n=24) were negative toward online learning. Two themes emerged from the comments as **avoidance of online learning** due to a preference for face-to-face learning and lack of confidence in **computer skills**.

Seventy-five percent of these comments (n=18) indicated that students avoided the online content because they preferred face-to-face instruction. Sample comments are as follows:

"I learn better face-to-face than online." (P57)

"I hate online learning. I can't do it. I need a classroom." (P2)

"This component did not contribute to my learning because I chose not to use it. I prefer face-to-face." (P3)

"Never used the on line component I prefer face to face." (P11)

The other 25% of negative online learning comments (n=6) indicated that the online component did not contribute to learning due to the students' lack of confidence in their **computer skills**. Sample comments are as follows:

"I am not confident in my ability to use computers so I avoided the on line content." (P106)

"I am not confident in my computer skills so this did not contribute to my learning." (P126)

"I learn better face-to-face and am not confident in my computer skills." (P141)

Perceived Success and Attitudes toward Blended Learning

4.3.1. Survey Data

Overall a majority of students perceived that they were successful in the blended LBS program. Eighty-three percent of participants (n=124) agreed that they had been successful in their program and 79% of participants (n=118) agreed that they had completed all of their learning goals in their program. There was a significant positive correlation between the total face to face attitude score and the total perceived success (r=0.26, p<0.01). There was no significant correlation between total online learning attitude score and total perceived success (r=-0.02, *ns*). There was a significant positive correlation between learners' confidence in their computer skills and total perceived success (r=0.24, p<0.01).

4.3.2. Qualitative Data

Students attributed their program success to face-to-face learning as indicated in 15% of comments (n=26). These positive perceptions emerged into a single theme: **support from instructors**. Sample comments are as follows:

> "This program is well made both online and face-to-face and nothing needs to change since it supports my goals." (P1)
>
> "Encouraging face-to-face learning and teacher availability." (P2)
>
> "Great face-to-face teachers that encouraged me to stay committed and continue to want to succeed." (P141)
>
> "Face-to-face teacher availability and support." (P51)

One negative comment about face-to-face learning pertains to the **rigid classroom schedules** (e.g., "Rigid class schedule made it, sometimes hard for me to get to class.").

Students gave positive feedback about online learning in 11% of comments (n=19). Most of these positive comments pertain to both **enhanced communication with instructors** and access to **resources** outside of face-to-face class time. Sample comments were as follows:

> "This program is well made both online and face-to-face and nothing needs to change since it supports my goals." (P1)
>
> "Communication with teachers using email helped me outside of class." (P7)
>
> "The online resources provided by my instructors and the tutoring services outside of class." (P97)

A negative success perception was indicated in only three of the online learning attitudes and those comments indicated that there was **not enough online learning options**. (e.g. "There was not enough online learning made it more difficult when I was sick or working.")

Individual Differences and Attitudes toward Blended Learning

4.4.1. Age

There was a significant positive correlation between age and the total face-to-face attitude score *(r*=0.38*, p*<0.01). Students who were older preferred a face-to-face learning approach more than students who were younger. No significant correlations were found between age and the total online learning attitude score (*r*= 0.39, *ns*).

4.4.2. Gender

An independent t-test revealed no significant differences between males (M = 39.5, SD =5.9, n= 55) and females (M = 40.3, SD =4.9, n = 93) with respect to total face-to-face attitude scores *(t* = 0.94, *df* =147, *ns).* There were no significant differences between males (M = 21.5, SD =6.1, n=55) and females (M = 20.7, SD = 5.9, n = 93) regarding total online attitude scores *(t* = -0.79, *df* = 147, *ns).*

4.4.3. Level of Education

There was no significant correlation between level of education and the total face-to-face attitude score *(r*=0.08, *ns).* A negative correlation was found between level of education and total online attitude score *(r*=-0.21, *p*<0.05*)*. As education level increased, preference for online learning decreased.

4.4.4. Time Out of Formal Education

A positive, significant correlation was found between time out of formal education and the total face-to-face attitude score *(r*=0.19, *p*<0.05*).* As time out of formal education increased, preference for face-to-face learning increased. No correlation was found between time out of formal education and total online attitude score *(r*=0.75, *ns)*.

4.4.5. Disability

An independent t-test revealed no significant differences between students with a disability *(M*=40.0, *SD*=6.1, *n*=39*)* and students with no disability *(M*=40.0, *SD*=6.1, *n*=110*)* with regards to total face-to-face attitude score *(t*=0.10, *df*=147, *ns).* An independent t-test revealed no significant differences between students with a disability *(M*=21.7, *SD*=6.8, *n*=39*)* and students with no disability *(M*=20.7, *SD*=5.7, *n*=110*)* with regards to total online attitude score *(t*=0.84, *df*=147, *ns).*

4.4.6. Assistive Technology for Learning

An independent t-test revealed no significant differences between students who needed assistive technology for learning *(M*=39.3, *SD*=5.4, *n*=18*)* and those who did not need assistive technology for learning *(M*=40.1, *SD*=5.3, *n*=131*)* regarding total face-to-face attitude score *(t*=-0.62, *df*=147, *ns).* An independent t-test revealed a significant mean difference *(t*=2.42, *df*=147, *p*<0.05*)* between students who needed assistive technology for learning *(M*=24.1, *SD*=5.7, *n*=18*)* and students who did not require assistive technology for learning *(M*=20.5, *SD*=6.0, *n*=131*)* with respect to the total online attitude score. Students who required assistive technology for learning rated online learning significantly higher than students who did not require assistive technology for learning.

4.4.7. Computer Skills

There was no correlation between computer skills and total face-to-face learning attitude score *(r*=-0.01, *ns)* or total online learning attitude score *(r*=0.16, *ns*).

4.4.8. Employment Status

The results of one-way ANOVA tests revealed no significant differences in face-to-face attitude scores when comparing participants' employment status of unemployed *(M*=42.9, *SD*=3.3, *n*=82*)*, employed full time *(M*=39.4, *SD*=6.0, *n*=18*)*, or employed part time *(M*=39.1, *SD*=5.8, *n*=49*) (F*=1.58, *ns)*. There were no significant differences in online attitude scores when comparing unemployed *(M*=21.0, *SD*=5.4, *n*=82*)*, employed full time *(M*=21.3, *SD*=5.9, *n*=18*)*, or employed part time *(M*=19.5, *SD*=6.0, *n*=49*) (F*=1.64, *ns).*

5. Discussion

The purpose of this study was to investigate LBS adult students' attitudes toward blended learning, perceived success in blended learning, and individual differences among students with respect to their attitudes toward blended learning. This study looked at the following three research questions:

1. What are the attitudes of adult learners in LBS programs toward blended learning?
2. How are the attitudes toward blended learning related to their perceived success in the LBS program?
3. What individual differences (age, gender, level of education, time out of formal education, history of interrupted education, disability, use of assistive technology for learning, computer skills, employment status, and use of program training supports) exist with respect to attitudes toward blended learning?

Each of these questions will be discussed in turn.

[redacted]Attitudes toward Blended Learning

5.1.1. Face-to- Face Component

In this study, over 90% of students expressed that the face-to-face LBS learning environment was important for their learning and met their learning needs. Attending face-to-face classes and in-class communication with instructors was important for their learning for over 90% of the students. Student survey responses placed less importance on communication with peers (65% of students) and with tutors (56% of students) in comparison with communication with instructors. Interview comments from 31% of LBS students indicated that a collaborative face-to-face environment was important for their learning, where the face-to-face instructor answered questions and provided one-on-one

support and feedback. Encouragement from instructors was mentioned by 26% of students as an important support for their learning. These results are consistent with the literature which indicated that students' attitudes toward face-to-face learning were positively affected by caring, motivating and resourceful teachers, collaborative and hands-on activities in the classroom, and one-on-one learning experiences (Quigley & Uhland, 2000; Reynolds & Johnson, 2014; Zacharakis et al., 2011). Also, studies in higher education showed that students' positive attitudes depended on the personal interactions with face-to-face instructors and peers (Hauser et al., 2012; Vance, 2012).

In this study, LBS students indicated that interactions with instructors (over 90% of students), tutors (56% of students) and peers (65% of students) were important for their face-to-face learning. These interactions were not relevant for the online component simply because the online social communication was minimal. Several studies indicated that students' attitudes are influenced by the degree of communication in the blended course design (e.g., Ausburn, 2012; Conceicao & Lehman, 2013; Fisher & Baird, 2005; Gülbahar & Madran, 2009; Tello, 2007). Specifically, students' attitudes toward online courses were affected by the amount of course related communications which included instructor feedback and social interactions online with instructors and peers (Muilenburg & Berge, 2005). The students in this study placed importance on communication in face-to-face classrooms for their learning. Having worked with LBS students for a number of years, the author speculates that enhanced course communication through an online component would also be important for students' learning if more emphasis was placed on the online format.

Only 15% of the interview comments about the face-to-face environment were negative. Half of these negative comments related to dissatisfaction with the face-to-face teacher's method of instruction. Some students felt that the instructors teaching style did not match their learning style. Half of the negative comments pertained to rigid class schedules and time management learning barriers. About 50% of students in this study indicated that they were not confident in their ability to learn online and 50% of student felt they would like more face-to-face instruction in the program. One could speculate that more support for online learning combined with face-to-face support might better address students' learning needs. The data from this study is supported in the literature in that adult learners prefer curriculum and pedagogy that support their different learning needs and time management needs (Bernold et al., 2007; Fisher & Baird, 2005; Gill, 2009; Hoskins, 2012; Packham et al., 2004; Rovai, 2002; Wyatt, 2011; Zacharakis et al., 2011). Blended learning could provide support for students' pedagogical needs and time management needs.

5.1.2. Online Component

Despite the importance placed on face-to-face learning, students in this study indicated that their ability to attend every class at the scheduled times was often impeded by situational barriers. In this study, 32% of students appreciated the online component because it allowed them to keep up with work when they were not able to attend face-to-face classes. Multiple studies reported time management as a consistent barrier to learning (Hayes, 1988; Malicky & Norman, 1994; Packham et al., 2004; Pross & Barry, 2004; British Columbia Ministry of Training, 2005). Other studies indicated that students preferred blended learning because of the convenience of online access and the support of face-to-

face instructors (Gill, 2009; Hauser, et al., 2012; Larson & Sung, 2009; Rovai & Jordan, 2004; Senn, 2008; Vance, 2012)

The online component also supported students' learning skills, such as, problem solving, research, reading, and understanding. The online resources supplemented their learning outside of the classroom and helped them to understand the material learned in the face-to-face classes. Multiple studies reported that students benefit from the extra resources and support provided by a blended learning environment (Hauser et al., 2012; Larson & Sung, 2009; Rovai & Jordan, 2004; Senn, 2008). The online component allowed for access to course material at a preferred time of day and supported students learning needs outside of the classroom.

Even though the online component for this study was not mandatory, 43% of the LBS students felt it met their learning needs, and 27% of students found the online resources benefitted their learning. However, 75% of the negative attitude reported by LBS students toward online learning pertains to avoidance of the online content completely, that the online content was not necessary or applicable to their learning, and that they preferred face-to-face learning. This finding is consistent with other studies in higher education that reported that not all students accessed all of the learning resources available (Campbell & Campbell, 1997; Schofield & Dismore, 2010; Shelton, 2003).

In this current study, less than 40% of LBS students agreed that the online activities were easy to use. Also, 25% of the negative comments toward the online component showed that LBS students avoided the online content, because they were not confident in their abilities to use technology. These results are consistent with other studies on barriers and attitudes toward online learning that indicated positive correlations between the

students' ability and confidence to use technology and the students' motivation to learn online (Muilenburg & Berge, 2005). One could speculate that providing support, guidance and training in technology would increase its relevance in student learning and participation, and hence improve their attitudes toward online learning.

Over 90% of students in this study placed importance on face-to-face learning in this study. However, 15% of the negative attitudes toward face-to-face learning related to pedagogy and time management barriers. Less than one-third of the LBS students in this study felt they could learn effectively through online instruction or indicated that they would want more online learning opportunities. Other studies reported that blended learning environments may reduce time management barriers and provide resources outside of the classroom through online support while offering one-on-one and face-to-face support for students (Ausburn, 2014; Lewis, 2010; Lim et al., 2007; Senn, 2008). Students in this study also indicated that these similar features were important for their learning and are areas for LBS programs to enhance when considering blended course design.

Students in this study reported positive attitudes toward blended learning when the online environment provided time management flexibility, supplemental resources, and support for learning skills. Negative attitudes toward blended learning emerged from rigid class schedules, instructor teaching style, and lack of confidence in computer skills. These results are consistent with those of other studies where students favoured the support and flexibility provided through blended learning (e.g., Gill, 2009; Hauser, Paul, & Bradley, 2012; Larson & Sung, 2009; Rovai & Jordan, 2004; Senn, 2008; Vance, 2012). Blended learning environments that incorporate support for use of technology have the potential to

reduce time management barriers for students while providing enhanced academic supports both online and face-to-face.

Perceived Success and Blended Learning

5.2.1. Face-to-Face Component

Over 80% of LBS students who participated in this study indicated that they achieved success in their program. There was a significant, positive correlation between student attitudes towards face-to-face learning and perceived success (r=0.26, p>0.01). Students mainly attributed their perceived success to the encouragement, support and availability of their face-to-face instructors who kept them focused on achieving their goals. This finding is consistent with Zacharakis et al. (2011) which reported strengths related to program success as the factors deriving from teacher-student relationship (e.g. cares, motivates, provided resources). Also, Reynolds and Johnson (2014) reported teacher-student relationships as contributing factors to success. Lastly, Quigley and Uhland (2000) found that student success was enhanced in face-to-face learning by instructor one-on-one support.

5.2.2. Online Component

There was no correlation found between student attitudes toward online learning and perceived success. However, 11% of students indicated that online learning contributed to their success through enhanced communication with instructors and by providing resources outside of the face-to-face classroom. Positive effects on student success were also reported for online learning environments that provided organized resources and supported the adult learner's need for communication and collaboration

with instructors and students (Ausburn, 2004; Conceicao & Lehman, 2013; Muilenburg & Berge, 2005; Willging & Johnson, 2004).

A number of LBS students also noted that the rigid class schedules would interfere with their success if they were not able to attend all face-to-face classes. In fact, 29% of students in this study thought that more online opportunities would help them keep up with course content when they were unable to attend face-to-face classes. These results are supported by other studies which reported that students most valued the flexibility of asynchronous learning environments (Ausburn, 2004; Conceicao & Lehman, 2013).

LBS students in this current study avoided the online content due to lack of confidence in their computer skills or their perception that the online activities were not easy to use. Also, this current study found a positive correlation between perceived student success and computer skills. Further, students in this study who required assistive technology for learning rated online learning significantly higher than students who did not require assistive technology for learning. These results are consistent with other studies which reported that students were more likely to experience frustration and drop out of online courses when technical assistance was absent (Conceicao & Lehman, 2013; Muilenburg & Berge, 2005; Willging & Johnson, 2004). Improved quality and quantity of online learning content and support could lead to increased access to online learning and improved student success.

Individual Differences and Blended Learning

Individual differences considered in this study were age, gender, level of education, time out of formal education, history of interrupted education (during elementary and/or secondary education), disability (physical or learning), use of assistive technology for

learning, computer skills, and employment status (unemployed, employed part-time, employed full-time).

5.3.1. Age

In this study, older LBS students preferred a face-to-face instructional approach. Some studies of LBS programs reported that older students were more likely to be successful in their face-to-face program than younger students (Pross & Barry, 2004; Quigley, 1998). On the other hand, some older students in LBS programs perceived their age as a barrier to learning (Zacharakis, 2011).

This study found no relationships between age and attitudes toward online learning. This is consistent with other studies that reported only weak or no correlations between students' age and attitudes toward online or blended learning environments (e.g., Nikitenko, 2011; Giguere, 2009; Sorden & Munene, 2013; Ashby et al., 2011). Packham et al. (2004) reported that older students were less likely than younger students to successfully complete online courses. One would expect this result, given that older students preferred face-to-face learning, as was the result found in this current study. However, Smith and Smith (2008) found that older adults were more likely to engage in asynchronous learning activities than their younger counterparts. These differing results indicate a need to conduct interviews and focus groups to further explore the impacts of age and other individual differences on students' attitudes toward blended learning.

5.3.2. Gender

In this study, there were no gender differences found for LBS students' attitudes toward face-to-face learning. This finding is consistent with the results of other studies of student attitudes toward face-to-face learning that reported no significant differences with

respect to gender (Smith & Smith, 2009). On the other hand, the absence of gender difference in this study, differ from other studies of LBS programs that reported higher drop-out rates for males than females (Pross & Barry, 2004; British Columbia Ministry of Advanced Education, 2005) and that males were more likely to express negative attitudes toward their classes than females (Hayes, 1988).

In this study, there were no gender differences found for LBS students' attitudes toward online learning. This finding is consistent with the results of two other studies of student attitudes toward online learning that reported no significant differences with respect to gender (Nikitenko, 2011; Sorden & Munene, 2013). Other studies of adults in higher education reported significant differences between male and female attitudes toward blended learning course design (Ashby et al., 2011; Ausburn, 2004; Gülbahar & Madran, 2009; Packham et al. 2004). These studies did not examine why there were gender differences and, given the varying results, this is a question worthy of investigation. Further research of the impacts of gender on preferred course design elements could provide insight into differentiated blended learning to meet students' individual needs.

5.3.3. Level of Education

For all students who participated in this study, English was their first language and they all had the minimum level of literacy required for acceptance into the courses offered for this LBS programs. In this study, no relationship was found between level of education and attitudes toward face-to-face instruction. For some LBS programs, students with higher levels of education were most likely to experience positive attitudes toward their program (Hayes, 1988; Malicky & Norman, 1994), Some students in LBS programs perceived their lack of a grade 12 education as a barrier to learning whether or not this had

a basis of fact (Zacharakis, 2011). Students in LBS programs have much lower levels of education than students in higher education which may account for these trends. Students in LBS programs perceive their level of education to be a barrier to learning which could be due to low confidence in their academic abilities.

In this study, as level of education increased, LBS students' preference for online learning decreased. Students with higher levels of education were also older students (r=0.24, p<0.01), so this trend could also be related to the fact that older students in this study preferred a face-to-face instructional approach. At least one other study reported a negative correlation between student attitudes toward online learning and level of education (Packham et al., 2004). Students in this study who had higher levels of education also reported greater perceived success (r=0.24, $p<0.$01). Further, students in this study who were confident in their computer skills also reported greater perceived success (r=0.24, p<0.01). . These results are consistent with at least two other studies of adults in higher education which reported that as level of education increased, preference for and success in blended learning also increased (i.e., Fenouillet & Kaplan, 2009; Giguere, 2009).

5.3.4. Time Out of Formal Education

For this study, as time out of formal education increased, preference for face-to-face learning also increased. Also, no relationship was found between history of interrupted education and attitudes toward face-to-face learning. Students typically enter LBS programs after being away from education for extended periods of time and/or having a history of interrupted education. Length of time out of education and history of interrupted education are related to past educational experiences and negatively affect attitudes toward future learning experiences (Hayes, 1988; Quigley, 1998; Pross & Barry,

2004). One could speculate that the longer adults were out of education, the greater their need was for one-to-one help with an instructor to build confidence in learning. However there was no previous research on this aspect.

In this study, no correlation was found between time out of formal education and students' attitudes toward online learning. Also, no relationship was found between history of interrupted education and attitudes toward online learning. Some LBS students in this study avoided the online content due to lack of confidence in their computer skills. One could speculate that provision of technical training could improve student attitudes toward online learning, which in turn would provide another academic support for students to access. Further research could provide more details about the blended learning supports preferred by students who have been out of formal education for long periods of time.

5.3.5. Disability

No differences in attitudes toward face-to-face learning were found for students with and without disabilities. Other studies of face-to-face learning reported that students' attitudes were negatively impacted by learning difficulties due to physical, mental, and/or learning disabilities, which were key barriers to persistence in LBS programs (e.g., Hayes, 1988; Porter, et al., 2005; Pross & Barry, 2004; Quigley, 1998).

No differences in attitudes toward online learning were found for students with and without disabilities. Students with disabilities in higher education expressed positive attitudes toward blended learning options (Couzens et al., 2015). This current study was conducted over a short timeframe and few students reported having disabilities, which could account for the results. A longer term study focused on students with disabilities is

needed to confirm the effects of disability on attitudes toward blended learning. LBS programs typically enrol students with low literacy levels, so individual learning disabilities and learning needs should be assessed at intake as key barriers to persistence.

5.3.6. Computer Skills and Use of Assistive Technology

This study found no correlation between attitudes toward teaching approach and computer skills. However students in this study who required assistive technology rated online learning higher than those who did not require assistive technology for learning. Students in this study who were confident in their computer skills also indicated greater perceived success. Studies in higher education indicated that improved computer skills positively affected attitudes toward blended learning environments (e.g., Ausburn, 2004; Gülbahar & Madran, 2009; Hauser et al., 2012; Muilenburg & Berge, 2005). As previously mentioned, LBS programs typically enrolled students with low literacy levels, so individual learning disabilities and learning needs should be assessed at intake as key barriers to persistence. LBS programs that provided learning accommodations through assistive technology and computer skills training could see improved retention and success in blended learning environments.

5.3.7. Employment Status

When considering employment status, no differences in attitudes toward face-to-face learning were reported for this study. Other studies indicated that financial problems for LBS students presented barriers to learning, such as transportation and child care which prevented adult learners from attending face-to-face classes (e.g., Malicky & Norman, 1994; Pross & Barry, 2004), and created added stress for the adult student which interfered with learning (e.g., Pross & Barry, 2004).

When considering employment status, no differences in attitudes toward online learning were reported for this study. At least one study in higher education reported no differences between employment status (full-time student, employed part-time, employed full-time) and successful completion of blended learning courses (Giguere, 2009). At least one study in higher education reported that unemployed students experienced more success than employed students in online programs (i.e., Packham et al., 2004). Two other studies in higher education reported that success in online learning was influenced by employer support (i.e., Park & Choi, 2009; Willging & Johnson, 2004).

LBS students in this study indicated that time management issues related to the demands of the course combined with employment responsibilities interfered with their ability to complete course work. However, this present study found no relationship between employment status and attitudes toward teaching approach. This could be because of the short time frame of the study to measure the effects of employment. LBS programs provide training supports for students with financial needs and barriers such as transportation and/or child-care. A longer term study is required to measure the impacts of employment status and training supports on attitudes toward blended learning.

5.3.8. Educational Implications

LBS students in this study considered face-to-face class attendance as important for their learning due to the communication and collaboration with instructors, tutors and peers. Students attributed their success in the program to the encouragement, support and feedback they received from their face-to-face instructors. Students felt that face-to-face communication and collaboration with tutors and peers was less important for their learning than the interaction with instructors. Interviews and focus groups in future

studies of blended learning are needed to understand the impacts of communication and collaboration with tutors, peers and instructors.

Some students in this study mentioned time management as a learning barrier that was reduced by the online component. Students also appreciated the online resources and enhanced communication with instructors outside of the face-to-face classroom. Given these preferences, it would seem that blended learning environments would offer the flexibility and support that is important for students.

Perceived success of LBS students in this study was positively correlated with their computer skill level. Also, older students with higher levels of education preferred a face-to-face learning approach. The LBS programs in this study included digital literacy training in the courses. Despite this, 30% of students in this study lacked confidence in their computer skills and 60% of students did not view the online activities as easy to use. This is consistent with other studies of LBS students that report avoidance of technology for learning (ABC Canada, 2002; British Columbia Ministry of Advanced Education, 2013). Students in this study not only lacked confidence in their abilities to learn online, but in their abilities to learn in general. Students in this study indicated in their interview comments that they appreciated the face-to-face interaction so that they could receive help with test results rather than with their learning objectives. This suggests that these students may not be as motivated as other learner population possibly due to negative past experiences and continue to look to instructors to define their learning. This is also consistent with other studies of LBS programs that report that students lack confidence in their abilities to learn due to past negative experiences (Quigley, 1998) and that student success is dependent on the one-on-one support from instructors (Quigley & Uhland, 2000;

Reynolds & Johnson, 2014; Zacharakis et al., 2011). Students in this study placed importance on face-to-face instructors for their learning needs which in turn could be, at least in part, the reason for their fear of using technology for independent learning. Also, these students that preferred face-to-face instruction were also older students which could be another factor influencing their avoidance of technology. This suggests the need to enhance the support for the use of technology and ensure ease of use design in blended learning. These added supports could lead to increased confidence in students' abilities and encourage LBS students to become independent learners.

In this study, individual differences were found in students' attitudes toward blended learning with respect to age, level of education, time out of formal education, and the use of assistive technology. No individual differences were found in students' attitudes toward blended learning with respect to gender, computer skills, disability, or employment status. Future studies should conduct interviews and focus groups to help understand the impact of individual differences on students' attitudes toward blended learning. Programs that consider students' individual differences at intake may be able to provide a differentiated instructional approach that will better support students' needs.

5.3.9. Limitations and Future Research

This was a short term study that followed a small, convenience sample (n=149) of LBS students at three different sites over one college semester. Most LBS students require more than one semester to complete their learning goals. Some LBS students drop out of their program and then return at a later date. However, given the time frame of this study, it was not possible to follow these students through to completion. Also, only learners who persisted throughout the study were included in the data. There was no way of knowing if

students had dropped out of their program after the study was done. A longer term study would be beneficial to address these limitations. Also, including data about both successful and unsuccessful students would provide more robust information.

The face-to-face component at all three sites was mandatory for course completion. However, each site and course had different instructors with different teaching styles. There was no way to control for this variation between sites and courses. This variation could have an effect on student attitudes toward their face-to-face learning environments. Further, the online component at all three sites sampled was not mandatory for student participation. Although each site used the same learning management system for online access, the online courses were not identical for each site. There was no way to measure and compare the quality of the online material between sites or to know how often each student accessed the online material. These are variables that could impact attitudes toward face-to-face and online learning and should be controlled in future studies.

The results of this study indicated that students' attitudes were positive toward the blended learning environment, when provided with face-to-face interactions that included collaboration with instructors and peers, encouragement from instructors, one on one learning, and instructor feedback. These results are consistent with other studies that reported student preferences toward communication and collaboration in blended learning (e.g., Ausburn, 2014; Conceicao & Lehman, 2013; Fisher & Baird, 2005; Gill, 2009; Gülbahar & Madran, 2009; Hauser et al., 2012; Lim et al, 2007; Lewis, 2010; Rovai & Jordan, 2004; Sorden & Munene, 2013; Vance, 2012). More research, however, is needed to determine if there are other design elements preferred by students in blended learning environments.

Students in this study attributed their success to encouragement from face-to-face instructors and enhanced communication and resources through the online component, which was also reported in other blended learning studies (e.g., Ausburn, 2004; Nikitenko, 2011). This study found that students felt their success was jeopardized by rigid class schedules and their lack of confidence in the use of technology. These results are also consistent in the literature (Ausburn, 2004; Nikitenko, 2011; British Columbia Ministry of Advanced Education, 2013; Muilenburg & Berge, 2005). Given that LBS students are such a vulnerable population of learners, more program support may be required than that for students in higher education. Institutions could see improved student success by delivering programs through blended learning that incorporates design features favoured by students and by providing support and training in the use of technology. This study, however, did not have a strong measure of student success. Future research should include more success questions on the quantitative scale and more qualitative data through interviews and focus groups. Also, interviews for this study were conducted with individuals who were at low literacy levels. Even though the questions were read and explained to the participants to ensure understanding, focus group interviews consisting of supportive group of individuals might have encouraged more authentic answers (Zacharakis, 2011).

The study reported results that have similarities and differences with the literature pertaining to individual differences and attitudes toward blended learning. Significant relationships were found for four out of ten individual student characteristics as follows: between age and face-to-face learning, between time out of formal education and face-to-face learning, between level of education and online learning, and between use of assistive

technology and online learning. These results are consistent with some studies that reported significant effects of individual differences on attitudes toward face-to-face and online learning (e.g., Hayes, 1988; Hauser et al. 2012; Muilenburg & Berge, 2005; Malicky & Norman, 1994; Pross & Barry, 2004). On the other hand, some studies reported that individual characteristics showed minimal effects on face-to-face and online learning (e.g., Chen et al., 2006; Park & Choi, 2009; Willging & Johnson, 2004). Further, there is a need for future research to conduct interviews and focus groups to explore the impacts of individual differences on attitudes toward blended learning. These similarities and differences indicate a need for program and policy makers to not only consider the best instructional strategies, but also to whom those strategies are most effective.

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Appendix A - Attitude Scales

Face-to-Face Learning Items

1. Attending face-to-face classes was important for my learning in this program
2. The organization of face-to-face classes met my learning needs in this program
3. I would like to have more face-to-face instruction in this program
4. I can learn more effectively through face-to-face instruction.
5. Communication with other students in class was important for my learning in this program.
6. Communication with my instructors in class was important for my learning in this program.
7. Communication with face-to-face tutors was important for my learning in this program

Asynchronous Online Learning Items

8. Participation in online activities was important for my learning in this program.
9. The organization of online activities met my learning needs in this program.
10. I would like to have more online instruction in this program
11. I can learn more effectively through online instruction
12. The online activities were easy to use

Program Success

13. I completed all of my learning goals in this program.
14. I achieved success in this program

15. Please provide more details about how this program could better support your learning.

Appendix B - Demographic Data Collection

Demographic Data Collection

1. Birth date
2. Gender
3. Highest level of education:
    a. College diploma/University degree?
    b. Some college/university?
    c. Grade 12 diploma?
    d. Less than grade 12?
4. Length of time out of formal education?
5. History of interrupted education: yes/no
6. Do you have an identified disability (physical and/or learning)? Yes/No
7. Do you require assistive technology or assistive devices to effectively access education programs? Yes/No
8. My computer skills are adequate. (7-point Likert scale item)
9. Employment Status:
    a. Unemployed
    b. Employed full time
    c. Employed part time
10. Did you use training supports during the program? Yes/No

Appendix C - Individual Interview Questions

1. How did the asynchronous, online component contribute to your learning?
2. How did the face-to-face component contribute to your learning?
3. How could this program better support you in meeting your goals in education?
4. What aspects of this program helped you to persist to the end of the course?
5. What aspects of this program led you to feel you might not be able to persist to the end of the course?

Appendix D - Letter of Information

An Examination of a Blended Instructional Approach and Barriers to Retention and Success in Adult Literacy and Basic Skills Programs.

Dear students,

I, Louise Markovich (Master of Arts Graduate Student at the Faculty of Education at University of Ontario Institute of Technology, Canada), am currently conducting research on barriers to retention and success and attitudes toward a blended instructional approach for adult learners in Literacy and Basic Skills programs. I cordially invite you to participate in this study.

Purpose and Benefits of the Research: The study aims to explore the personal, institutional and program barriers to retention and success for adult learners in academic upgrading programs. Understanding these barriers will help programs to better support learners.

Procedure: If you agree to participate in this study, demographic data collected during the registration process, milestone task grades, and final grades will be included in the study's data analysis.

If you agree to participate in this study, you will continue to take part in your regularly scheduled face-to-face classes and asynchronous, online activities. In addition to your regular curriculum, you will be asked to complete a survey and to take part in a one on one interview.

The research survey will be administered during your classroom hours while the one-on-one interview will be arranged outside of class. Some of you will be invited to join us in the interview for about 40 minutes. The interview will be conducted in person, or via Skype or telephone that is convenient for you. The interview will be audio-recorded and transcribed into written format. In the interview, you will be asked to talk about the barriers and supports you have encountered and your attitude toward the blended instructional approach during your course. You will also be invited to check the interview transcripts and offer clarification, elaboration, or any other feedback you deem pertinent.

Voluntary Participation and Right to Refusal and Withdrawal: Your participation is entirely voluntary. You have the right to refuse to answer any questions or withdraw from the study at any time and it will not affect your course grade or marks in any way, and with no effect on your academic status at your institution. And at your request I will destroy all data that you have provided. If you decide not to participate in this study, your instructor or I will provide you with instruction and classroom activities as part of the standard curriculum for the course during the instruction time. There is not any foreseeable risk to participate in this study. Please indicate on the attached consent your intention to participate or not to participate in this study. Should you decide to participate and then decide to withdraw at a later date, you may request to withdraw by emailing Louise.Markovich@uoit.ca . You will be reminded about your right to withdraw from this study prior to completing the survey and prior to the one-on-one interview. Please note that your right to withdraw must be requested prior to week 15 of the study. After this time, the data collected will be aggregated and will not be able to be removed from the analysis.

Confidentiality: I will maintain strict confidentiality to protect your identity. Within the study, I will provide you with pseudonym. The information provided will be used only for this research purposes. All the information collected will be stored in an encrypted external drive locked filing cabinets at our offices in the universities. Only we and our two research assistants who signed confidentiality agreement will have access to the audio-recordings, field-notes and transcripts. Under no circumstance, will your personal information be showed to anyone.

This study may result in publications of various types, conference presentations, and journal articles. Your name will not be attached to any form of the data that you provide, nor will it appear in any publication created as a result of this study.

Appendix E - Participant Consent Form

I have read, understood, and retained a copy of the Letter of Information concerning "An Examination of a Blended Instructional Approach and Barriers to Retention and Success in Adult Literacy and Basic Skills Programs.", led by Louise Markovich and Dr. Jia Li. All my questions regarding the study have been sufficiently answered. I am aware of the purposes and data collection procedures in this study. I will keep a copy of this form for my own record.

I have been notified that my participation in this study is entirely voluntary and my refusal to participate, refusal to answer any questions or withdrawal from the study will not affect my course grade or marks in any way. I understand that I am invited to participate in the survey and the interview; however I also understand that I can choose to participate in the survey only or decline to participate in the study completely.

I understand that should I decide to participate and then decide to withdraw at a later date, I may be withdrawn from the study by emailing Louise.Markovich@uoit.ca .

I understand that I will be reminded about my right to withdraw from this study prior to completing the survey and prior to the one-on-one interview.

I understand that my right to withdraw must be requested prior to week 15 of the study. After this time, the data collected will be aggregated and will not be able to be removed from the analysis.

I also understand if I decide not to participate in this study, the instructor will provide me with instruction activities as part of the standard curriculum for the course during instruction time.

I understand that the study will last for four months from September to December. The classroom and online activities will take place in and/or outside class. I understand that I will be asked to complete a survey and that I may be invited for a 40-minute interview, and my interview will be audio-recorded. During the interview, I will be informed that I can choose not to answer any questions. I have been told the steps that will be taken to ensure my confidentiality of all information to the extent possible. I have also been provided with the appropriate contact information in case of questions, concerns, or complaints about my participation in this study.

I understand that demographic information collected prior to the start of my course and that my milestone task grades and grade point average will be included in the study data.

I understand by consenting, I have not waived any rights to legal recourse in the event of research-related harm.

Please sign one copy of this Consent Form and return to Louise Markovich. Retain the second copy for your records. Any questions about study participation or to request to withdraw from the study may be directed to Louise Markovich at Louise.Markovich@uoit.ca . Any ethical concerns about the study, for UOIT students, may be directed to Ms. Margaret Nicoletti, Office of the Vice-President Research, Innovation and International, University of Ontario Institute of Technology (UOIT), Tel: 905 721 8668 ext. 6230, Room CC 2330, email: margaret.nicoletti@uoit.ca.

Please select one option:

☐ I agree to participate in the study described above.

☐ I would like to receive a summary of the report when the project completes.
☐ I do not agree to participate in the study described above.
Student's name (please print): _____
Student's email address (please print):_____
Signature: _____. Date:_____