Students' perceptions of the learning affordances, impacts and challenges of blended language learning

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Abstract

Blended language learning, the integration of technological tools into physical classroom teaching, has gained increasing significance, especially in higher education. Although blended learning (BL) is favoured by many higher educational institutions, past research examining the benefits of blended learning showed varied results. Despite the development of different technologies, the effectiveness of BL has not been enhanced over the decades. Drawing from the discovered issues, research called for the contributions of technology in different learning conditions to seek an optimal approach of applying technology into face-to-face teaching in BL courses. The present study applied Interaction Hypothesis, Sociocultural theory and Constructive theory as a theoretical framework to investigate learners' perceptions of the BL environment including learning affordances and impacts of blended language learning as well as challenges they have encountered. A mixed research approach consisting of an online questionnaire and interviews were employed. A total of 30 English language learners from the School of Continuing Studies of a major university in Canada participated in the study, among which eight language learners with different backgrounds were interviewed. Results showed students' positive perceptions of BL course in terms of its learning affordances of effectiveness, flexibility, increased collaborative work opportunities. However, challenges, namely the lack of online system training, non-interactive online exercises and isolation of web-based learning from classroom learning were detected. To maximize the learning effectiveness and learners' satisfaction, it is suggested to (1) provide students with sufficient technical training and support (2) design more engaging online activities. Also, it is strongly suggested to provide teacher professional training on the effective usage of educational technology in BL environment.

Résumé

L'apprentissage hybride (Blended Learning), c'est-à-dire l'intégration d'outils technologiques dans l'enseignement en classe, a acquis une importance croissance dans l'enseignement des langues, en particulier dans l'enseignement supérieur. Bien que l'apprentissage hybride (BL) soit préféré par de nombreux établissements d'enseignement supérieur, des recherches antérieures portant sur les avantages de l'apprentissage hybride ont montré des résultats variés. Malgré le développement différentes technologies, l'efficacité de la BL n'a pas été améliorée au cours des décennies. S'appuyant sur les problèmes découverts, la recherche a appelé à la contribution de la technologie dans différentes conditions d'apprentissage afin de proposer une approche optimale pour appliquer la technologie à un enseignement en présentiel dans des cours de BL. La présente étude a appliqué l'hypothèse d'interaction, la théorie socioculturelle et la théorie constructive en tant que cadre théorique permettant d'étudier les perceptions des apprenants sur l'environnement BL, y compris les avantages de l'apprentissage et les impacts de l'apprentissage hybride des langues, ainsi que les difficultés rencontrées. Une approche de recherche mixte a été utilisée : elle consistait en un questionnaire en ligne et des entretiens. Au total, 30 apprenants de langue anglaise de l'École d'éducation permanente d'une grande université canadienne ont participé à l'étude, parmi lesquels huit apprenants de langues d'origines différentes ont été interviewés. Les résultats ont montré que les étudiants avaient une perception positive du cours utilisant la BL, car cela confère efficacité, souplesse et possibilités de travail en collaboration accrues. Toutefois, des problèmes ont été détectés, à savoir le manque de formation à propos du système en ligne, d'exercices en ligne non interactifs et de l'isolement de l'apprentissage en ligne versus l'apprentissage en classe. Pour maximiser l'efficacité de l'apprentissage et la satisfaction des apprenants, il est suggéré (1) de fournir aux étudiants une formation et un soutien techniques suffisants (2) afin de concevoir des activités en ligne plus engageantes. De plus, il est fortement suggéré de (3) dispenser une formation professionnelle aux enseignants sur l'utilisation efficace des technologies éducatives dans l'environnement BL.

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CHAPTER 1

Introduction

1.1 Introduction

Over the last decade, Blended Learning (BL), which features the infusion of technology into traditional teaching approaches, has been gaining increasing popularity in higher education. It has been pointed out that lower costs and increased accessibility of hardware and software are some possible reasons for the increased use of BL in educational contexts (Hockly, 2018). A Garrison and Vaughan (2008)'s study defined BL as "the thoughtful fusion of face-to-face and online learning experiences" (p.5) and goes on to say that its goal is to combine the strength of both an online component and in-class teaching to create a unique learning experience. This "fusion" promotes a transformation of teaching and learning approaches which can enhance active as well as self-directive learning opportunities (Dori & Belcher, 2005). From past research on the use of BL and its benefits, it has been found that students gain positive attitudes and increased motivation which leads to greater autonomy in the learning process (Banditvilai, 2016). In another study by Garnham & Kaleta (2002) where teachers who applied blended learning were interviewed, it was reported that compared with traditional classroom learning, students performed better on writing papers, in exams and on projects.

Apart from having positive merits, there are also some weaknesses in the use of BL. As such it is also important to mention of the setbacks in using this form of learning, for one thing through some comparative studies done, the results obtained were inconsistent. At this end, Grgurovic´'s (2017) meta-study of blended language learning reports that comparative studies published between 2006 and 2013 overwhelmingly demonstrated "no statistically significant

differences... between learners in non-blended and blended classes" (p. 154). Some scholars against comparative studies of BL for the reason that the presence of uncontrollable variables might affect the results. These variables include the varying types of instructions in face-to-face teaching, the varied ways of integrating technology and the use of different technological tools in disparate learning contexts (Grgurovic´, 2017; Sharma, 2017). This view is also supported by Hockly (2018), who argues that:

"the wide range of contexts in which blended learning is implemented, the multitude of factors that can affect language learning, and the different forms that blended language learning can take, make comparisons between studies challenging, and firm conclusions about its effectiveness are difficult to draw." (p.99).

Another line of research which used non-comparative methods examined the design, implementation of BL and students' and teachers' attitudes, and more specifically, how this learning approach supports and improves learning performance. It also questions why BL should be provided to learners by examining the suitability of course design and the capacity of technology to achieve learning goals. The term "affordances", though having divergent indications by scholars, was defined by Norman (1988, p.9) as "the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used". Gaver (1991) expands on this, purporting that "the notion of affordances as a way of focusing on the strengths and weaknesses of technologies with respect to the possibilities they offer the people that might use them" (Gaver, 1991, p. 79). Furthermore, those who adopt BL are usually teachers who bring with them their own culture, experiences,

intentions and social contexts. The merits of this concept are best summed up by Blin (2016, p.43):

"The concept of affordances is probably most useful to CALL [Computer-assisted Language Learning] researchers and designers seeking to improve the usability, usefulness, and user experience of CALL systems, and to support language learners in their interactions with computers and other speakers of the target language." (p.43).

As mentioned earlier, the wide range of blended language learning modes makes it a challenge to examine its effectiveness and benefits by comparing the results with traditional classroom teaching. Therefore, a more appropriate approach to understanding how BL can support and enhance learning is to investigate students' reflections of their learning experiences. Such perception studies are significant because students need to be able to see the value and aim of applying technological devices in a BL environment. It has been reported that students' positive perceptions of BL experiences are related to reduced dropout rates, a boost in learning outcome, and other possible results such as enhanced skills and increased motivation in their chosen field (López-Pérez et al., 2011). Drawing on the scarce information about the use of technology in blended courses, Gleason (2013) calls for more qualitative descriptions of learning situations in blended language teaching environments in order to capture a more complete context of the learning process.

Numerous studies have also been carried out to investigate students' perceptions on blended language learning, and while findings revealed that feedback was generally positive, students also expressed concerns. For example, Grgurovic´ (2017) found that challenges students faced which include technical issues, communication difficulties and lack of self-study skills.

Ja'ashan (2015) discovered setbacks of BL such as time constraints, as more time is needed in online interaction via email or discussion board compared to only classroom interaction. In another study by Tosun (2015), it was found that students prefer traditional classroom teaching even though the BL satisfies their needs, the main reason given was the learners' lack of motivation and self-discipline. Other concerns are linked to technology, i.e. slow internet connection, or no data when needed.

Understanding learners' challenges is of great significance, as it is a way to get to know their needs which in turn provides insights into how to improve blended language learning environments. At this end, Johnson & Marsh (2014) call for more research to discern students' perceptions of blended learning environments in order to address issues that create negative impacts on their learning. They noted that more substantive conclusions will be established through the variations found for individual cases as researchers conduct more studies on blended learning. This study aims to contribute to understanding student's needs and exploring ways for improvement in a blended learning environment.

1.2. Research Questions

The research questions addressed in the present study are:

1. What are higher education students' perceived learning affordances of BL in intensive classes?
2. How does BL affect higher education students in intensive classes?
3. What are the higher education students' challenges and suggestions for improvement in intensive learning environments?

1.3 Significance of the Study

It is hoped that through this study, some insights might be gained on the students' learning experiences and their view and understanding of effective BL environments through an examination of perceived learning affordances in addition to shedding more light on the challenges and impact of the BL process, particularly in the language learning context.

It is also hoped that the results of this research could inform language instructors of the value of blended language learning from the students' perspective. The students' voices might help instructors reflect on their teaching approach which is considered to be one of the crucial factors in designing a more effective language course. Finally, based on the students' reflections and the expected reactions from instructors, universities and language institutions will have more information to design a more satisfactory and effective language learning environment which would hopefully help reduce high dropout rates in the future.

1.4 Structure of the thesis

This thesis consists of five chapters. The first chapter informs the problem and describes the purpose and significance of the study. Chapter Two provides a comprehensive literature review related to all concepts, theories and issues related to BL, while Chapter Three describes the methodology of the study. Chapter Four reports the results, and Chapter Five discusses the results of the study. The thesis closes with Chapter Six, which provides the conclusion, summary of findings and the study's limitations as well as implications and recommendations for practice in a BL environment and future research.

CHAPTER 2

Literature Review

This chapter reviews the literature relating to learning a second language with the aid of technology, more specifically, on learning affordances and issues in BL environments. I divide this chapter into three main parts. The first part provides the origin of BL, various definitions of BL and BLL, the relation of BLL with CALL, and the models of BLL available in current language courses. The following part focuses on the concept of educational technology in which its definitions, taxonomies and pedagogical uses are reviewed. The third part introduces the concept of learning affordances, reviews research on the impact of learning affordances in BLL environments and discusses the issues of BLL examined in prior research, particularly the challenges faced by students.

2.1 Definition of Blended Learning

For decades, blended learning (BL) was employed in industries and workplaces as a type of training program for employees and has become increasingly popular in educational fields with the development of technology. BL originated from distance education, sharing a common goal of supporting students who are not able to attend classes full time. Distance education has a history of almost two centuries (Spector et al., 2008). However, educating or training people who are not physically present is still a challenge, hence the need for improvement despite the popularity of online learning.

Alternatively, BL emerged to address feelings of detachment that may develop in students of fully online learning due to a lack of interaction with their instructors. (Carrasco & Johnson, 2015). Each scholar appears to have their own interpretation of the definition of BL. Blended Learning is generally defined as a combination of the traditional face to face learning

system and various forms of online learning using computer-based technologies (Graham, 2006). According to Mantyla (2001), the use of two or more approaches to deliver information in order to enhance learning effectiveness and the learning experience is called blended learning.

However, Graham, Allen and Ure (2003) argue that to define BL as the use of more than one instructional modality or delivery media seems too broad and vague. They explained that in any teaching process, instructors use at least one instructional method, this would imply that all learning systems could fall under the umbrella of BL.

Some scholars argue that defining BL as merely combining face-to-face and online learning is far from accurate. They focus on the interconnection between classroom learning and online learning. For example, Hofmann (2011)'s definition of blended learning stresses the importance of combining the two methods "for a specific objective." That is to say, simply blending the available technology into face-to-face instruction is not blended learning, rather the way in which the blending best facilitates content learning is the prerequisite of blended learning. Likewise, Garrison and Vaughan (2008) defined blended learning as "the thoughtful fusion of face-to-face and online learning experiences" (p.5). They pointed out that the strength of each method should be combined in order to create a unique learning experience to promote the transformation of teaching and learning approaches. Correspondingly, Glazer (2012) emphasizes the importance of building a connection between the two components by stating "The challenge of blended learning is to link, or blend, what happens in each medium so that face-to-face and online activities reinforce each other to create a single, unified, course" (p.1). These definitions share the common belief that: (1) the approach used to integrate technology in classroom teaching should be purposeful, and (2) the precondition to reach this goal is to have sufficient knowledge of the attributes of technological tools.

This review shows that there is no consensus to be found regarding the definition of BL. The definition that is most appropriate to the current study is consistent with a precise definition of BL by Yoon and Lee (2010): "bringing together the positive attributes of online and offline education, including instructional modalities, delivery methods, learning tools etc.…" (p.180). Considering that the purpose of this study is to investigate learners' experiences of learning language using BL, with a focus on their perceptions on the benefits and impact of technology in learning as well as the challenges they encountered; therefore, the instructional methods in the BL environment, especially the application of each technological tool, are paramount factors in the present study.

2.2. Blended language learning (BLL)

Blended learning in language education often refers to the combination of two instructional modes such as face-to-face interaction and computer-assisted language learning (CALL). Blended language learning is derived from CALL, which is widely known as the use of educational technology for the purpose of learning an additional language (Gruba et al. 2016). Neumeier (2005) stated that the definition of blended language learning, combining the two major modes of face-to-face and online instruction, is not as clear-cut as it seems. She explained that the use of technology has become prevalent in classrooms, indicating that face-to-face instruction could include the use of computers as well.

Gruba et al. (2016) situated blended language learning as a category under the field of CALL and identified CALL as "an established sub-discipline of applied linguistics, concerned with the use of technology in language learning" (p.3). According to Gruba et al. (2016), the role of CALL has been viewed from three different perspectives. From the Behaviorist perspective, CALL is used to enhance memorization, highlighting the rote learning of grammar and

vocabulary. From the Cognitive view, applying what they have earned through the use of a computer helps to train the learners' language skills. The Social view is the most popular one, it focuses on using technology for purposeful interaction between learners and the computer, and learners with their peers (Thomas et al., 2012).

Neumeier (2005) gave examples of sub-modes of CALL available for integration such as "web-based self-access learning material, e-mail, chat, Multi User Dungeon Object-Oriented (MOOs), message boards, net meeting and Personal Digital Assistants (PDAs)" (p.164). In blended courses, instructors can integrate one or more CALL sub-modes successfully with face-to-face depending on the learning contexts and objectives. The adoption and combination of various CALL modes and sub-modes allow for a variety of possibilities of implementation in terms of pedagogical factors and course design.

2.2.1 The models of Blended language learning

A popular model of blended language learning adopted by many institutions is the one which divides face-to-face learning and online learning by the percentage of time dedicated to each instructional component (Hockly & Clandfield, 2010). According to Sharma (2017), typically the categories of a combination of face-to-face and online learning include (1) (70%-30%) mostly classroom learning with online learning supporting classroom learning; (2) (50%-50%) a hybrid model where classroom teaching and online learning are equal; (3) (20%-80%) mostly online work, with occasional classes. Different modes cater to learners with different needs, for example, the third type fits adults or full-time workers who are looking for a structured learning experience but have limited time to commit to language learning.

Apart from the time distribution difference, the relation between the content of face-to-face teaching and online learning can be varied as well. Sharma (2017) pointed out that

depending on the course design, the materials used in classroom teaching might range from having no relation with the online instructional content to being closely connected with the learning journey students experience in the online environment.

However, when it comes to the question of "what is the best blend?" most researchers stated that there is no perfectly "right" blend, because CALL is "context-specific" (Levy & Stockwell, 2006, p. 234). Anderson (2018) claimed that in foreign language education, the choice of mode is more important than in content-focused fields such as engineering. That is because moving the lessons online is too challenging for learners who are in the progress of developing their basic language skills (e.g. listening, speaking, reading and writing). Anderson's stance wherein consideration of the learning context should be a key factor when designing blended courses is not unique. Neumeier (2005) emphasized the need to consider learners' and teachers' dispositions, aptitudes and attitudes serve as a starting point in the design and evaluation of BL courses. In her proposed framework of parameters specific to BL, she suggested that the choice of a "lead mode", which dominates the learning process, should be made after assessing learning goals, students and teachers' needs and capabilities, and the infrastructural facilities available. The concentration on a "lead mode" provides a focused and structured learning environment which allows for a clear and effective instructional goal.

2.3 Educational technology

2.3.1 Definition of educational technologies

The use of technology in schools and higher education was a novelty in the 1970s-1990s. However, to learners in the 21st century, the implementation of technology in learning is not new anymore. The definition of technology in CALL literature differs greatly. Some scholars define it in a simple and straightforward way; for example, Erben, Ban and Casteneda (2009)'s: "technology refers to any electronic device used in the classroom" (p.202). Conversely, Zhao

(2003) states, “technology is an ill-defined concept that encompasses a wide range of tools, artefacts and practices, from multimedia computers to the internet, from videotapes to online chatrooms, from web pages to interactive audio conferencing” (p.8).

Gruba and Hinkelman (2012) assert that instead of viewing educational technology as simply a tool, a wider view should be imposed as this will enable a better understanding of the learning environment in conjunction with technology designed to be used to enhance learning. Similarly, Jonassen, Howland, Marra and Crismond (2008) argue for this wide definition: *“Technology consists of the designs and the environments that engage learners. Technology can also consist of any reliable technique or method for engaging learners, such as cognitive learning strategies and critical thinking skills.” (p. 12)*

From a different perspective, Gruba, P. et al. (2016) drew attention to perceiving the use of technology in teaching and learning along a continuum. At one side of the spectrum, the concentration is on the effectiveness of the implementation of technology to achieve educational or learning goals and at the other end, the concentration is on how well the technology integrates into the entire program.

In the present study, I will look at the learning environment as a whole, taking into consideration both the students’ perception of the effectiveness of the use of technology in combination with classroom learning as well as how well the technology is integrated into the blended learning environment. Thus, educational technology, in this study, can be defined as related tools and processes implemented to facilitate learning performance.

2.3.2 The taxonomy of educational technologies

In order to properly apply technological tools into blended learning, which will be more likely to lead to an efficient and effective learning result, it is necessary to understand the basic

nature, function and application of educational technologies. An efficient way for educators to have a systematic knowledge of technology is to understand the taxonomy of educational technologies. Scholars categorize educational or learning technologies in various ways. One approach categorizes technologies from the tool-centered view, that is, by focusing on the attributes of the technological tools.

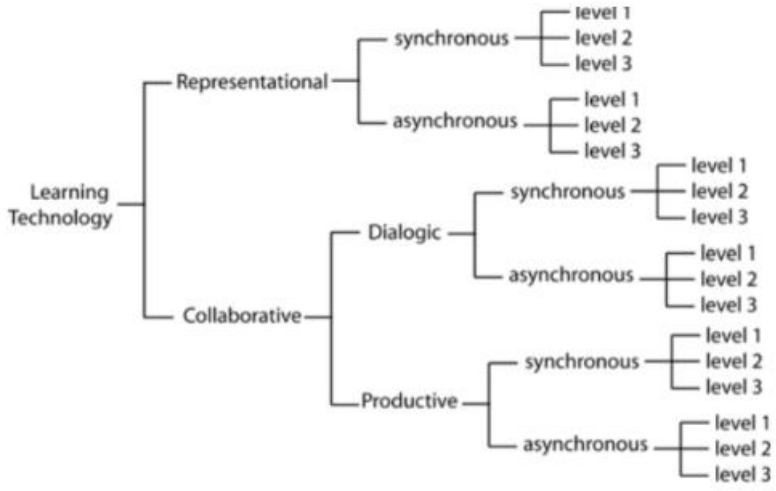


Figure 1 Categories of Educational Technologies (Adapted from Caladine, 2006)

Caladine (2006) came up with a comprehensible model for the taxonomy of learning technologies by looking at the nature of communication technology and reviewing literature in the field of Distance Learning. He proposed that learning technologies can be broadly categorized into two types (1) “one way” representational learning technologies, and (2) “two way” collaborative learning technologies. Based on their attributes, representational learning technologies then can be further categorized into synchronous and asynchronous.

Synchronous technologies allow technology-based learning to occur at the same time with real-time teaching. Videoconference is a typical example of synchronous technology because it allows teachers to deliver the learning content at the same time the students receive the

information even though all parties are at different places. Asynchronous technologies cover learning that occurs at different times and/or from different places. For example, a discussion board is an example of asynchronous technology as it permits teachers and students to post their responses at different times.

Collaborative technologies embrace two sub-categories: “dialogic” and “productive.” Collaborative (dialogic) refers to the use of technology as a tool for students to share and exchange their ideas, such as editing and sharing tools in Google Docs. Collaborative (productive) indicates websites or software that allow students to collectively complete a project and finally publish it which then enables them to receive comments and feedback from peers or experts. e.g. wikis, blogs. This taxonomy is closely related to my field of study and it will be referred to in this thesis.

2.3.3 Pedagogical use of technology in BL

To have a better understanding of the entire BL environment, it is necessary to look at the categories of technology and the purpose of integration from a wider perspective. Gruba and Hinkelman (2012) call for a wider definition of technology in the field of education. They argued that technology should not be viewed simply as a tool, instead, any learning environment that involves the use of technology should be taken into consideration such as the combination of face-to-face interactions with activities designed to utilize technological tools within the classroom space. From a pedagogical and “environment-embedded” view, Gruba and Hinkelman (2012) come up with an expanded framework which includes five dimensions of technology: actions, groupings, timings, texts and tools.

Table 1 *Five core dimensions*

Actions	narrative, interactive, adaptive, communicative, and productive;
Groupings	individual, pair and collaborative configurations and spaces;
Timings	synchronous and asynchronous; intensive and intermittent pacing;
Texts	static and dynamic, monomodal and multimodal displays;
Tools	physical devices and software applications.

(Adapted from Gruba & Hinkelman, 2012, p. 17)

Gruba and Hinkelman's (2012) framework is based on Laurillard's (2002) 'media forms' which focuses on the pedagogical use of technology. The actions refer to the purposeful acts that students and instructors are experiencing in the learning process. These actions serve as determiners of which of the other four dimensions (grouping, timing, texts and tools) will be selected based on the specified actions to construct the blended learning approach. The table below presents the instructional attributes of technologies for both teachers and students in a blended language learning environment.

Table 2 *Type of pedagogical actions under a dimension of education technologies*

Types of actions (Laurillard, 2002)	Teaching action	Learning action (Laurillard, 2002)	Examples of instructional technologies
Narrative	Presenting	Apprehending	Lectures
Interactive	Questioning	Exploring	Pair-work dialogues, quiz with feedback
Adaptive	Modelling	Practicing	Role play, tutorials
Communicative	Facilitating	Discussing	Discussion board
Productive	Coaching	Expressing	Publishing

(Adapted from Gruba &Hinkelman, 2012, p. 18)

These actions can be applied in both face-to-face and online learning. In a blended language learning environment, teachers can design the activities based on the pedagogical purposes and combine the usage of technological tools with traditional teaching according to their beneficial characteristics. Gruba and Hinkelman (2012) provide detailed information and examples of how teachers can integrate the components of online and classroom teaching seamlessly and with enhanced efficiency. Take the action of narrative for example, one practical approach to integrate technology is by uploading the recordings of live lectures on the learning system or providing students with links of textbooks as complementary learning material. Communicative action happens when learners use technologies to interact with peers or instructors. For instance, online discussion forums and videoconferencing allow students to communicate with students in another country. Whereas in face-to-face teaching, teachers could design activities like 'role play' for increased communication opportunities (Gruba and Hinkelman, 2012).

2.4 Learning affordances

2.4.1. Definition of learning affordances

The term "affordance" has been widely used in studies of human-computer interaction (HCI), educational technology, CALL research as well as the integration of digital tools into the context of education; however, scholars have yet to reach a consensus on its definition (Blin, 2016). Ecological psychologist Gibson (1986) was the first person to introduce the term to describe the possibilities of what the environment could provide to the animal, and it was then brought to the HCI community by Norman (1988) who defined it as "the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used" (p. 9). Gaver (1991) expands on Norman (1988)'s definition and

explored “the notion of affordances as a way of focusing on the strengths and weaknesses of technologies with respect to the possibilities they offer the people that might use them” (p. 79).

According to Vyas et al. (2006), the concept of affordance can be interpreted from the cognitive perspective which informs how various identifiable technology attributes can contribute to the strength of a course design, whereas post-cognitivists value interaction-centered learning and posit that affordance occurs when users actually interact with technology. Norman (1988) emphasized that the perceived affordance is more important than the actual affordance, because an individual’s perceived affordance determines the possible actions or performance in the learning process or signal how these performances could be achieved.

Affordance in educational fields often refers to the relationship between properties of an educational intervention and the abilities or characteristics learners possess that make learning happen (Kirschner 2002). Some scholars raise the need to look at the users as a variable which is in line with this definition of learning affordances. According to Gaver (1991), “the actual perception of affordances will be determined in part by the observer’s culture, social setting, experience and intentions” (p. 81). Similarly, as Doering, Miller and Veletsianos (2008) pointed out, rather than looking at technology as an independent component that could integrate into any learning environment, a key factor of affordance is that it focuses on the relationship between users and the educational intervention. Blin (2016) pointed out that “affordance” could be used in CALL studies to evaluate the learning environment: “The concept of affordances is probably most useful to CALL researchers and designers seeking to improve the usability, usefulness, and user experience of CALL systems, and to support language learners in their interactions with computers and other speakers of the target language.” (p.43).

For the purposes of this study, learning affordance is used to indicate the possible benefits students perceive with regard to the use of educational technologies based on their reflection of a BL experience.

2.4.2. Learning affordances of blended language learning

There are significant benefits to blended learning, students can take advantage of the wide range of online learning possibilities and, at the same time, benefit from face-to-face interaction. BL is often characterized as a flexible learning approach by past research. For instance, Poon (2013) remarks, "the primary benefit of using blended learning is course flexibility" (p. 279). Similarly, it was found that 80% of students were satisfied with their blended learning experience and the paramount reason was that BL offered them a flexible schedule. (Vaughan, 2007). The flexibility of the online instruction allows students to learn the target language at their preferred learning speed by controlling the pace of learning and the scheduling of their coursework (Vaughan, 2007). Likewise, Grgurović (2017) found that one major reason why students choose BL is because the flexible schedule it offers even though they were concerned about their oral skills due to the reduced speaking opportunities in real classroom settings.

The BL environment contributing to students' improved performance is another significant learning affordances reported by a number of research (Vaughan, 2007). In a qualitative study, Garnham & Kaleta (2002) interviewed teachers in blended learning courses and they reported that when compared with traditional classroom learning, students performed better in writing papers, in exams, on projects, and in meaningful discussions. However, some researchers had applied the comparative approach to examine the impact it has on learners' performance and the results were inconsistent. Grgurović's (2017) meta study of blended

language learning reports that comparative studies published between 2006 and 2013 overwhelmingly demonstrated "no statistically significant differences… between learners in non-blended and blended classes" (p. 154). Scholars who are against comparative studies explained that there are several uncontrollable variables which could affect the findings, such as differing instruction methods in face-to-face teaching, the varied ways of integrating technology and the use of different technological tools in disparate learning contexts. (Grgurović, 2017; Sharma, 2017).

Genís Pedra and Martín de Lama (2013) highlight blended learning's "flexibility to adapt to the learners' needs as regards time, place, and pace", adding that it enhances "socialization, interaction and active learning opportunities" (p. 128). Likewise, Anderson (2004) stated that "the greatest affordance of the Web for educational use is the profound and multifaceted increase in communication and interaction capability" (p. 42). One line of research focuses on the benefits of BL from the socio-cultural perspective in which the contributions of the use of technology to learners' interactive and collaborative skills are highlighted. Notably, McLoughlin and Lee (2007) identified the affordances of social software tools and they indicated that "learning occurs in a socio-cultural system in which learners use various tools and multiple forms of interaction to create collective activity, supported by technology affordances" (p.667). They identified collaboration and cooperation as significant factors in effective pedagogy and suggested that the usage of collaborative writing and editing tools (e.g. *Whiteboard, Google Docs)* and publishing tools (e.g. blogs) enhances opportunities for peer feedback, appreciation of new ideas and the transformation of one's own understanding. Research has demonstrated that interactive communication technology, specifically asynchronous technology tools that can enhance students' engagement and social presence, have positive effects on online learning (Ng, 2015). It

was also found that asynchronous collaborative learning environments have proven to be more beneficial than synchronous communication technology because students have more time to self-reflect and think critically about their peers' perspectives (Fung, 2004).

In addition, the implementation of BL promotes the possibilities of better preparing students for the workplace, giving them the digital literacies required in this day and age. As Gruba, et al. (2016) pointed out, many educators call for deeper integration of technology because learners needed 'new literacies', 'multiliteracies', or 'digital literacies' which comprises "the ability of understanding, navigating and creating digital texts." (p. 3). However, these digital skills are less likely to be developed under the traditional learning environment (Lotherington &Jenson, 2011). The benefits of blended learning include not only the new learning experience it offers, but also the opportunities to develop the learner's essential skills.

Although a large body of research examining the effects of the use of technology in education has demonstrated positive results, however, as Jeffrey et al. (2014) mentioned, it is still difficult to identify an exact and concrete method of applying educational technology into face-to-face teaching due to the fact that past research were based on different varieties of technologies, contexts and settings. Therefore, more research is needed to examine under which learning conditions the use of technology can contribute to learning achievements.

2.4.3 Issues in blended learning

In this section, identified issues in BL research are reviewed. Despite the promising benefits educational technologies offer within the BL environment, the challenges that they bring to both teachers and students have been concerns for institutions and researchers alike. By

addressing these issues and possible challenges, a roadmap could be provided for the design and improvement of the learning environment in BL courses.

In the BL environment, the teaching and learning paradigm has changed, which requires both teachers and students take on multiple roles and therefore, more skills are needed. For instance, on the part of the students, self-directed learning is a key factor for successful BL outcomes; whereas teachers are required to provide guidance for self-directed learning, motivate students' online participation and monitor their online work etc. (Johnson & Marsh, 2014). The changing roles create many challenges to both teachers and students which can lead to other related issues.

One major issue that has been extensively emphasized in past studies relates to the ineffective implementation of technology. Despite the rapid development of technology, the effectiveness at which it has been implemented in classroom teaching is lacking. According to Stracke (2007), the lack of integration in the blended learning environment was noted as a significant challenge and one main cause why students dropped out of BL courses. Ng (2015) reviewed articles that focused on the integration of technology in teaching practice and found that the usage of technology in the classroom was generally infrequent and often isolated. In spite of the fact that teachers are provided with supportive resources and training, the integration of technology remained low (Smith et. al, 2008). Similarly, Johnson and Marsh (2014)'s qualitative research demonstrated some teachers' preference to cover all the material, including basic instruction on grammar and vocabulary as well as drilling exercises, through classroom teaching rather than via the online platform for the purpose of controlling the learning process. Unfortunately, this practice could decrease the potential effectiveness of BL.

Furthermore, the success of BL involves keeping the students motivated and engaged. Several studies revealed the use of technologies might promote students' engagement in different learning settings such as blended learning, web-only or face-to-face (Chen, Lamber & Guidry, 2010; Hu & Kuh, 2001). However, Fisher (2010) in his study using the Community College Survey of Student Engagement (CCSSE) discovered that the level of engagement of web-only courses students was lower than students in blended classes. He concluded that while the online setting might be one of the contributing factors to the insufficient engagement, the more important causes are the lack of pedagogies which focus on active and collaborative learning and the insufficient social and academic supports including one-on-one interaction with faculty.

The presence of the instructor issue of factor has been discussed specifically in online learning studies. Studies have shown that the active involvement in students' learning process is important (Young, 2006), however, instructors are encouraged to avoid excessive participation in the discussion activities (e.g. discussion boards), which may reduce student participation (Dennen, Darabi, & Smith, 2007).

Johnson & Marsh (2014) found that teachers spent minimal time communicating with and engaging students on LMS, doing no more than merely tracking students. They noted that it was a challenge for teachers to constantly encourage students to participate in online activities and to motivate them to independently manage their online work. Students' lack of motivation to engage in self-directed learning has been identified as one of the foremost challenges for learners. For instance, Tosun's (2015) study on "The effects of blended learning on EFL students' vocabulary enhancement" showed that students preferred traditional classroom teaching even though blended language learning satisfies their needs, the reported reason for this

was a lack of motivation and self-discipline on the part of the learners. Johnson & Marsh (2014) too found students' active online engagement to be insufficient.

Additionally, literature revealed that students perceived online practice as extra work which does not contribute to effective learning. Bliuc et al. (2011) speculates that it is more than likely that students consider online components, discussion posts in particular, as a requirement for course complement, compulsory but not valued. Similarly, some students in Gleason et al.'s (2013) study expressed their unwillingness to undertake speaking activities online due to their perception that online classes were "just an excuse to read off homework." (p.335), although some shy students preferred online speaking activities. The unwilling participants explained that in the face-to-face setting, they are informed immediately when they have made a mistake however, the online context does not cater to this need.

Another barrier to successful blended learning is technical problems, these include slow internet connectivity, difficulty navigating the learning system etc. It is stated that students who are not very skillful computer users have problems using virtual platforms resulting in negative feelings towards blended learning (Bueno-Alastuey, 2009a). It is suggested that a clear explanation or guidance should be provided to students to prevent confusion and nervousness (Carrasco & Johnson, 2015). Other challenges including poor time management skills, the increased time required for online interaction, and concerns of social isolation due to the reduced face-to-face interaction etc. were addressed (Johnson & Marsh, 2014; Ja'ashan, 2015). Understanding learners' challenges is highly significant, as it is a way to get to know learners' needs which provides insights on the possible improvements to blended language learning design and implementation. In addition, identified issues are in need of being solved because the

negative aspects of students' online learning experience could influence their future educational choices.

This review provides a general context of BL and situated the present study through a discussion on the complicity of the BLL and debated results of past studies. It probed issues in BLL environment that urges researchers to pay more attention to include the obscurity of the effectiveness of BLL and the lack of solid theoretical background of the BLL course design (e.g. isolated usage of educational technology).

2.5 Theoretical framework

This part discusses the theoretical framework that is used to construct research questions and predict and analyze the findings. The framework consists of three learning theories from the field of Second Language Acquisition (SLA): Interaction Hypothesis, Constructivism, and Sociocultural Theory. I start with a discussion of the general concept of learning. After which, I review how SLA, particularly IH, Sociocultural theory and Constructivism can be linked to technology assisted learning. I shall also discuss how these relate to the research questions of the present study.

2.5.1. What is learning?

Learning is pervasive and universal; it is so integral in our lives that its definitions are many and varied. Theorists and scholars who are studying the phenomenon of learning have not yet reached a consensus on the definition of learning (Shuell, 1986). Schunk (1991) defined learning as "an enduring change in behavior, or in the capacity to behave in a given fashion, which results from practice or other forms of experience." He explained that this definition demonstrates three criteria which are regarded as central to learning by most scholars in educational field. The first criterion is that learning involves a change in behavior or in the

ability of acting in a certain manner. For example, we develop our skills and/or knowledge by reading something we did not know. Our belief might not change immediately after reading something new, however, it has the potential to influence our thoughts. The process that made us change is learning. The second criterion is, learning endures over time. Learning requires time. Not all of the changes with time is learning especially when the change is temporary. The third criterion is that learning occurs through experience. For example, baby starts to learn speaking by listening and observation. Adults learn language when they practice using the language.

2.5.2. Second language acquisition (SLA) theories and technology

The learning environment that the current study intends to investigate is that of blended language learning which encompasses of two components: traditional classroom learning and the learning involving the use of educational technologies. In the traditional classroom, SLA theories which look at how a second language is acquired are directly related to the classroom instructional strategies. The use of technology in language learning as a component of blended learning has lots of similarities with the field of CALL because both of them look at the technological tools as a facilitator in assisting learners' language development.

SLA theories have great impact on the computer-assisted language learning (CALL) pedagogy and research. In fact, studies demonstrated the utility of concepts from SLA in research and development of CALL (Chapelle, 2009). Hubbard and Levy (2016) stated that despite the wide-ranging theories from different disciplines employed in CALL studies, SLA theories play a central role in CALL research. Egbert, Chao, and Hanson-Smith (1999) also argued that "before talking about the use of technology in language classrooms, we must talk about how additional languages are learned" (p. 2). Hence, in order to examine the effective use

of technology in classroom teaching, it is of necessity to start the outline in the form of grounded SLA theories. From there, we shall discuss the implications of these theories in technology-enhanced or blended learning environments. In this theoretical framework, the theories employed include: Interaction Hypothesis, Sociocultural theory, and Constructivism.

2.5.2.1. Interaction Hypothesis (IH)

The interaction Hypothesis is a theory of SLA that emphasizes the importance of interaction and communication in language development (Long 1996). Negotiation of meaning is a central process in interaction which requires that the learner and interlocutor (s) adjust their output accordingly. In this process she/he notices the characteristics of the input received from other interlocutors, compares their output, notices the differences (Schmidt, 1990) and produces modified output. The interactional process helps learners notice linguistic problems (Long 1996). Under Interaction Hypothesis, interactive tasks are encouraged in language teaching because it provides L2 learners more opportunities to practice negotiation of meaning which facilitates L2 development (Long,1996).

Interaction Hypothesis is often applied in settings where the interaction is mediated by technologies. Chapelle is a strong supporter for the employment of Interactional Approach in CALL research. Chapelle (2003) categorized the interaction into three types: between people, between person and computer, and within the person's mind. She concluded that the benefits that a variety of interaction could bring include opportunities for: negotiating meaning, obtaining enhanced input, and directing attention to linguistic form.

Table 3. *Three types of interaction and their hypothesized benefits*

Basic types of interactions		Benefits according to the interaction hypothesis
Inter-	1) between people	Negotiation of meaning
	2) between person and computer	Obtaining enhanced, or modified, input
Intra-	3) within the person's mind	Directing attention to linguistic form in the input

(Adapted from Chapelle, 2003)

Chapelle (2003) advocated the interaction approach applied in CALL studies for two reasons, the first one being input modification. The use of technology allows for Modification, simplification or elaboration to make the input more comprehensible. For example, technological tools can provide students with subtitles for listening, or definitions from e-dictionaries, or allow for highlighting of the vocabulary. Another example is that when learners face a comprehension breakdown in listening activities, they can pause the audio or video, replay it, or ask for help which allows for a better comprehension of the input. The second reason for the application of the interaction approach in CALL is informative feedback. The software that provides informative feedback prompts learners to notice their errors of L2 production through which the chances of producing enhanced or modified output could be increased. The process of receiving feedback from technological tools is regarded as beneficial interaction between language learners and technology (Chapelle, 2003).

Hubbard & Levy (2016) noted that interaction hypothesis can be used to guide settings which allows for the occurrence of interaction among multiple interactors through the technological learning platform either synchronously or asynchronously. The technology could be an independent software (e.g. Google docs), embedded in other programs (e.g. discussion board in LMS), or Internet protocol tools (e.g. Skype). Therefore, the employment of Interaction

Hypothesis enables the investigation and examination of technology-mediated interaction which occurs in the blended learning environment.

2.5.2.2 Sociocultural theory (SCT)

SCT was developed by Vygotsky among others - he was perhaps one of the first, who stresses the importance of social interaction and engagement in the learning process. The Zone of Proximal Development (ZPD) is one significant aspect of SCT which indicates the area where students may not achieve proficiency on their own however, the proficiency can be accomplished with appropriate support and scaffolding (Vygotsky 1978). The concept of proximal development suggests that learners acquire knowledge and develop skills through social interaction and collaboration with more capable peers (Peterson, 2009).

Scaffolding is another aspect of SCT (Quinlan, 2018). Scaffolding often refers to supports and helps from instructors or more knowledgeable peers during the interactions or collaborative work. Through the interactive process, a student's competency can be extended and reach to a higher level.

The influence of SCT has been great in language education not only in the traditional classroom teaching but also in online education. In fact, for the past decade, the concept of SCT has transformed the focus of online pedagogy from learning knowledge through delivery content to acquiring higher skills (e.g. critical thinking skills) through collaborations with peers (So & Brush, 2008). The activities in both face-to-face and online settings can be designed based on the concept of ZPD, which means the activities are challenging enough but not far beyond students' current levels. Besides, the interactions and feedback from experts should be included in the

design of online component as well, to create chances for language development through careful scaffolding.

Online education involves learner-technology, learner-instructor and learner-learner interaction. Within the social context, different types of mediated interaction may be involved. Donato and McCormick (1994) elaborated: “For Vygotsky, the source of mediation was either a material tool (e.g. tying a string around one’s finger or using a computer); a system of symbols, notably language; or the behavior of another human being in social interaction” (p. 456). In the interaction between learners and technology, the technological tools mediate communication. This mediation may vary depending on the characteristics of the technology, the implementation approach and the learning context.

Sociocultural theory is employed in the present study which aims to investigate the influence of the use of educational technology that allows for collaborative activities and interactions. The study focuses specifically on the discussion folder in the LMS where learners share their thoughts on BL, as well as collaborative learning software such as Google Docs and social media platforms.

2.5.2.3. Constructivism

Constructivism defines learning as the construction of knowledge through collaborative activities in real-life related contexts and reflection on the learned knowledge through sharing with peers (Jonassen et al., 1995). Learners create meaning rather than acquiring it, their experience plays a significant role in constructing knowledge. That is to say, learning environments are constructivist only if learner(s) are allowed to make sense of received

information based on their own experience, and do not simply rely on knowledge transmission from the teacher or on other's interpretation or content in textbooks (Olusegun, 2015).

In the constructivist teaching approach, teachers are expected to create authentically learner- centered and collaborative environments that enable learners to engage in active learning, promote critical thinking skills and construct new knowledge using their own experiences. In the technology-assisted learning environment, authentic material and learner-centered activities can be created via the use of technological tools such as sharing videos and designing discussion folders that motivate learning and allow for peer and teacher interaction (Pogany, 2009).

Collaborative learning can be enhanced by the use of sharing tools such as Google Docs, emails and social media. Constructivism is, therefore, an appropriate theory to underpin this research because it allows the researcher to evaluate students' comments on the usefulness and appropriateness of the integration of technological tools, including MyCourses, Voxy and collaborative learning tools, in the blended learning environment.

2.5.3. Summary

These three learning theories support student-centered learning, interactive and collaborative learning. The methods of applying these theories into actual teaching practice with the use of educational technology have been studied and suggested by many theorists and researchers. However, in reality, the adaptation of these theories in a BLL environment might be limited due to the fact that not all the teachers are trained to teach effectively with the employment of technological tools.

Hence, the theoretical framework consists of Interaction Hypothesis, Sociocultural theory and Constructivism provide a rationale for the investigation of students' perceptions of learning affordances, impacts and challenges in BL environment. The reviewed literature in this chapter manifests that the integration of technology in traditional classroom teaching promotes language development through flexibility, increased motivation, interaction and collaboration. The benefits offered by BL also include positive impacts on students in the learning process such as improved time management, better computer skills, more learning independence etc. The related studies also informed us of the potential challenges including technical issue, the lack of connection between online and face-to-face teaching and insufficient training, which remain to be resolved.

Correspondingly, the present study examines the learning affordances of BL from the five aspects: effectiveness, flexibility, motivation, interaction and collaboration. The study design includes an initial survey followed by more in-depth interviews. The online survey seeks to understand students' perceptions from a broad sense. Students are asked to rate the effectiveness of BL in language development (e.g. listening, speaking etc.) from 1-5. The specific technological tools are not included in the survey. The interviews questions are more detailed, and students are asked the usage of the technological tools in that particular learning context with a focus of "how" and "why" questions. Take the case of the development of listening skills. Interview questions would be "do you think the use of (the name of the tool) helped you with listening skills?", "How did it benefit your listening skills and why do you think so?" Perceived impacts and challenges students have encountered are the focus of the present study as well. Similarly, survey questions are designed to gain a basic idea of students'

perceptions while interview questions are in-depth which aims to understand the full learning context.

CHAPTER 3

Methodology

3.1 Introduction

This chapter introduces the methodology of the research. It starts with the research design and method implemented then provides a justification for the choice of the research approach. It is then followed by data collection and ethical considerations. The data analysis including both online survey and interview recordings are explained. The presentation of findings is given at the end.

3.2 Research design

A mixed method approach is applied in the current study. As often noted, a mixed methods approach is beneficial because it contributes to sound argumentation (Chun, 2017). Given that the purpose of the research is to understand learning experiences through student descriptions, I used a quantitative approach to seek to explore students 'general perceptions of BL environment through the use of a broad survey and I used a qualitative approach to look into student's actual experience of using technological tools in the BL environment by interviewing participants.

The quantitative approach was suited for this research for two main reasons. First, the statistics derived from the quantitative data build on the accuracy of the result. Through the use of an online survey, the results are less likely to be biased and it promotes generalizability. Second, the quantitative approach was employed to examine the relations of variables and compare the results of the two classes. Participants in the current study have multiple backgrounds (various cultural backgrounds, online learning experiences, learning style

preferences, age group differences, etc.), and the statistical analysis aims to find out the significance of the relationship between manipulated variables (the cultural background, online learning experience) and dependent variables (learners' perceptions, perceived impacts). Besides, the comparison of the two classes is necessary. Although the language proficiency of Class A and Class B are the same level, variables such as the nature of the class (A is professional, B is academic) could be a factor that affects a teacher's use of technology, which therefore can influence a student' perception about the BL environment. The study seeks to explore the possible factors that contribute to the results, therefore, provide a more reliable interpretation of the findings.

This research adopts a qualitative approach because interview data enriches survey results by providing a deeper understanding of context and enhancing accuracy (Abbuhi & Macky, 2017; Jones-Harris, 2010)—in this instance the BL environment. The learning affordances perceived by students can be a complex question because of the variances in BL setting: different classroom instructions, various technological tools and ways of integrating educational technologies etc. For instance, in this study, the major technological tools used in these two classes are LMS, Voxy and collaborative tools. The affordances provided by each type of educational technologies in BL environments are determined not by the properties of the digital tools in and of themselves, but in relation to the tasks, course contexts and instructors' integration approaches etc. Similarly, the students' encountered challenges in different BL learning settings are varied as well. Therefore, collecting responses from individuals through interviews serves to build a deeper understanding of students' actual use of technological tools and learning experience in the BL environment. The other purpose of using interviews is to enhance the accuracy of my survey results. Because of the limited number of participants (Class

A: n=12; Class B: n=18), the survey results might not be reliable than it is expected. The interview data could be compared to the survey results to provide a valid justification and interpretation.

To sum up, the integration of the quantitative and qualitative data deepens the understanding of the investigated context.

In the present study, I adapted the mixed method design from Creswell (2014) which is called Explanatory Sequential Design. According to Creswell (2014), explanatory sequential design involves the initial quantitative phrase and then followed by a qualitative phase which serves to explain the quantitative results. Following graph shows a brief design of the present study. The detailed information of these procedures is provided in the following sections.

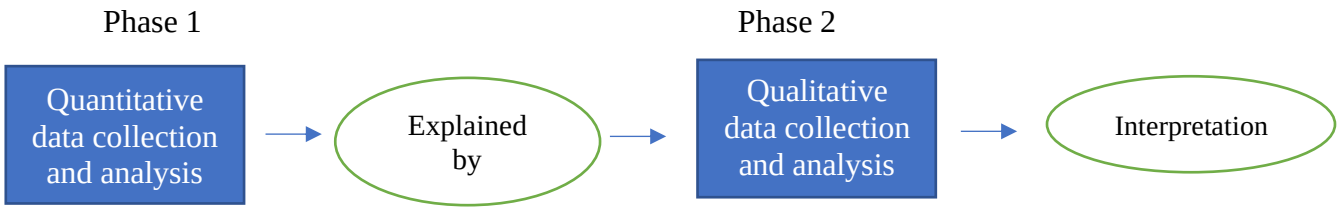


Figure 2. Explanatory Sequential Design adapted from Creswell (2014)

3.3. Data collection

3.3.1 Context of the study

The professional development department at a major university examined in this study offers diverse programs with a range of completion options. Students can complete programs on a part-time or full-time basis and courses can be either in-class or online, which offers flexibility for timelines to program completion.

The Intensive English language program in the professional development department has a six-week duration with three main levels (Elementary, Intermediate and Advanced) and eight courses. Two courses are offered for the advanced level: “Advanced A” and “Advanced B.” The major difference between these two courses is that “Advanced A” improves language skills for an academic setting, whereas “Advanced B” prepares students with the skills necessary for professional employment. Students must pass “Advanced A” before enrolling in “Advanced B” Once students complete the “Advanced B” course, they will meet the language requirements needed to apply to universities. The program is equipped with language labs and multimedia technology to help learners with language skills. This intensive program requires students to attend classes physically for six hours a day, five days a week. There are compulsory two hours of lab sessions per week that allow students to access the online learning system Voxy (www.voxy.com). Two instructors work collaboratively to manage one class.

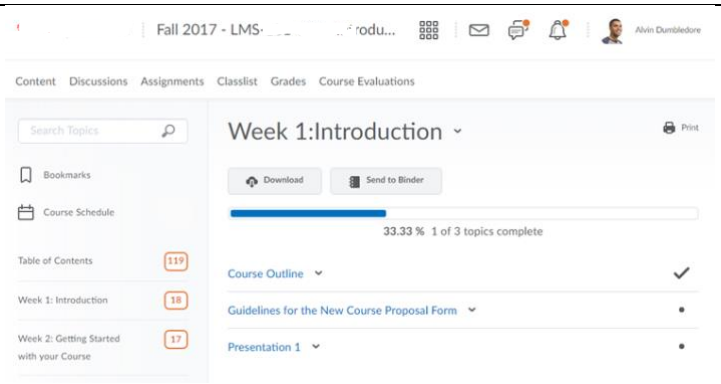
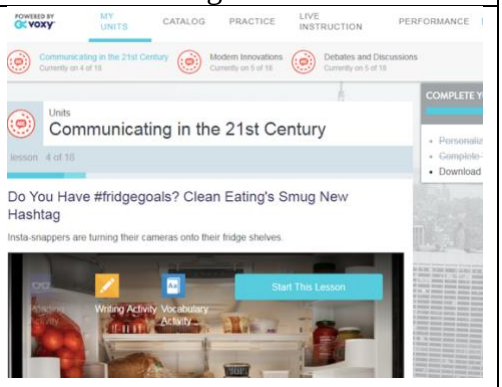
Learning Management System (LMS) used in the program allows instructors to manage resources such as share learning materials and create activities on LMS. The most frequent usage of LMS includes uploading PowerPoints, assigning homework/quiz, create discussion folder and tracking students’ working progress. However, instructors are free to apply the system into their teaching in whatever way he/she sees fit, which means that instructors might have different preferences in terms of the LMS integration.

Voxy is an online language learning program. In order to use Voxy, students are required to log in the system using their institutional accounts. Students are allowed to choose the level of study and different activities including listening, reading, grammar exercise, pronunciation training. The Voxy system keeps a record of students’ task completion. Similar to the use of LMS, there is no unified method for Voxy among instructors. Instructors might have various

methods for integrating Voxy into the classroom. For both LMS and Voxy, students are free to access at their convenience.

Table 4 provides the information on both the LMS used by the School of Continuing Studies and Voxy. The table provides screenshots of, and introductions to, each technological tool as well as the different categories of educational technology embedded within the tools and the frequency of usage by students.

Table 4. *Introduction of LMS and Voxy*

	LMS	**Voxy**
Brief description	LMS is a platform for instructors to share documents, interact with students, monitor the learning process, etc. Students use it for the purpose of downloading learning materials, checking grades, or participating in activities organized by the instructors.	Voxy is a web-based English learning programme that incorporates a variety of topics and different learning modules which allows for customization to suit the curriculum design.
Screenshot		
Educational technology embedded within	• Uploading material • Discussion folder • Tracking function	• Pronunciation training activity • Grammar drilling exercise • Listening activities • Finding speaking partners
Usage	• Self-access • No time requirement	• Lab session: Twice a week (1 hour per time) • Outside the classroom: 6 hours

3.3.2 Instruments

In this mixed method research, two instruments were employed for data collection: online survey and interview. In each of them, the five aspects of BL were studied: effectiveness, flexibility, motivation, interaction and collaboration.

3.3.2.1 Online survey

The online survey was developed based on reviewing literature related to BLL. The aims of the survey were two-fold: (1) to investigate the educational background of students, and (2) to identify students' perceptions of, and suggestions for improvements to the BL environment in terms of its learning affordances, impacts, and challenges. The online survey includes two major sections. The first section is dedicated to the students' demographic information, which includes five items: gender, ethnicity, age group, education level, and native language. The second section includes five items:

- Items (9 & 10): identify the students' perceptions of learning affordances of BL.
- Item 11 focuses on the impacts of BL.
- Item 12 addresses the challenges in the BL environment.
- Item 13 investigates students' suggestions for BL environment improvements.
- Item 14 examines students' satisfaction with the BL approach. (see Appendix C for online survey questions)

More information of the survey questions is provided in Table 5 along with the interview questions.

3.3.2.2. Interview

The interview questions were based on the three major research questions, which focused on the learning affordances, impacts and challenges of the BL environment. In order to gain more specific and detailed responses from students, the interview questions were designed based on the

students' experiences of using the three major technological tools: LMS, Voxy and collaborative tools. Participants were interviewed in such a way as to avoid leading or manipulating their answers. Participants were prompted with follow-up questions when clarification was required. The audios of the interviews were recorded with the permission of the participants. The length of the interviews varied between 25-45 minutes (see appendix B for the interview questions). The researcher of this project was the interviewer.

Table 5. *Survey questions and Interview questions*

RQs	Survey questions	Interview questions
RQ1 What are the learning affordances of BL?	1). Effectiveness: Likert scale question. -the usefulness of BL from 6 language aspects (e.g. BL helped listening skills?) 2). Flexibility: Yes/No question (e.g. is BL flexible for language learning?) 3). Motivation: Yes/No 4). Interaction: Yes/No question 5). Collaboration: Yes/No question	1). Effectiveness: the usefulness of LMS, Voxy and collaborative tools in terms of 6 aspects of language improvements as well as explanation. (e.g. How did LMS help you improve listening skills?) 2). Flexibility: explanation + examples. Why BL (the use of LMS, Voxy, collaborative tools with classroom teaching) is flexible? 3). Motivation explanation + examples. (e.g. Why BL is motivating) 4). Interaction: explanation + examples. (e.g. Why BL increases interaction?) 5). Collaboration: explanation + examples. (e.g. Why BL promotes collaboration?)
RQ2 How does the BL environment affect learners?	The impacts of using BL in the learning process: Likert scale question Impacts from 5 aspects: • Time management, • Computer skills, • Independence, • Increased motivation,	1). What are the effects of BL? 2). How does BL affect you? and why?

	• Collaboration skills	

3.3.3 Participants

A total of 30 students (***N=30)** from the School of Continuing Studies participated in the online survey and 8 of them were interviewed. Most of the students have a bachelor's degree and enrolled in the program to improve their language proficiency. Participants cultural backgrounds are varied including Arabic, Chinese, Korean, Japanese, Iranian, French-Canadian, and Spanish. The age difference is large, with age ranging from 18 to 40. More importantly, students have different blended language learning experiences. Some of them started with the blended learning mode since the elementary level which means they have adapted to the learning system and become very familiar with the learning material whereas some students had no experience of using the blended learning mode hence they might need more assistance with the use of technological tools and the blended learning system.

The participants of the present study are from two different classes: Advanced A and the Advanced B. As described beforehand, the "Advanced A" is the course of English for professional communication which is for professional development purposes whereas "Advance B" is the course of English language culture which is more for academic purposes. The reasons for selecting these two classes are: (1) the course coordinator suggested these two classes, as there is more online learning content in Voxy for advanced level learners; (2) one instructor uses more technologies in the classroom so it would be interesting to understand the students' perceptions, and (3) class A and B are both advanced level so it might be more comparable.

Table 6 provides background information and the numbers of survey participants from class A and class B.

Table 6. *Online survey participants' backgrounds*

	Class A	**Class B**
Number of participants	*N=12	N=18
Gender	Female: 50% (*n=6) Male: 50% (n=6)	Female: 50% (n=9) Male: 50% (n=9)
Ethnicity	Asian: 58.3% (n=7) Caucasian: 8.3% (n=1) Middle Eastern: 8.3% (n=1) African American: 16.7 (n=2) Other: 8.3% (n=1)	Asian: 44.4% (n=8) Caucasian: 22.2% (n=4) Middle Eastern: 16.7% (n=3) African American: 11.1(n=2) Other: 8.3% (n=1)
Age group	18-20: 41.7% (n=5) 21-25: 33.3% (n=4) 26-30: 8.3% (n=1) 31 and above: 16.7% (n=2)	18-20: 22.2% (n=4) 21-25: 27.8% (n=5) 26-30: 16.7% (n=3) 31 and above: 33.3 % (n=6)
Education level	College: 33.3% (n=4) Undergraduate: 50% (n=6) Master: 25% (n=3)	College: 5.6% (n=1) Undergraduate: 61.1% (n=11) Master: 22.2% (n=4) PhD: 11.1% (n=2)
Native language	Arabic: 8.3%(n=1) Chinese, Korean, Japanese: 50% (n=6) French: 33.3%(n=4) Spanish:8.3% (n=1)	Arabic: 16.7%(n=3) Chinese, Korean, Japanese:27.8% (n=5) Thai: 8.3% (n=1) French: (n=9)

Table 7. *Interview participant summary*

*N refers to the total participants of the study; *N refers to the total number of participants in class A and B and *n refers to the number of participants for a specific category.

Participant pseudonyms	Gender	Age	Class	*Session
Mia	F	Above 30	A	2ed
Emily	F	21-25	A	4th
Grace	F	18-20	B	2ed
Jacob	M	21-25	B	1st
John	M	Above 30	B	2ed
Mike	M	Above 30	B	2ed
Thomas	M	21-25	B	1st
Ruby	F	18-20	B	1st

*Session refers to the number of different levels of intensive English courses that participants have enrolled at the School of Continuing Studies (e.g. beginner, intermediate).

3.4. Procedures

3.4.1 Participant's recruitment

All recruitment and data collection processes began upon receiving ethics approval from the Research Ethics Board at McGill University. The recruitment process consisted of the following four stages:

(1) A proposal was sent to the director of the English language department of Continuing Studies. After several meetings with the director, the study was evaluated and approved by the members of the administration board.

(2) Meetings with the course coordinator were arranged through emails upon the director's approval of the project. The focus of the meeting was the introduction of the blended courses in the intensive English program, and more specifically, the use of Voxy as an important online component of the program. He suggested two advanced level classes as a source for my potential participants and emails were sent to the instructors of the respective classes.

(3) After the meeting with the course coordinator, emails were exchanged to set up meetings with the instructors for classes A and B. In the meetings with the instructors, I had the opportunity to ask them about the types of educational technologies used in their classroom, their attitudes towards the use of technology in the classroom, and their integration of technology as a pedagogical aim.

(4) Class A and B received detailed instructions on their participation in my research through short presentations tailored to their needs.

Class A: One of the lessons for Class A was dedicated to technology and education. The instructor, therefore, thought that this lesson would work well with my presentation. As such, I opened the class with a ten-minute presentation that was followed by a discussion period. In the presentation, I talked about the use of technology in education with a focus on the influence of technology. Then I introduced the purpose of my study, the importance of my research, and the steps they needed to take in order to become a participant in the study. A link to the online survey was posted on LMS by the instructor after my presentation. Students were expected to click on the link and complete the online survey at their convenience. Students were informed that the survey was anonymous and that it is completely voluntary to participate.

After introducing the survey, I invited students to be interviewed. Consent forms for the interviews were given to students and clearly explained. They were informed that only those who consented to the interview would be contacted, either for a face-to-face meeting or a Skype video session. Students were given time to read the consent form and make their decisions during the class. Students who consented to the interview provided their email addresses and signed the form.

Class B: The instructor emailed students about the purpose of my visit and the survey link the day before my presentation. A brief introduction to my research was presented in three minutes before their lab time, and the students were then invited to complete the survey in the language lab. They were also informed that they could complete the survey at their convenience and that their participation was anonymous and completely voluntary.

After making sure that students understood the survey, I invited them to participate in the interview and gave them consent forms, which I subsequently explained to them in addition to addressing issues of confidentiality and anonymity. Those who were willing to be interviewed provided their email addresses and signed the consent forms, which were collected at the lab.

3.4.2. Interview

The students who consented to the interview were emailed, and an interview meeting was arranged with each of them. The interview was conducted face-to-face with most of the participants and only one student preferred a Skype interview because of time constraints. The place where the interviews were conducted was an empty classroom of the School of Continuing Studies. The interview dates for all the participants were during the week right after they finished the 5-week intensive program.

Before the interview, they were asked if they were comfortable with having their interviews recorded and they were assured that the audio would be only heard by the researcher. They were also informed that they had the right to withdraw from the interview even if they had already signed the consent form. They were informed that the interview would last for about 30 mins. The only equipment used in the interview was a laptop for the purpose of recording the interview.

3.5 Ethical considerations

To protect participants' confidential information, several steps were involved before and after the data collection process. Before recruiting participants, the consent form that was approved by REB was presented to them and their confidentiality and anonymity were assured. After the data collection process and in the writing, the name of the university was removed, and students who participated in the interview were given random pseudonyms.

Regarding the collected data, they were carefully protected. Identifiable information like signed consent forms were stored separately in a locked filing cabinet which in turn was located in a locked office accessible only to the researcher and supervisor. Electronic files, including the online survey, survey results, audio recordings of face-to-face interviews and video-recordings were securely stored on pCloud which is one the most secure cloud storage services. (See the review of pCloud at https://www.cloudwards.net/review/pcloud/). The transcription of the Skype interview was saved as a word document file and stored in pCloud as well. No one used or will use any data collected in the study, and this researcher was the only one who used it for the purpose of data analysis. All data will be destroyed after 7 years following the publication of results/reports to further ensure the participants' confidentiality.

3.6. Data analysis

In this mixed method study, two types of data were collected: quantitative (surveys) and qualitative (interview) and they were analyzed separately.

3.6.1. Survey responses analysis

In order to compare the results of class A and B, the quantitative results of the two classes were calculated individually. The quantitative results were statistically analyzed through the

calculation of percentage, mean (M) and standard deviation (SD). More specifically, the percentage was used to demonstrate the results of yes-no questions and the t-test (descriptive statistics) was used to analyze the results of Likert scales question. The results of class A and class B were compared and presented in the form of tables. In terms of the correlation of the variables, a correlation test was used to explore the relations of the participants' backgrounds to their perceptions of BL learning affordances.

3.6.2. Interview recordings analysis

Thematic analysis was employed to analyze interview data. First, I transcribed the interview recordings and coded them. Then, I searched for themes emerging from the transcribed data. The interview results are categorized into three main themes which are according to the three research questions: 1) learning affordance, 2) impacts of BL, and 3) challenges and suggestions for improvement. Finally, I reviewed the themes to make sure they fit the data. To summarize the research design, Figure 3 demonstrates the data collection and analysis of the mixed approaches as well as the process of the integration of the results.

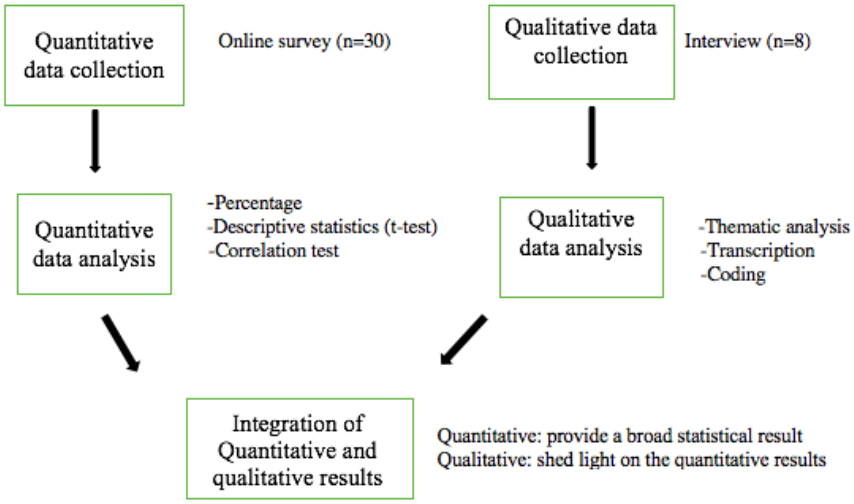


Figure 3. Mixed method data collection and analysis process

3.6.3. Presentation of findings

The findings are presented in the sequence of the quantitative followed by qualitative results. The quantitative results include the survey results of both class A and class B, the comparison of survey responses from class A and B. Qualitative findings are presented subsequently to provide interpretations of the quantitative results as well as in-depth insights. Qualitative results were organized through themes and supported by the interview excerpts. It is worth to note that due to qualitative findings serves to explain quantitative results, the interview responses of class A and B were not compared.

CHAPTER 4

Results

This chapter presents results from both the online survey responses (30 participants) and the interviews (eight participants) from Class A and B. Class A features more technology usage in the blended learning than class B. I organized the results based on three themes: 1) learning affordances of BL, 2) impacts of BL and 3) challenges and improvements of the BL environment. Statistical results of the survey responses from both class A and B are provided and explained briefly and then followed by the qualitative results of the interviews. A theme-based analysis is applied to organize the interview results.

4.1. Learning affordances of BL

Derived from related studies in BL, the present study proposes that the use of educational technology in classroom teaching affords a better learning environment in terms of effectiveness, flexibility, motivation, interaction and collaboration.

4.1.1 Quantitative & qualitative results

The survey results of the perceived learning affordances mentioned above are presented and compared between class A and B. Descriptive data including percentage, mean value (M) and standard deviation (SD) is used to present the survey results. A summary of the survey results of each category of learning affordances of class A and B is followed. The qualitative results are reported in the sequence of the five learning affordances and presented after the statistical results.

4.1.1.1 Effectiveness

Effectiveness is defined as a student's perception of the benefits of blended language learning, specifically, the integration of technological tools (e.g. web-based learning tool Voxy,

LMS) with face-to-face teaching in the development of language skills including listening, speaking, reading, writing, grammar, vocabulary and pronunciation. To investigate the students' perception of the benefits of BL to develop their language skills, Likert scale questions were posed in the survey. The survey results of the two classes are presented below:

Survey results of class A (N=12) and class B (N=12)

Table 8.*Class A and B survey results of perceptive effectiveness of BL (**percentage**)*

	Listening	Speaking	Reading	Writing	Grammar	Vocabulary	Pronunciation
Class A	75	50	66.7	66.7	58.3	75	66.7
Class B	77.8	61.1	72.2	72.2	77.8	88.9	66.7

The results in table 8 show that overall, the language skills that perceived as beneficial from BL in both class A and B were listening and vocabulary. Regarding the other language aspects, students in class B had a more positive attitude than students in class A.

Most of the students in class A considered a BL environment to be beneficial to their listening and vocabulary development with the same percentage of 75% (n=9). With respect to vocabulary development, listening skills and grammar, a majority of the students in class B agreed or strongly agreed that the BL was beneficial to these language skills, which are 88.9% (n=16), 77.8% (n=14) and 77.8% (n=14), respectively.

The perceived effects of BL on speaking skills in class A had the least rate of satisfaction, only 50% (n=6) of students considered their speaking skills had improved because of BL. Grammar development also had a low rate in class A, with 58.3% (n=7) of students who agreed or strongly agreed that a BL environment contributed to grammar improvements. Similarly, in class B, students' perceptions of the benefits of BL to the two language aspects of speaking and grammar

were comparatively low, with the rate of 61.1% (n=11) and 66.7 (n=12), respectively. In terms of the development of reading and writing skills, 72.2% (n=13) of the participants in class A and 66.7% (n=8) in class B agreed or strongly agreed with the benefits of BL.

Table 9. *Class A and B survey results of perceptive effectiveness of BL (**M & SD**)*

	Listening	**Speaking**	**Reading**	**Writing**	**Grammar**	**Vocabulary**	**Pronunciation**
M(A)	4.3	3.5	3.9	3.8	3.5	4.1	3.8
SD(A)	0.8	1.2	0.9	1.0	1.1	0.7	0.6
M(B)	3.8	3.5	4	3.9	4.1	4.2	3.9
SD (B)	1.4	1.6	0.9	1.1	0.9	0.6	1.2

Table 9 demonstrated that Students in class A and B may have different perceptions in terms of the language skills of listening, grammar and pronunciation. Students in class A have similar opinion regarding the benefits of BL to listening skills (M=4.3; SD=0.8) while in class B, students have different opinions and their perceived usefulness was relatively less, with M=3.8 and SD=1.4. However, students in class B considered BL as useful to grammar development with M=4.1 and SD=0.9 while students in class A deemed less effectiveness of BL in promoting grammar learning (M=3.5, SD=1.1). In terms of pronunciation, the perceived effectiveness of BL was similar in the two classes M(A)=3.8 and M(B)=3.9 however, in class B students' perceptions were more diversified than class A (A: SD=0.6; B: SD=1.2).

Qualitative interpretations

In the interview, most students mentioned the benefits of using Voxy for the improvement of their listening skills, vocabulary and grammar. The perceptions of the employment of Voxy varied among students who participated in the interview which could be due to individual differences. Students' comments on Voxy design and other setbacks will be

discussed in the section of challenges and improvement below as this part focuses on the perceived benefits. In the interview, they expressed that the listening exercises were useful activities. They described that the listening activities consisting of recordings, images/videos of diversified contexts and topics with "clear and short" explanations followed by comprehension exercises as very effective. Following are interview excerpts of two participants describing their opinions of the listening activity of Voxy. [For the purpose of maintaining the authenticity of the participants' spoken words recorded in their interviews, all excerpts presented in this paper may therefore contain grammar errors.]

> **Emily**: I think it's very good for listening, because the explanation is clear and short, I think the video is very good... the first part of the question is to check your understanding of the article, I think that part is also good. (Emily, class B)

Besides, with regard to the listening material, John mentioned that "the recordings sometimes even have noises" and "it has diversified contexts" which indicates that students found the authentic material in listening activities to be valuable and effective in improving listening skills.

> **John**: I found it interesting, to improve my listening is the most useful tool and vocabulary... for me, it's the vocabulary and listening because you listen to different people in different contexts and even you listen to the recordings with noises. (John, class A)

In terms of grammar development, Emily considered the exercises might be challenging but useful:

> **Emily:** for grammar, it's like you have to select which sentence is correct, the questions can be difficult sometimes depends on the article, but it's helpful for my grammar. (Emily, class B)

The effectiveness of using Voxy in BL for improvement of reading skills and vocabulary learning was reflected through participants' positive comments on the "News module" session which features interesting articles relating to current affairs.

Students commented that the function of highlights and showing vocabulary definitions as useful. The wide range of news topics is beneficial to vocabulary development. Following are the interview excerpts of participants' perceptions of the 'intermedia' session:

Mia: I like the recent news part […]also they provide vocabulary with the definition so I can save my time to look up on the dictionary, some vocabulary is highlighted, if I click the word, they show the definition, also they read the definition. so, it's useful and timesaving. That's a good point for me. (Mia, class B)

Jacob: because my first language is French, so I know the words in French, but I don't know the word in English, I learned a lot of words in different fields, in cooking, in traveling, in politics, in sports, so I think it helped a lot. (Jacob, class A)

In terms of the use of LMS, students perceived it as a platform that facilitates the improvement of their pronunciation and speaking skills via the function of uploading digital audio recordings of their speaking samples and then receiving corrective feedback. In the interview, John emphasized the usefulness of receiving corrective feedback on his pronunciation stating that the feedback enabled him to notice his errors in pronunciation while speaking.

John: One very interesting thing we used in the last session was we have to upload our video, the teacher gave us some feedbacks of the pronunciation, things we need to correct. We recorded audio file and receive feedback [...] because for me it's something I need to improve my pronunciation, it's very difficult. because we have no so much time here in the classroom, it difficult for me to find native speakers to tell me, you mispronounce that and that, I didn't realize about my mistake, if you record yourself for 6 minutes, someone tells you, oh you need to be careful. Comparing with writing, it's easy to receive feedback, but with speaking, it's difficult. (John, class A)

One activity in Voxy which was designed to train pronunciation was described by students as "helpful" because it automatically checked word stress, intonation and even provided help with various accents. From the students' responses in the interview, it seems that, on the whole, the students who had used the pronunciation training activities viewed them as satisfactory, indicating that the feedback from Voxy was comprehensive.

Jacob: I practice a lot of accents, you know there are differences in accents, there are Canadian accent, American accent, British accent, yea... so, it was very helpful for me. (Jacob, class A)

Ruby: There are very few benefits from Voxy, but if I need to say so, I would say like they have the speaking, pronunciation, they will like you say the words, it will automatically help you to check whether you have emphasized these words correctly, in that case, it's good. (Ruby, class A)

Emily was the only participant who mentioned the function of finding a speaking partner in Voxy. This feature offers students opportunities to practice English with a native speaker who might be within or outside of Canada. Unfortunately, Emily did not have a speaking partner due to the obstacle of finding mutually agreeable times with partners.

Emily: For the speaking, we have the opportunity to find the speaking partner I think it's also good, but I do not have one. [...] I think it's hard to find the time to meet and we have to find the time, we have to connect to each other and arrange to meet. (Emily, class B)

4.1.1.2 Flexibility

Flexibility refers to student's perceptions of the convenience provided by the BL environment (e.g. flexible time and location).

Survey results of class A perceived flexibility of BL

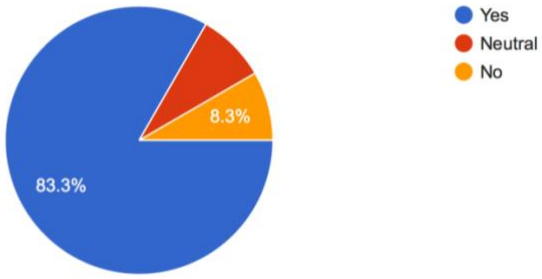


Figure 4. Percentages of perceptions of the flexibility of BL in class A

Survey results of class B perceived flexibility of BL

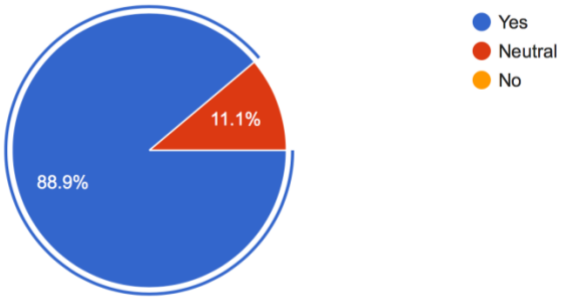


Figure 5. Percentages of perceptions of the flexibility of BL in class B

The results show that the perceived flexibility in class A and class B were similarly high which are 83.3% and 88.9% respectively. It appears that the flexibility of BL is not influenced by the courses or the instructors.

Qualitative interpretations

The flexible merit of BL was mainly manifested from students' description of the use of LMS. Most students perceived LMS as a helpful tool for them to check out learning materials without time and location constraints. John, who is a science teacher, expressed LMS as a "powerful" tool because they do not need to print the reading materials and they can download, save and review them in one single piece of equipment- in this case, a laptop. It was also stated by Jacob that the flexible learning mode promotes self-learning.

John: It's a way to gather all in the information all relate to the course, you have all your class in your computer, you don't need papers. I find it very powerful and interesting.

Jacob: The effect of we remove paper, we don't have print it out and we can submit online, the other thing, you are training yourself. I can teach myself, its more independent learning, its more flexible.

Further examples from participants:

Mia: I think it's helpful because for some students who want to review what we studied during the class, the teachers can easily share the materials we studied in the class, they show the dates, it's easy to find the material...

Ruby: its flexible, yes because the teacher also posts some links or what we have to do this class, if you miss some classes, you don't have to ask your classmates, maybe they are busy...

Emily: when teacher send some articles or things we should know, or we should print out, I will go LMS to check but my teacher allows us to bring the laptop, so I don't have to print it, in the class, I can check LMS. it is very convenient.

Grace: I like the discussion folder because I can see it anytime, I want.

However, during the interview phase, Mia who is from class B described the convenience and flexibility as the merits of using LMS and then she commented "I don't think LMS is used more than uploading material that we have studied in the classroom." This reflects that the student valued the flexibility that MyCourses provides, however, it appeared that she deemed LMS was not sufficiently utilized in the course design by the instructor.

In addition, Thomas stated the flexibility offered by the use of skype, especially in terms of the convenience with location.

Thomas: For groupwork, usually we use Google share, WhatsApp group and Skype, because Skype is easier because you don't have to go to school, it's easy to find time but not location,

4.1.1.3 Motivation

Motivation is defined as whether students were motivated by the use of each educational technological tool in the blended learning environment.

Survey results of class A perceived motivation of BL

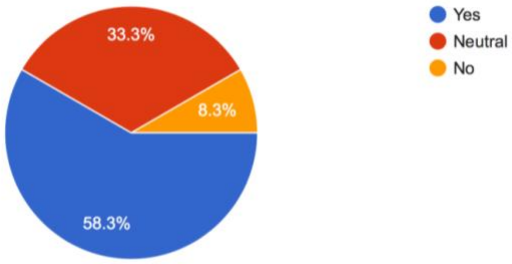


Figure 6. Percentages of perceptions of the motivation of BL in class A

Survey results of class B perceived motivation of BL

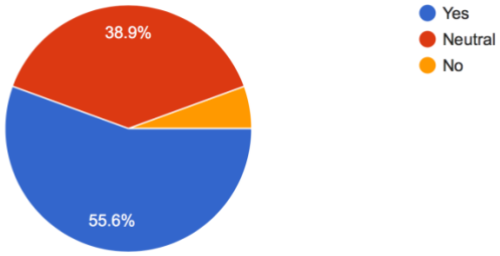


Figure 7. Percentages of perceptions of the motivation of BL in class B

The results reveal that more than half of students consider BL motivated their language learning, with the percentage of 58.3% and 55.6% for class A and B, respectively.

Qualitative interpretations

With regard to students' motivation of learning English with a BL mode, students' responses in the interview were diversified. Most of the participants agreed on the merits of using LMS, especially the use of the discussion folder as an interactive function in LMS. Students liked to use the discussion folder because it serves as a platform for them to share their thoughts and it also creates a sense of community allowing everyone using the tool to view their posts which in turn enhances their motivation. Furthermore, reviewing discussion posts offered students chances to learn from their peers such as use of grammar, vocabulary and different points of view.

Grace: I like the discussion folder because I can see it anytime, I want. For example, my classroom wrote some report and I can read it and I can compare who is using something good, like grammar […] that time I have to be careful to make sentences because everybody can see me post. I feel motivated, I feel a little bit nervous but in a good sense. if I see only my teacher, maybe I am a little bit lazy. but if everyone is doing it, I'm motivated. (Grace, class A)

John: maybe the most interesting thing is that we can see the works of your classmates, so you can learn something or see how other students do, because in the normal class, you don't read how every student write. you can do this in the place. I can compare, oh how that guy writes, I can see it. (John, class A)

Jacob expressed the utility of using discussion posts and he commented that the value of the discussion post can be promoted via regular revisions. He also suggested more activities on

discussion posts should be assigned to students so that they can get familiar with the digital tool and that his motivation might be decreased if the instructor does not post discussion topics constantly. Thomas also described his motivation came from his high frequency of using LMS because of the heavy workloads and the fact that he needed to get updated through LMS.

Jacob: the discussion folder, we post things there but most of the time we don't go back it read all the things again. I think they create that thing is good, but we don't use it that much.... I think we should use it more often... because we need to get used to the tool. we can see others posts from other students and, you can read all the posts, you can get a certain idea, ah... I didn't know that before, it's part of the knowledge so you are learning new things. (Jacob, class A)

Thomas: yes, usually per day I go to (the name of the LMS) 2 or 3 times, every time I stay there for 1 or 2 hours, we usually have to write our paper and keep updated with what's going on, because we have lots of work. I never take notes; everything is on (the name of the LMS). (Thomas, class A)

Most of the students' responses towards the use of Voxy was not shown as positive. However, Jacob held a positive opinion and he found Voxy really motivating and useful. Two features of Voxy that motivated him most were the interesting topics on Voxy and flexibility which allows more self-learning opportunities. For him, Voxy is a supportive tool that provides lots of useful recourses and he can ask for help from without time limitation.

Jacob: yes, especially because when I find some topics I like, like economy, sports, you know, it motivates me. I can just listen. because when you study that course, you are learning new things, oh I didn't know it before, you are open to the new knowledge, there is everything for anybody just looks for what you want, and you can find it in Voxy. (Jacob, class A)

Jacob: Voxy is like something to support you, honestly it motivates me, because if I got some questions, I can go to Voxy and find out what I am asking for instead of asking to the teacher, I think it's a great support. it's like dictionary and something like that, because this situation that happens on the daily basis, when you look at videos, interactions and look at stories. (Jacob, class A)

News module or "intermedia" was mentioned by most of the participants for it motivates them. For instance, apart from the usefulness in vocabulary development as Jacob described "I learned a lot of words in different fields, in cooking, in traveling, in politics, in sports, so I think it helped a lot." Mia expressed that "it's a good way to know what's going on in the world."

Besides, it can serve as a tool for them to retrieve resources or interacting with their peers, as Ruby stated "I will know the latest news, I can use it to chat with classmate."

> **Mia:** I like the recent news part because I don't have time to read newspaper and watch tv everyday but anyway, I had to do Voxy to meet the goal so it's a good way to know what's going on in the world […] so, it's useful and time-saving. That's a good point for me. (Mia, class B)
>
> **Ruby:** There are some sports topics, its related to world cup I just go and then check I will know the latest news, I can use it to chat with classmate, I don't need to search online. (Ruby, class A)
>
> **John:** I found its very interesting, the news, about the world actual news, the very recent news, articles because it's something very up to date, maybe it's the news from this week. for me, Voxy is convenient and a good thing. (John, class A)

It seems that students' motivations are varied depending on an individual's background and needs. John who is in his 40s responded to the interview question regarding his motivation towards BL: "I do not like the word motivation, because I don't need to be motivated." In this case, John's motivation in the BL environment was not from the use of technological tools but from his internal motivation (e.g. need for career development).

4.1.1.4 Interaction

Interaction, in this context, refers to students' perceptions of whether the use of educational technology in the program enhanced the chances of interaction with their peers and instructors.

Survey results of class A perceived interaction of BL

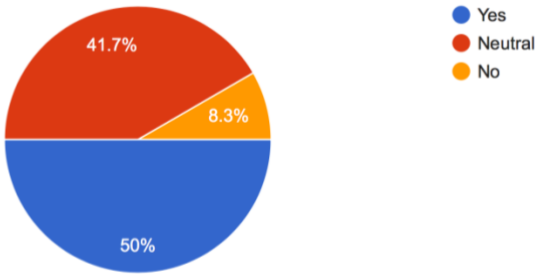


Figure 8. Percentages of perceptions of the interaction of BL in class A

Survey results of class B perceived interaction of BL

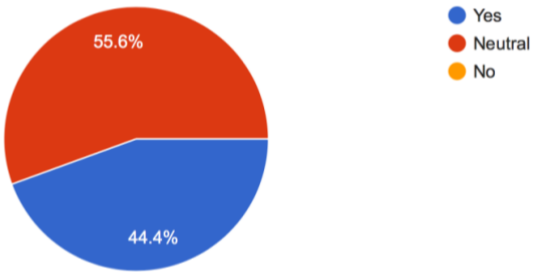


Figure 9. Percentages of perceptions of the interaction of BL in class B

The graph shows that the students' perception of interaction in a BL environment in class B (55.6%) is higher than class A (41.7%).

Qualitative interpretations

In alignment with the statistical results, participants stated increased interaction was not considered as one of the benefits of BL due to the fact that they have plenty of time to meet in the classroom for face-to-face communication with peers and instructor. However, Thomas mentioned that the use of the tracking function on LMS (a feature which allows teachers to track a student's work progress) might increase the communication between the instructor and students. He commented on it as "a wonderful application." The increased interaction of BL was not directly referred to by Thomas, however, based on his responses it can be deduced that the function of group discussion on LMS that allows ideas sharing, work updating and interaction among group members, created more opportunities for interaction among peers and with instructors.

> **Thomas**: [...] actually also the professor or teacher can check out our group project, like we post our meeting form, then the professor will know how's the group project going on, whether they need any help, maybe tomorrow the teacher will talk to us in person, so that's why it's a wonderful application. (Thomas, class A)

Mia shared her perceived benefits of using Google Docs for group projects. She pointed out collaborative learning tools promoted her interactions with peers and motivation with learning the reading material. Following are the transcribed descriptions.

> **Mia:** … if I find some part I want to mention, I can type my comments...we can ask questions like " do you really think about this part." I think... it's also good for interaction. there is records of who said who. I did comment like " I agree with your idea." (Mia, class B)

4.1.1.5 Collaboration

Collaboration refers to whether the use of educational technologies (e.g. collaborative learning tools) promotes or enhances collaborative activities or projects.

Survey results of class A perceived collaboration of BL

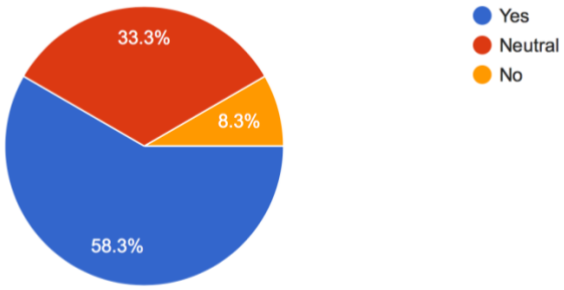


Figure 10. Percentages of perceptions of the collaboration of BL in class A

Survey results of class B perceived collaboration of BL

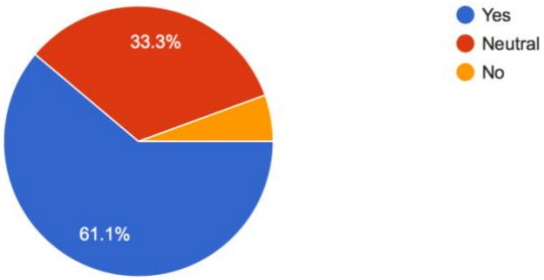


Figure 11. Percentages of perceptions of the collaboration of BL in class B

Figure 10 and 11 show that 58.3% of students in Class A considered BL increased collaboration with peers whereas the percentage is slightly higher in Class B which is 61.1%.

Table10. *Summary of survey results of Learning affordances of Class A and B*

	A (N=12)	**B (N=18)**
Effectiveness (the average of the 6 language skills)	67.8%	73.8%
Flexibility	83.3%	88.9%
Motivation	58.3%	55.6%
Interaction	50%	44.4%
Collaboration	58.3%	61.1 %

In general, students of Class A and B had positive opinions about the use of BL to improve their language skills. Effectiveness and flexibility among others are the most paramount learning affordances of BL perceived by both classes. Based on the average value, it seems that students in Class B are more optimistic than in Class A with respect to the effectiveness of BL.

Qualitative interpretations

Students' responses in the interview manifest that collaborative technological tools are used to interact and collaborate with peers for groupworks, even though the intensive course allows them sufficient time to meet in the classroom. The collaborative tools used include Google Docs, E-mails, WhatsApp and Skype. Depending on the purpose of the groupwork, students would choose the tools with attributes that best fulfilled their needs. Based on the students' responses, the use of collaborative tools can be categorized into three types: (1) sharing documents or files with peers, (2) editing and modifying groupwork or commenting on reading material at the same time, and (3) discussing or interacting with peers.

Emails were often used for sharing files among group members. However, social media (e.g. WhatsApp, Skype) was the preferred choice for discussing or interacting with peers. It could be that students consider social media as more straightforward and efficient for discussion than email. Several students mentioned the use of Google Docs and lauded the function that allowed them to edit and modify content at the same time. Mia expressed her satisfaction with her first experience of using Google Docs for commenting on reading materials. She stated that by reading her peers' different points of view, she had a better understanding of the content. Besides, the fact that she can express her opinion and comment on the opinions of others increased her motivation for engaging in the discussion. Furthermore, the extra time allocated enhances "deeper thinking."

> **Mia:** We used technology, we used Google doc. it's a good way to do work collaboratively...if I find some part I want to mention, I can type my comments. we could discuss online, it's interesting to see some different point of views from our classmates about the specific parts of the material... I can take time to think. (Mia, class B)

> **Mia:** [...] but it can't be perfect, it motivates me, it's much better than read this material, if I have to discuss with my group members, I will be more focused on the reading material and think deeply. I can learn from others, that's the benefits of group work. (Mia, class B)

4.2 The Impacts of BL

The impacts of BL in this study refers to the effects that a blended learning mode caused on students in various aspects through the learning process including time management, computer skills, independent learning, collaboration, interaction skills as well as motivation.

4.2.1 Quantitative results

The survey results of the BL impacts of class A and B in comparison is presented in the table. The descriptive statistics (percentage, mean value and SD) is used to compare the results and provide an insight on the divergent stances of the two classes.

Table 11. *Survey results of perceived impacts of BL in class A and B* ***(percentage)***

Impacts of BL	**Class A(N=12)**	**Class B(N=18)**
Better with time management	41.6%	61.1%
Computer skills	50%	44.4%
Independence with learning	75%	72.2%
Motivation to learn English	41.6%	66.7%
Collaboration skills	33.3%	44.4%
Interactions ability with instructors and peers	50%	44.4%

In table 11, the responses of the survey displayed, among all the potential impacts, that increased independence with learning had the highest rate which is 75% (n=9) in Class. 72.2% (n=13) in Class B of students valued themselves as more independent learners. For class B, better time management and motivation to learn English were considered as two important BL impacts, at 61.1% and 66.7%, respectively. However, for class A, the percentage of students who agree or strongly agree that better time management and motivation to learn English are BL impacts were less than half, at only 41.6%. Half of the students in Class A deemed BL has impacts on computer skills and interactions ability and the percentages in Class B are slightly lower which are 44.4%. The impact of collaboration skills had the least rate in Class A which is 33.3% (n=4).

Table 12. *Survey results of perceived impacts of BL in class A and B* ***(M & SD)***

	Better with time management	**Computer skills**	**Independence with learning**	**Motivation to learn English**	**Collaboration skills**	**Interactions ability with instructors and peers**
M(A)	3.4	3.5	3.8	3.2	3.2	3.4
SD(A)	0.8	1	0.8	0.8	0.7	0.9

M(B)	3.6	3.3	3.8	3.5	3.4	3.6
SD(B)	0.9	1	0.9	1	1.1	0.9

Table 12 shows that the result of computer skills (SD=1) for class A and B indicates that students of the two classes might have different technological backgrounds and technical training experiences. For class B, the variations of student's perceptions of BL impacts are larger than class A. For example, collaboration skills SD=1.1 is the largest in class B, however, in class A, it has the smallest value SD=0.7. It is possible the fact that more participants in class B (n=18) than in class A (n=12) had influence on this result.

Through SD analysis, it appears that students' perceptions could be divergent, indicating that students have different backgrounds in using technology and different learning experiences. Backgrounds might play a part in how BL could influence them. In addition, the short duration of the course might be a cause of the results as well.

4.2.2. Qualitative results

The results of the interview are in line with the statistical results of the online survey which indicate that students' perceived impacts of BL in the learning process are seemingly insignificant. Most students responded that they do not see the impacts. Some students stated that their skills might have been influenced by the BL environment, however, it is not so obvious to see the difference by themselves. As mentioned in survey results, in order to have impacts on learning skills, it requires a longer process whereas five weeks might be rather too short. This could also be a plausible explanation for the interview results.

The two skills that fostered learning mentioned by students were independent learning and digital literacy. In terms of independence, Jacob mentioned that the features of LMS that

allow students to check learning material at any time and Voxy which he could use without time or location limitations enhanced his skill of independent learning.

Grace stated her computer skills had increased because the instructor encouraged her to use more digital notes than paper notes. Both Jacob and Grace gave the opinion that independence and digital skills are very important and beneficial to their future careers.

> **Jacob:** I think I become more independent learner, when I was in the college, we used to use, I think it's a great way to make you independent, to do things by your own, I think it prepare you in a contain way to the workplace, for the job, you will be able to work on your own, manage your rime, you will have the ability to use technology at workplace also, it's not just for school but it prepares you many things. (Jacob, class A)

> **Grace**: this is actually my 4th session, previously I can write down and hand but this time, the instructor after class, he usually says just only type, I am an old-fashioned student, I want to write down and submit. now I get used to it but before, I was like omg... but actually, it's a good practice, if I maybe go to some company, business, its good opportunity to practice. (Grace, class A)

4.3. Challenges and suggestions for Improvements of BL

This section focuses on the challenges that students have encountered in BL as reflected by their learning experiences and suggestions for BL environment improvement.

4.3.1 Quantitative results

Survey results of BL challenges in class A (N=12)

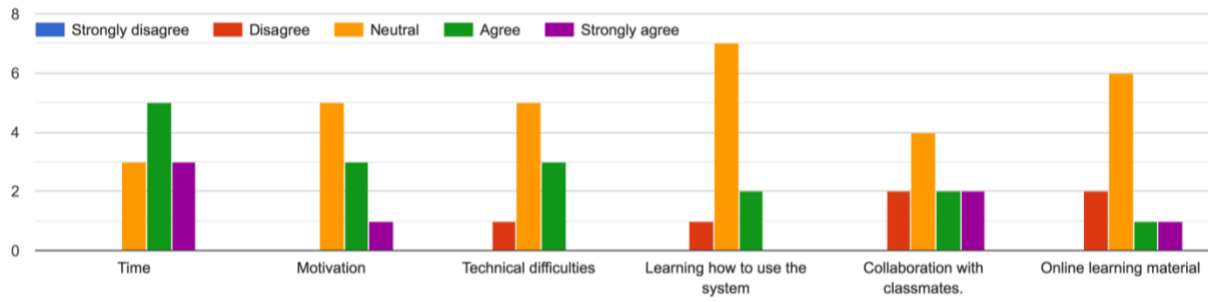


Figure 12. Challenges of BL in class A

Survey results of BL challenges in class B (N=18)

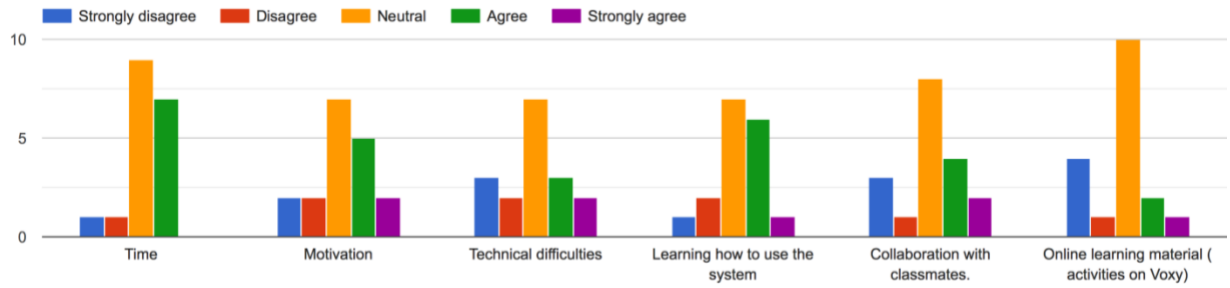


Figure 13. Challenges of BL in class B

Table 13. *Survey results of faced challenges in class A and B*

Impacts	**Time**	**Motivation**	**Technical difficulties**	Learning how to **use the system**	**Collaboration** with classmates	**Online learning material**
Class A	66.7%	33.3%	25%	25%	33.3%	16.7%
Class B	38.9%	38.9%	27.8%	38.9%	33.3%	16.7

From figure 12 & 13, it seems to suggest that in general most students did not have difficulties with learning English in a BL environment. For class A, the challenge with time had the highest rate in which 66.7% (n=8) of the students agreed or strongly agreed that time was a challenge. Different from class A, the percentage of students in class B who deemed time as a challenge was only at 38.9% (n=7). This means "time" for class A is a challenge but for class B the workloads and schedule were manageable for most of them. With regard to the challenge of the lack of motivation, 33.3% (n=4) in class A and 38.9% (n=7) in class B of the learners agreed or strongly agreed, which indicates that motivation is not considered as a challenge. However, the result that most of them held a neutral opinion about the motivation as a challenge could reflect that most students had motivation but were not highly motivated in the learning

environment. As for “collaboration with others” and the challenge of “learning how to use the system,” the rates of students who agreed or strongly agreed in both of the classes were relatively low and most of the students rated them as neutral. The results seemed to indicate, while most of the students did not consider the use of system as a challenge, they nevertheless were expecting some improvements with guidance on how to use the system. Likewise, in terms of the challenge of technical difficulties and online learning material, the students who held neutral opinions accounted for a considerable percentage in both of the classes. The large percentage of neutral opinions show that students might not have difficulties regarding these aspects, but they were not completely satisfied with the learning environment. The results provide the insight that students were in general able to cope with the tasks in BL, but the learning environment was not without space to improve.

4.3.2 Qualitative results

Based on students’ reflections on the challenges they encountered in BL and their suggestions for improvement, three themes emerged and were categorized, these were: (1) time allocation and the design of Voxy activities (2) technical training for learners, and (3) teachers’ role in BL.

4.3.2.1 The time distribution and design of Voxy activities

The interview findings revealed that some participants were not satisfied with the employment of Voxy in the blended language learning program**.** Their responses can be categorized into two main reasons. First, the inappropriate time allocated to the online components were expressed by some of the participants. In order to complete the course, they are required to have two-hours of lab time per week, apart from that, they need to spend another 8 hours outside of the school to finish the tasks in five weeks and it counts as 10% of their grades.

Grace stated that she was stressed because outside of school, she had to cope with the loads of assignments and long hours spending on assignments and was not attentive during the time spent doing the activities on Voxy. Emily complained the workloads were too much for her and that she did not consider it as a valuable exercise that could improve her language skills. She viewed it merely as a task that needed to be completed.

> **Grace**: we have to do 8 hours minimum, it's really long, sometimes... at the class, I can do, but at home I have assignments, so I can't do Voxy first, it's not, it's important but it's not the most important thing for me, so I do only click... [click the mouse and not paying attention when do Voxy activity] . (Grace, class A)

> **Emily:** I think it's too much. I think it as a task, but I am not interested in it. but I have to, sometimes it's boring, some topics are not interesting, the contents do not attract me.
> I don't like Voxy, I think it's very easy for everyone to get the 10%, I think it's...useless. (Emily, class B)

Another major reason was that they perceived the contents and activity design of Voxy as not being attractive enough. Students commented on the learning contents and design as being "robotic," "predictable," "not interactive," "not engaging," and that there were "no updates." Mia mentioned that in order to learn a language, it is important for her to have opportunities to interact with and engage in the activity. The exercises in Voxy might help with listening and vocabulary learning but it is not interactive enough. She also expressed the activities were not challenging enough for her.

> **Mia:** before I found this [the recent news] I didn't like it, Voxy activities, because its one-way teaching and you know you know we came to learn language, language learners need more interaction, even though it helps with our vocabulary, might help with a bit listening but, I'm not engaged in that activity. (Mia, class B)

John, Grace and Mia mentioned that the activities were too simple which does not benefit language development. Mia expressed students might do simple exercises only for the purpose of completing tasks in a short time.

> **John:** I think the difficulties of the unites are not very organized, because they are not related to... for example, in advanced B, all the unites that related to advanced B are not enough challenging, some unites

> are too easy that you feel you are wasting your time. the topics are related to the class contents, but the contents are not matching with the level. (John, class A)
>
> **Grace**: the reason I don't like Voxy is because is it's not interesting, for example, the intermediate level they have interesting contents, but it's not good for me, because it's too simple. (Grace, class A)
>
> **Mia:** [...] and also some activities are very simple, you know, and people use it for the wrong purpose, when the deadline is coming, people try to find a way to increase the number of activities, but it doesn't help to improve our language. (Mia, class B)

It seems that unappealing learning content in Voxy which caused the lack of motivation is a plausible explanation of the result that time was perceived as a challenge by students. Students also hoped the design of the activities could be "smarter." They admitted that the repetitive exercises might have helped the development of some language skills such as vocabulary and grammar, but nevertheless hoped that more advanced and interesting designs would be integrated into the Voxy learning system. Emily gave an example of the activity that is not so "smart":

> **Emily:** One activity is called game memory. I don't think it's very useful because you can press many times, to get the answer and also sometimes, you know the words, but you don't remember the location of the words, it's not testing our word knowledge but only short memories. so, I don't think it's a very good activity. (Emily, class A)

John suggested the need to update activities regularly due to the fact that some students have continuous English courses from the beginner to advanced level resulting in a possible decrease in effectiveness of the activities because of long-term repetition.

> **John:** the other things is the dynamics, it's always the same. For me, I have been here for 2 months, its ok. but if you started from elementary until advanced B. I think you will get bored. it's always the same kind of exercises. Even if you are learning, you know what's happening the next click... I see some classmates [were bored] aaah... Voxy. (John, class A)

Besides, students expected the Voxy learning system to be more user-friendly, Jacob expressed difficulty in finding an activity the instructor had assigned to them, in his case, a searching tool might have been more helpful and effective.

> **Jacob**: most of the time I had a hard time to find the course, like recently we have course, job interview course, you should listen to, so nobody was ever to be able to find it.. I don't think there is searching tool, you have to go through the course just looking at the title. so, yeah, it takes time... (Jacob, class A)

4.3.2.2 Technical training for learners

Some students conveyed their opinions that technical training was a necessity for using two of the major educational technological tools: LMS and Voxy. One student mentioned that he did not receive any training in his first class, so he had to ask for help from peers and explore the software himself. Mia, who was taking the course for the first time, expressed the training was very limited. The simple explanation was not enough for her to fully understand the function and navigation of the online learning system.

> **Mia**: At first, I didn't know how to use it because there is no orientation about how to use Voxy. we just went to the Voxy lab. There was very simple explanation, but we still need some help from the technician, it was different to find out how to use it, for the time being, I had to ask for help, now I find out how it organized. (Mia, class B)

In terms of technical training, students suggested that it would be helpful to have detailed training on the use of Voxy and LMS. Mia proposed that it would be helpful if they were also informed as to how the online components could benefit their language development.

> **Mia:** Students are very busy here, they don't have enough time to looking at all the Voxy program sand clicking all the menu, they don't have time, because we have lots of homework If they give us more details about the usefulness of the program, why it improves our language skills, it would be better. (Mia, class B)

4.3.2.3 The teachers' role in BL

Students' reflections on the challenges and suggestions for improvement are related to instructors' technical skills and teaching performance. Students commented that while most instructors have sufficient technological knowledge, there are still basic technological issues that are problems but could be solved. For instance, students revealed frustrations would be reduced if teachers are able to fix some technical problems, such as system delayed updates of grades.

They suggested that this could probably be achieved through workshops or teacher training. It was also mentioned by students that the documents uploaded on LMS by instructors were disorganized and inconsistent. They had expected the teachers to share a unified method for organizing online content.

> **John**: the disadvantage is that every teacher uses it in a different way […] There is no a single place where you can see, oh these are things I need to do. You can find your homework here and here. it was not so [organized], it can be misunderstanding and confusing too. (John, class A)

In terms of teaching style in BL courses, Mia pointed out the employment of the teacher-centered approach by an instructor who was not effective in implementing a BL environment. She described that students were discouraged when one instructor exclusively gave lectures on grammar points. She had hoped to have student-centered and communicative learning environments where she could have had more opportunities to communicate with peers and instructors in the class which she believes is an effective way to develop language skills.

> **Mia:** I think spending lots of hours for explaining grammar in the book or for giving feedback to each of students is more like one-way teaching and is not an efficient use of time... (Mia, class B)

> **Mia:** Now the teacher speaks much more the students […] now we spent lots of time listening to what he explains and write down what he wrote on the board, it's very boring. (Mia, class B)

> **Mia**: students have more satisfaction when they speak a lot. as a language learner. because we are here to practice our English, so to improve our listening, reading, writing, everything needs but there is a benefit that we are here together, that's the community, if they give us more communication opportunities, it's a challenge, but we learn and benefit from it. if they organize more discussion time, rather than use the time for Voxy, I think it will be much better to improve our spoken English. (Mia, class B)

Also, students shared that different instructors had different attitudes towards the use of Voxy in BL courses and therefore their ways of integrating Voxy varied. According to the students, they might be more willing to do online activities if the instructor gives instructional guidance on the required tasks on Voxy and explain how the activities are relevant to content learned in the classroom. In contrast, they would not value online learning and feel discouraged

to learn from the Voxy platform when the instructor is indifferent and does not connect online components to classroom teaching. For instance, Emily expressed that the instructors played a significant role in shaping her attitude of the usage of Voxy as a component in BL environment. She gave an example of the approach that was adopted by one instructor and she considered it to be effective and useful.

> **Emily**: if the teacher says like I will correct your sentence and vocabulary I think I will pay more attention on doing Voxy and try to think about the vocabulary and make a sentence but if a teacher doesn't say anything they just say don't forget do it, I just do it like, quick and fast, I don't pay much attention on it. (Emily, class B)

The opinions expressed by participants manifested that the instructor's methods of combining online components and classroom teaching were diverse. It showed that they believed the instructors could be more active in the application of technology tools imbedded in a BL environment. The need for teacher training was also addressed by students. For example, Mia hoped the instructors who have good teaching techniques could share their experiences with other instructors through training workshops.

> **Mia:** I think instructors also need workshop, education. Some instructors are amazing. I found some great instructors, they incorporate every de tails in the class, students can feel it, it's a really well- organized class...

A summary of the findings can be found in Table 17 which lists out the learning affordances of the technological tools of LMS, Voxy and the collaborative learning tools and the challenges students encountered in the use of these technological tools.

Table 14. *Summary of learning affordances and challenges of BL*

Technological tools	Learning affordances	Challenges
LMS	**Effectiveness:** - **Pronunciation & Speaking:** uploading recordings and receiving feedback - **Grammar, vocabulary**: peer learning through discussion folder **Flexibility:** - accessible anywhere anytime (e.g. review uploaded PowerPoint, check grades) **Motivation:** - discussion folder **Interaction:** - tracking function	- **technical issues** - inconsistent **organization** method among instructors
Voxy	**Effectiveness:** - **Listening:** interactive design, authentic recordings, comprehension check - **Vocabulary and grammar:** repetitive training - **Pronunciation:** training on intonations and stress, receiving feedback - **Reading:** attractive contents - **Speaking:** matching speaking partners **Motivation:** - interesting reading contents, support independent learning	- -required too much **time** - -unappealing **design** (drill exercises) - contents are **not updated** regularly - instructors' **negative belifs**, **lack connection** to classroom teaching
Collaborative and interactive tools	**Motivation:** - sense of community, share ideas **Collaboration:** - collaborative work on Google docs **Interaction:** - social media, emails and Google docs increase interaction between peers	

4.4 Summary

In this chapter, I presented the results of online survey and interviews in relation to the three themes: learning affordances, impacts of BL, encountered challenges. The learning affordances ware reflected through students' actual usage of the three major technological tools which are: LMS, Voxy and collaborative tools. It appears that students' attitudes towards BL were quite positive, although some students lack motivation due to unappealing online platform activities along with other factors. What's more, students provided valuable suggestions for improvement of the BL environment such as updating online learning contents regularly, training

for both students and teachers. Finally, the result that BL mode affect positively students' independent learning skills consolidates the value of BL in language training and other educational fields.

CHAPTER 5

Discussion

This study examined perceptions of students at two advanced level intensive classes in BL environment. Their perceived learning affordances, challenges encountered and suggestions for improvement as well as perceived impacts of BL were investigated through both online survey and one-on-one interview.

In this chapter, the findings in chapter 4 are discussed in response to the research questions of the present study which are:

1) What are higher education students' perceived learning affordances of BL in intensive classes?
2) How do BL affect higher education students in learning process in intensive classes?
3) What are the challenges and suggestions for improvement in intensive blended learning environments?

5.1 Research Question No.1: What are students' perceived learning affordances of BL in an intensive class?

The first research question addresses students' perceptions of the learning affordance of BL in each of these aspects: effectiveness, flexibility, motivation, interaction and collaboration.

5.1.1 Effectiveness of BL

In terms of effectiveness of BL, students were investigated based on seven language aspects (listening, speaking, reading, writing, grammar, vocabulary and pronunciation) on the use of three major educational technologies: LMS, Voxy, collaborative learning tools. The results of online survey and interviews revealed that listening, reading and vocabulary development received high rate of satisfaction in both classes. The perceived effectiveness of BL in the aspect of pronunciation, grammar and speaking improvement was relatively less, however,

the SD value showed that students had mixed opinions. In this section, these findings are interpreted, and further implications are discussed.

5.1.1.1 Listening

In the interview, most participants expressed that the listening exercises in Voxy were useful. They appreciated the images, videos and comprehension quizzes embedded in the activity. The use of technology in helping learners to improve their listening skills has been studied by past research. Cardenas-Claros and Gruba (2013) proposed a comprehensive framework that shed light on the approaches in which technology can afford support in second language listening. They proposed four categories of "help options": operational, regulatory, compensatory and explanatory. Operational help options refer to equipping L2 learners with the ability to use the technological tools and the knowledge of how the program could support their learning such as "user manuals, training modules, and tutorials." (p.96). The Regulatory help options relate to the assistance provided by technology for learners to accomplish the task, these being "listening tips, directions for specific strategy use and development", and offers post-task feedback in the form of explanations. (p.96). Compensatory help options provide modified input in various forms and combinations such as subtitles, audio, video, images and L1 to L2 transcripts. Explanatory help options aim to make input more salient by providing links for definitions and glosses from subtitles (Cardenas-Claros & Gruba, 2009).

From the students' description, Compensatory and Explanatory were the two help options that Voxy listening activities afforded. The listening activities provided Compensatory help options in the form of subtitles, audio, images and video scaffolding which aid learner understanding. Students' positive comments of "short with good explanation" reflected the Explanatory help options Voxy offered. This result can be explained using interaction hypothesis

(Long 1996) where the interaction between the learner and a computer benefits the learner through the provision modified input, resulting in input saliency (Chapelle, 2003). Input enhancement, input modification or input simplification are possible approaches to the computer or online mediated listening activities that can increase learning effectiveness. During the listening activity, the learner can pause and check out links for definition and glosses, this act of seeking help may reinforce the learning of linguistic aspects that learners find challenging. For instance, it was found that this kind of learner-computer interaction consolidated vocabulary acquisition (Chapelle, 2004).

Another trait of the listening activity that one participant mentioned was the authentic audio recordings which he considered as valuable and effective. Past studies have revealed that the benefits of using real-life input as listening materials trump those of scripted materials since authentic materials feature natural speech patterns like "hesitations, stuttering, false starts, and long, loosely structured sentences" (Field, 2002, p. 244). In a one-year quasi-experimental study, Gilmore (2008) compared the effects of authentic input and textbook materials on learners' communicative abilities and found authentic materials to have a more significant influence on the development of their communicative competence. This is because authentic input provides a wider range of listening material which allows students more chances to notice the differences between their interlanguage system and the authentic input (Gilmore, 2007).

In addition, the online survey results (Mean value) show that students in class A perceived the effectiveness of listening activity as more positive than class B. The different perceptions of students in class A and B of using the same technological tool (Voxy) reflect that the property of the technological tools is merely one of the factors that contribute to students' perceived effectiveness. In this case, the different perceptions might be caused by the different

focus of the course content. It is possible that class A, with a focus on professional development, addresses the training of communicative skills. Students in class A might be more likely to be motivated to do listening exercises than students in class B to develop communication competency.

5.1.1.2. Grammar

It is noticeable that the perceptions of the usefulness of BL in grammar development in class B are more positive than class A (A: 58.3%; B:77.8%). The plausible explanation mentioned in the listening section might apply to the online survey results of grammar as well. Compared to class A, there might be more grammar emphasis in class B as it is an academic writing class. In fact, this grammar emphasis was also reflected by a participant from class B who stated that the instructor spent a rather large portion of time on grammar explanation. Even though this participant showed a negative attitude towards the excessive emphasis on grammar, it is possible that when the instructor addressed the importance of grammar, it motivated some students to spend more time on training their grammar skills through Voxy activities. In contrast, students from class A might pay less attention to grammar development because the grammar was not one of the most important skills. Besides, students' familiarity with the activities in Voxy might also affects a student's perceived usefulness. Students might find it less challenging and useful after a period time when they have a better knowledge of the design and contents of the activities. This explanation was reflected through one participant's description of some students' unwillingness to participate in the grammar activities due to the repetitiveness factor and insufficient challenge level. This explanation is supported by previous studies. López Pérez and Bueno-Alastuey (2014) compared students' perceived usefulness of Information Communication Technology (ICT) on the language skills of two blended courses. The results showed that students who used less ICT had

more positive perceptions of the value of ICT on grammar and vocabulary development than students who used more of ICT in blended courses. They concluded that students' perceived usefulness of ICT on grammar and vocabulary might decreases when students' experiences of using ICT increased.

In the interview, it was brought up by participants that the lack of updates as an aspect of Voxy which should be improved. Hence, it seems that to keep students motivated and value the use of technological tools, one approach that the institution can adopt is to resign online components from time to time.

5.1.1.3. Vocabulary

From the students' responses to the online survey, it seems students had agreements on the usefulness of Voxy in vocabulary development in both of the classes. However, qualitative data show students' perceptions as mixed with some stating that exercises were predictable and repetitive while others considered it useful. One student mentioned that his vocabulary had increased after using Voxy, however, he also expressed the opinion that the vocabulary exercises were not interesting or engaging. The perceived effectiveness of drilling exercises can be explained through behaviourism, where technology serves as a learning tool. It features the drill and practice approach which allows learners to repeat the same exercises a number of times until they master the skill. Drilling exercises are not without their value, in fact, technology can be considered as a strength if it is appropriately implemented. In the case of the BLL course, one possible way to utilize this technological feature is to move all the drilling exercises online and focus on communicative and collaborative work in the classroom.

Students identified the lack of attractive designs as a setback to Voxy's vocabulary and grammar activities, in order to maximize the effects of online drilling activities, a more motivational design that enables to attract students' attention should be used. For example, the use of an electronic badge (an advanced computer-assisted instructional program) has the potential of increasing students' motivation because the achievement recognition function promotes extrinsic motivation (Rushby & Surry, 2016).

5.1.1.4. Reading

The attractive contents and design in the "News module" were valued by most of the participant to develop readings skill and vocabulary. The "News module" is one reading activity in Voxy that features up-to-date news and encompasses various topics including sports, cooking, travelling, politics, entertainment among others. Through news reading, Jacob perceived it as useful in helping him with vocabulary learning, "I learned a lot of words in different fields, so I think it helped a lot". Apart from the perceived benefits to vocabulary accumulation, another plausible reason that students favoured this activity was because of its practical function. Students expressed that reading news allowed them to be informed of the current issue, and what's more, they can use this information to interact with peers. In other word, this allowed students to relate to real-world events, which motivated them through its characteristics of practicability. Talking about self-motivation, Vanslambrouck et al. (2018) applied Deci and Ryan's (2000) self-determination theory to examine adult learners' motivation when participating in online and blended courses of teacher training programs and found that the majority of the participants cited "the increase in the knowledge it offers" as their motivation. The reflections of students in the current study also conveyed that the perceived usefulness of the contents in Voxy was a major point of motivation. Motivation, as one of the significant factors of

learning engagement and success, is worth taking into consideration in the design of learning contents. Based on student responses, it is likely that one way to boost learners' motivation is to integrate a variety of topics with attractive contents into the exercises.

In addition, the design of this activity attracted students for the reason that it interacts with students throughout the reading process by allowing them to highlight the new vocabulary and retrieve the definition promptly. This could be explained by the Interaction Hypothesis. According to Chapelle (2003), When a student asked for help from the computer by highlighting new vocabulary, this can be an interactive process between the student and the computer. The chances that students improve language ability (e.g. reading) increases because the interaction (subtitles, e-dictionaries, highlighting vocabulary) makes input comprehensive to students.

5.1.1.5 Pronunciation

In the interview, a participant emphasized the usefulness of receiving corrective feedback on his pronunciation stating that the feedback enabled him to notice his errors in pronunciation while speaking. Corrective feedback in the field of Second Language Acquisition (SLA) has been discussed for decades. Schmidt's (1990) 'noticing hypothesis' explains the necessity of feedback in the language learning process especially with regards to speaking. The hypothesis addresses the importance of learners' self-awareness in the acquisition of specific linguistic forms. While noticing one's, own errors can be a challenge, receiving corrective feedback is crucial as the errors produced by second language (L2) learners are often caused by the phonological characteristics of their first language. Therefore, receiving corrective feedback is the most important clue to noticing the discrepancy between the student's initial spoken output and the correct pronunciation of the target language.

This is an example of the effective use of LMS that satisfies students' needs. In this case, while the easy use of technology (the mobile phone recorder and the function of uploading files) is important, the reason students perceived it as effective was not because of the technology itself but because the activity design had an impactful or beneficial pedagogical role. In other words, it is not the question of which technology to use that influences the significance of learning, but whether the technology is used to construct learners' knowledge (Strommen & Lincoln, 1992). In the context of the present study, while voice recorders in mobile phones might not be an advanced form of technology, the students were satisfied because this basic technology allowed for an activity (voice recording, uploading, then receiving feedback) to produce very real and effective benefits. Drawing from the example discussed above, it seems that learning effectiveness is more likely to be increased if the primary consideration of the BL design is based on a pedagogical foundation.

One activity in Voxy which was designed to train pronunciation was described by students as "helpful" because it automatically checked word stress, intonation and even provided help with various accents. Prior studies examined how technological tools aided pronunciation improvement through the feature of providing feedback. Neri et. Al. (2002b) argued that the feedback provided by many Computer Assisted Pronunciation Training (CAPT) systems were not designed based on any particular pedagogical needs but instead focused on the novelties of technology. They reviewed a variety of L2 pronunciation feedback features by different CAPT systems and concluded that feedback provided by technology should be "comprehensible," "allow verification of response correctness," and provide an 'antidote' for improvement. "Comprehensible" refers to feedback provided by the system which can be easily understood. "Verification of response correctness" is a type of feedback that involves interaction between the

language learner and the computer: the student gives instructions to the computer, if their utterances are understood by the computer, the computer will perform the task in a simulated situation similar to a digital game. From the view of the Interaction Hypothesis, this type of feedback can be very effective because it simulates real-life interaction (Neri, et. Al., 2002b). An 'antidote' refers to the provision of a brief explanation or suggestion for improving pronunciation.

From the students' responses in the interview, it seems that, on the whole, the students who had used the pronunciation training activities viewed them as satisfactory, indicating that the feedback from Voxy was comprehensive. However, it does not fulfill the other two requirements, merely stimulating students to make use of pronunciation training with fundamental functions is not sufficient, the activity design needs to be upgraded based on pedagogical purpose. L2 pronunciation feedback is crucial as learners are not able to notice or realize the distinction between their utterances and the target sounds because of the significant impact of their L1. As discussed earlier, students valued receiving personal feedback from teachers regarding pronunciation, hence, if the teaching goal is to improve speaking skills and pronunciation, teachers should give sufficient corrective feedback, be it face to face or via technological tools.

5.1.1.6. Speaking

Speaking perceived as not effective in both classes but students' perceptions are variant. The results revealed some students have found speaking partners, some were informed of this function but never used it and some have no knowledge of this function of Voxy. For example, Emily reflected that she appreciated the opportunity to find a speaking partner for practice, however, she has to prioritize the assignments and tasks due to the busy schedule.

This could possibly explain the survey result that students have different opinions: students who have found a speaking partner might have had a positive attitude towards the usefulness whereas those who did not have the chance to use it for any reasons might have had a less positive experience. The fact that some students were not informed of the availability of speaking practice supports students' suggestion for learners' training which is discussed in "challenges and improvement" section of the present study.

The oral skills practice was pointed out as a limitation of CALL (Chenoweth & Murday, 2006). Past studies employed various approaches to integrate online tools to enhance students' speaking ability (e.g. videoconferences and uploading voice recordings on LMS) and demonstrated positive results. To give an example, Grgurović (2011) reported the speaking activity that requires all the students to record their answers concurrently in the lab motivated students more than in-class pair or group work. Both the instructor and students considered this activity added value to classroom instruction. Furthermore, Grgurović (2011) pointed out that teachers' presence and assistance during the lab activity allow for individualized instruction. This may be especially beneficial to students who have less self-learning skills for the reason that they might gain more chances to be assisted in the lab than in the classroom. In the present study, as mentioned in the pronunciation section, one participant also showed his appreciation of improving pronunciation and speaking through recording voice and receiving feedback. This shows that this activity could be an effective approach to improve students' pronunciation and speaking skills. Besides, to increase students' motivation, instructors could provide guidance and assistance during the speaking activity as described in Grgurović (2011).

5.1.2 Flexibility

The students' interview responses revealed a generally positive perception of the use of LMS with flexibility rated as the most significant benefit. This ties in with past research which found that flexibility was the main reason why students chose a blended course (Vaughan, 2007; Poon, 2013). In this study, students mentioned that the ubiquitous feature of LMS allows them to check on the learning materials that have been presented in the class without the constraints of a specific set time or location and even permits for an extended period of learning time as well. One participant described LMS as a portable and powerful "mini classroom" which shows why the students favour the flexibility that an LMS "schedule" affords. This is in line with Vanslambrouck et al.'s (2016) study which investigated students' perceptions on blended and online learning environments and found that flexibility in terms of time, place and pace is the most appreciated attribute of the blended learning environment. However, through the interview phase, one participant from class B valued flexible time and location LMS offered and then she commented: "I don't think LMS is used more than uploading material that we have studied in the classroom" which shows students might expect the instructor makes more use of the flexible trait of LMS.

5.1.3 Motivation

As mentioned in the section "reading" under effectiveness, students 'motivation in the BL environment was reflected through the practicability characteristic of "News module". Students' perceived usefulness of this activity motivated them.

Another motivating usage of the technological tool was the discussion folder in LMS. According to students' responses in the interview, the discussion folder was favoured by most of the students because of the sense of community it created. Discussion folder allows students to share their posts and review others' ideas. The participants mentioned through this process, they

have chances to compare their peers' work and make improvements by learning from the more advanced usage of grammar or vocabulary.

Besides, the asynchronous feature allowed them to take time to think thereby increasing their linguistic accuracy. These features play a part in promoting their participation in discussion folder activities. The motivation and usefulness that forums afford were pointed out by past research. For example, Miyazoe and Anderson (2010), in their mix-method study, showed that students had positive perceptions of the use of three online writing tools -forums, blogs and wikis in a blended English foreign language (EFL) course. They found that students were concerned about the fact that their posts would be read by others, which encouraged them to put more thought into what they post, thus allowing their personal voices to come through in the discussions that require them to express their point of view. The authors related that the students commented that sharing posts publicly had been challenging but useful.

However, Bliuc et al. (2011) presumed differently in their study, describing that students might perceive online discussion as a part of the course assignments instead of viewing it as a valuable learning component. Garrion & Vaughan (2008) stressed that the structure and facilitation of online discussion should be properly designed and considered in order to achieve satisfactory results. Based on the findings of the present study, it seems the instructor had designed the discussion forum properly as students favored this function of LMS, responding that they liked how the topics the instructor posted in the discussion folder was related to their learning content. One example of an appropriate integration of classroom with online components was given by a participant: she said she liked learning how to write a business email in the classroom and then being able to practice by writing business emails in the discussion folder. One participant even said that the discussion activities were so useful and motivating that

they should be assigned more often to remain motivated. In this context, apart from the sense of community within the discussion forum, it is possible that the students are also attracted by the way instructor integrated discussion forum activity into classroom teaching which engaged and motivated the learners. For instance, discussion topics designed to be closely related to in-class learning might increase their motivation to learn.

5.1.4 Collaboration and Interaction

In terms of collaboration in BL, students showed positive perceptions of using collaborative tools. Their responses conveyed that the employment of these collaborative tools at hand provided flexibility and supported group projects which increased interactions as well. In addition, students' responses regarding the attributes of collaborative tools reflected that they valued the chances for learning while involved with a group project.

The positive responses from learners of the use of collaborative learning tools for group work are supported by the sociocultural theory which states that language is acquired by interacting with peers or experts. Language, in this case, plays the role of both leaning target and the tool for language improvement (Lantolf & Thorne, 2006), making it crucial for learners to participate in the collaborative learning process. The use of collaborative learning tools permits synchronous contributions from multiple students. It is through instantaneous social interaction with peers and instructors that learners' language skills can be improved.

The concept of interaction is an important component in the design of thoughtful pedagogies in both online and face-to-face teaching. In BL studies, how-to and why blend web-based interaction in face-to-face teaching are the questions that have been discussed by researchers (Liang & Bonk, 2009). Studies have shown that in order to create a meaningful

interaction with technology through BL curriculums, instructors should take into consideration of the learning contexts and decide how to use technological tools in various settings and predict students' responses to the usage of these technologies (Bax, 2003; Stracke,2007). In the present study, the use of Google drive was appropriated for the purpose of discussing reading materials between group members. Based on one participant's description, it promoted her interaction with peers and deep-thinking skills by questioning and commenting on peers' opinions of the reading materials. Furthermore, addressing the importance of social connections of student-instructor and between students, Liang and Bonk (2009) recommended that multiple interactive tools (e.g. social media, blogs) and supporting technologies should be employed in the course design because of the diverse needs and preferences of students.

One important issue that has been a focus of BL research is how to connect classroom teaching and online components. Researchers pointed out that social support and training are two contributing factors that build connections between face-to-face and technologically supported component (Stracke,2007). Social support, in this context, refers to the right amount of guidance and support from instructors through interactions/communication either in the classroom or with technologies. In the interview, Thomas mentioned it was "wonderful" that the instructor tracked the discussion between his group members on LMS, she then communicated with them in the classroom and offered assistance. The instructor's method to connect classroom and online interaction were quite successful and this could contribute to the ideal seamless transition from one component to the other. Thomas' comments showed that it seems students appreciated the indistinguishable interaction between classroom and online.

Drawing from the result above, it appears blending web-based interaction into the classroom seamlessly promotes interactions and potentially build on social connections between students and instructors.

5.1.5. Age and perception

Under the section "correlation of quantitative variables", the results show that age might contribute to students' perceived effectiveness of BL in listening, grammar, and vocabulary skills development. Past studies have examined the influence of student's individual difference on their perceptions and learning outcomes. In a quantitative study with 1431 participants, López-Pérezm et al. (2010) found that students' perceptions towards BL (utility, motivation and satisfaction) are positively related to their performance. Furthermore, they also discovered a positive correlation between the variables of age and background and their learning outcome, indicating that age as an individual difference plays an important role in shaping students' perception which leads to learning achievement.

Stacey and Gerbic (2008) also pointed out that students' maturity is very likely to play a part in their positive attitude towards BL. It is possibly because mature students have better skills in self-regulation and increased motivation for learning (Vaughan, 2007). Vaughan (2007) reported that first-year students are more likely to perceive BL as challenging because they are used to the passive traditional learning mode and lack active learning experience. Similarly, drawing from a constructive perspective, Johnson (2014) emphasized that self-directed learning, active engagement and motivation are critical success factors in the BL environment.

In the present study, a mature student's response in the interview "I don't need to be motivated" supports the findings of past research that mature students are more likely to be self-

motivated and their perceptions of BL effectiveness tend to be positive. The characteristics of BL and its relation to students' self-directed learning ability suggest that some students especially junior students might need time to adapt to the BL environment and extra support may be necessary.

5.2 Research Question No. 2 How do BL affect higher education students in learning process in an intensive class?

The second research question aims to understand students' perceptions of the impacts of the use of technological tools into classroom teaching in their learning process.

5.2.1 The impact of blended learning on learners' independent learning

In alignment with past research which studied the influence of blended learning on learners' autonomy, the present study revealed the enhanced independent learning skills as a significant impact of BL. Tanveer (2011) reported that blended learning enables students to become autonomous and confident learners and, through various activities and student-centered forms of learning, enhances time management skills and motivation. Soliman (2014) also noted that online learning supplemented face-to-face classroom teaching and enhanced the students' language proficiency and independent learning skills.

Dang and Robertson (2010) pointed out that the close connection between blended learning, or CALL, and autonomous learning skills are two benefits that blended learning environments affords. Dang and Robertson (2010) analyzed the impacts of LMS on learners' autonomy from the sociocultural theory view. Based on a review of related studies, they summarized that the benefits of the appropriate integration of CMC or CALL in language

classrooms (interaction, engagement, collaboration, choices, negotiations, personalization and reflection) promote the development of autonomous learning skills.

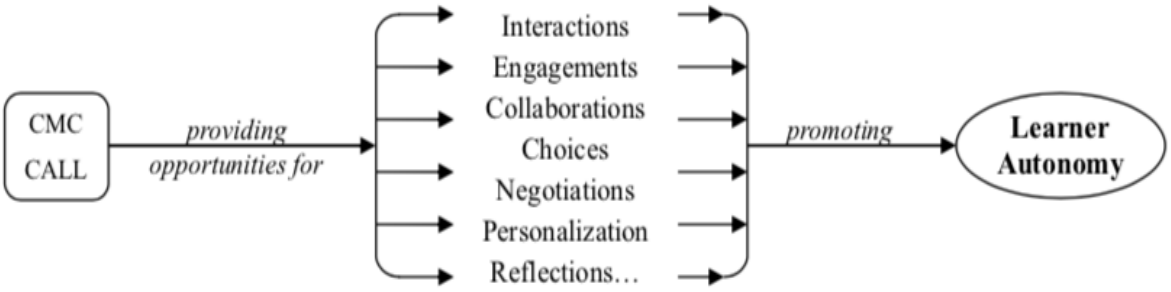


Figure 14. The relationship between CMC and learner autonomy in EFL education (adapted from Dang & Robertson, 2010).

In the present study, various skills that the technological platforms LMS, Voxy and online collaborative learning tools seek to enhance were reflected from the learning affordances addressed in the first research question. Examples include: interaction in the discussion folder in LMS which allowed for the tracking of work progress between the instructor and students; Voxy modules which promoted the students' linguistic development as well as their learning autonomy by having them negotiate the multiple resources on the platform; and the increased chances for peer interaction and review on online collaborative learning tools. Thus, through the online learning platforms in BLL, the students' independent learning skills are fostered.

Another impact that students mentioned was increased digital literacy. One participant stated she changed from an "old-fashioned" learner who preferred paper to a computer-savvy learner. It is often assumed that students are ready to use basic or advanced digital tools because of the prevalence of the internet, however, the study discovered that not all the students are equipped with the capability. This study revealed that students should be evaluated for their technological skills before taking a BL course so they could be provided with appropriate training and support in the event that they had little technological knowledge.

5.3 Research Question No.3 What are the higher education students' challenges and suggestions for improvement in an intensive blended learning environment?

The third research question seek to look into the challenges students have experienced in the blended language learning program and their suggestions for improvements.

5.3.1 Challenge 1. Time allocation on Voxy and unappealing activities in Voxy

The results of the online survey regarding the challenges students faced with BL courses revealed time to be the greatest factor. One explanation might be the nature of intensive courses themselves, that is, compared with part-time courses, more time is required to be dedicated to assignments and exercises. This could be an issue of properly fitting technology into a curriculum. How much time should be apportioned to the online component? There is no magic number for this question. However, one approach to solve this problem is to listen to both students' and instructors' voices and make adjustments accordingly.

Students' comments on the unappealing design of Voxy contents also reflected that their lack of motivation is possibly the cause of time as a challenge. Gleason et al. (2013) pointed out that students' perceptions of the quantity of time allotted to online components compared to face-to-face learning were contradictory. They also found that students who stated that not enough time was given to online learning considered themselves to be more engaged in the learning process when technology is utilized. These findings indicate that in BL environments, engagement and motivation with the utilization of digital tools is a crucial factor that influences students' opinions to skew towards optimism regarding online learning.

Based on interview responses, students had expected to have a more interactive learning environment with technology; they valued the interactive feature in the learning process; they

thought that activities which feature one-way teaching cannot fulfill learners' needs. The interaction approach to SLA states that the interaction with technology increases the chances of learners noticing the gaps of their linguistic production which then enables them to modify their output. It is expected that language development would be enhanced through this interactive process.

The issues mentioned by learners suggested that if the institution were to incorporate more interactive and interesting activities into the design of Voxy, learning effectiveness and student motivation would likely be promoted.

5.3.2. Challenge 2. insufficient Technical training for learners

Some students remarked on the insufficient technical training provided by the institution as a challenge and they suggested detailed training on the use of LMS and Voxy was necessary. Grgurović (2017) reviewed 26 blended learning studies, in alignment with the results of the present study, he discovered that students are aware of the need to have training especially "the advanced computer-literacy skills" (p.163). Furthermore, he concluded that students' technical training should be "gradual, technological, and pedagogical in nature" (p.163) which indicates the training should include both the practical usage of the tools (how) and the rationale (why). He explained the reason for students to know pedagogical aspects of blended learning is to equip learners with strategies for using the online tools in the hopes of enhancing learning efficiency. That is to say, the training should explicitly spell out BL benefits, provide specific methods of the effective use of course technology and provide the necessary support for study skills support throughout the course (Bueno-Alastuey & López-Pérez, 2014; Grgurović, 2017). Karabulut, LeVelle, and Suvorov (2012) also call for the evaluation of students' needs and technological preferences and taking these factors into consideration when designing courses.

5.3.3. Challenge 3. Teachers' role in the BL environment

Literature asserts that the teacher plays an important role in the implementation of BL, and the students' responses reflect this. Their comments include among others, teachers' technological capabilities, their attitudes towards technology, teaching styles in BL courses, and approaches to integrate technology as well as the need for teachers' training.

5.3.3.1 Technical and pedagogy issues

The present study revealed that in BL environment technological issues could be one of the challenges faced by students (e.g. system delayed updates of grades). It indicates that teachers' sufficient skills in solving technical issues could contribute to the improvement of students' BL experiences. Apart from technical skills, the appropriate teaching style or pedagogy that teachers employ in BL mode should be addressed for an effective learning outcome. As one participant in the interview pointed out, the teacher-centered teaching style and the exclusive grammar lecturing are not an effective way to improve language skills in the BL environment. This is in line with Johnson's (2014) finding where teachers' preference for covering all the learning material in class decreased the potential effects of the combination of online and classroom teaching.

5.3.3.2 Lack of integration

Another concern student brought up in the interview was that some teachers seemingly had a negative disposition towards technology, and the lack of integration between online components and in-class learning content would decrease the effectiveness of BLL courses and also their motivation to learn. The lack of integration in the BL environment has been shown by past studies to be a challenge and a major cause of the failure of blended learning. (Stracke, 2007). The importance of making a connection between online and classroom learning can be

seen from students' responses. An example a student described as "very helpful" was when an instructor asked them to learn five vocabulary items on the Voxy system and make five sentences using these words, the instructor would then provide corrective feedback on their work. In this case, the instructor used Voxy as a learning resource through the assignment of tasks using the online material. Past studies have explored other approaches to strengthen the connection between online and classroom teaching, talking about common pronunciation errors students produced online and reminding students to check their online feedback in class (Grgurović, 2011).

Based on the pedagogical usage of educational technologies, Gruba and Hinkelman (2012) provided approaches to infuse online components and face-to-face teaching smoothly to increase effectiveness from different dimensions. Teachers are encouraged to design BL courses on the basis of pedagogical purposes and the strengths of both online and face-to-face learning. Senior (2010) also advised that teachers should concentrate on general pedagogical outcomes and supplement their classroom teaching by incorporating technology, and also take into consideration learners' interests, requirements, experiences, and goals.

5.3.3.3 The need for teacher training

Additionally, some participants proposed that the instructors themselves might need training and specifically pointed out the instructors need to develop better strategies to improve students' attention and to increase learning motivation in BL environments. The fact that participants in this study expressed their need to be motivated, especially with the online components of BL courses, indicated that they lack a good level of self-directive learning skills.

The difficulties of making a transition from traditional classrooms to an online learning environment, for both students and teachers, were reported in a study by Murday et al. (2006, 2008). They revealed that some challenges encountered by students include the use of digital learning material, self-discipline and self-directive learning skills. For teachers, training was described as the most critical aspect of teaching in a BL environment. Furthermore, they pointed out that teachers need to be aware of the differences when managing face-to-face teaching and online components of a BL environment. It was noted by Johnson and Marsh (2014) that to encourage students' active participation and independent online work management constantly was a challenge for teachers. Nevertheless, part of the success of BL involves exactly this challenge to teachers: to keep their students motivated and engaged.

The teacher plays a very important role in the promotion of an effective and satisfactory BLL environment. According to Garrett (2009), students would benefit more from well-trained language teachers no matter how good the learning material is. Inadequate training for teachers was reported in many studies. For instance, Johnson (2014) noted that while most of the teachers' training programs are found in the education of primary and secondary levels, very limited training was discovered in higher education. Johnson and Marsh (2014) suggested providing a platform for teachers to share their various perceptions and experiences of both classroom and online learning in a BL environment as this would create new ideas and potentially lead to improved practices in BL courses. Professional development for teachers would be a possible way to solve the teacher-related issues mentioned above and the training design could be based on students' feedback as well as the teachers' actual technological capabilities.

5.4 Summary

In this chapter, I discussed the results presented in chapter 4. Through the discussion on participants' perceived benefits of the three technological tools to language developments and impacts of these tools on various skills, I analyzed the beneficial functions and usages of these tools and provided some suggestions for improvements. Examples include students might need more guidance and supports in the language lab for speaking skills development; there might be a need for instructors to pay more attention to junior students who tend to lack motivation in BL environments; and students' digital skills are ideally evaluated before taking BL courses because of the possibilities of varied technical backgrounds they have. More insights on and approaches to improving the learning environment are provided via the discussion on the challenges of BL in the third research question. Specifically, technical training for both students and teachers are needed.

CHAPTER 6

Conclusion

6.1 Summary of findings

This study investigates students' perceptions on the learning affordances on BL, more specifically the contribution of educational technology: web-based learning Voxy, LMS MyCourses and collaborative learning tools. It revealed that different technological tools afford various aspects in terms of promoting language development. Based on the students' reflection, Voxy benefits learners' improvements in listening and reading skills, and vocabulary learning. The major reason of the perceived contribution of Voxy are (1) the subtitles and highlighted definition provided in the listening activity allows "enhanced input", (2) the useful and interesting contents in the news section boosted learners' motivation, and (3) automatic feedback on pronunciation error promotes accuracy. The feature of MyCourses favoured by students most is its flexibility which allows them to visit the site anytime and anywhere. The second feature is the discussion folder embedded in MyCourses which increases learners' motivation and engagement. This most likely leads to enhanced attention being paid to language accuracy, especially on grammar and spelling. The third characteristic acknowledged by the students was the received personal feedback from instructors on their uploaded audio recordings. Besides that, the function of MyCourses also allows instructors to monitor and track students' progress, supporting student-teacher interaction. In terms of collaborative learning tools, students regarded them as a digital medium that brings convenience, increases collaborative opportunities and stimulates critical thinking skills through discussion and interaction with peers. BL is indeed full of potential as a future learning mode as the finding revealed that this mode fosters independent learning skills and digital literacy which support their future pursuit development.

Some issues for a BL environment were raised by the students in the study and these includes (1) the lack of orientation of the use of software and system, (2) inconsistent method of organizing learning files on MyCourses, (3) non-interactive activities on Voxy, and (4) lacking connection of online components and in-class activities and teachers' negative attitude towards technology. Correspondingly, the suggested solutions are providing training supports for both teachers and students and improving the design of web-based learning system. Specifically, training for students could include both the operations of the digital tools and the rationale behind them. AS for teacher training, efficient methods to use LMS and approaches to connect online components to face-to-face teaching should be given attention. Furthermore, teachers should be aware of their significant roles in fostering students' positive perceptions towards BL learning which will lead to more satisfactory performances. To improve students' satisfaction and motivation in BL courses, the design of the online learning components ought to have a pedagogical basis in which SLA theories come to play. Students' description of the challenges they have faced, and their suggestions provide feasible methods to improve the blended learning environment.

The use of technology aims to improve teaching quality so that the learning experience can be enhanced. In fact, technology and pedagogy are not distinct components but are interdependent in the blended language environment. Instructors play an important role in the transformation of technology-facilitated education. As there is no one-fit-all approach in BL, the value of the implementation of technology in classroom teaching can be maximized only if the instructors have sufficient knowledge of technological tools and make good use of their features in an appropriate learning context. However, it does not mean that the more advanced the technologies, the more effective the teaching results will be. It also does not mean that the use of

technology will enhance learning with any certainty. Technology should not be applied for the sake of using it, the key consideration should be whether the use of technology can fulfil students' needs and learning targets. To increase learning efficiency, instructors are encouraged to design the courses based on SLA or CALL related grounded learning theories and be sufficiently updated regarding technology in education.

6.2 Limitations of the study

There are three limitations in the present study need to be reported. First, the sample size was small, only 8 participants for the interview and 30 participants for an online survey. During the participant recruitment, it was the end of the 6-weeks learning session which means more workloads for students. Many students were concerned about the time, so it was a challenge to recruit more participants.

Second, and the programs were intensive courses which limit its generalizability in ESL blended learning settings. Intensive courses allow the high frequency of face-to-face interaction between students and instructors. The effects of using interactive tools in part-time or online classes which requires the low frequency of physical presence in the classroom might be different from intensive courses.

Third, while the students' perceptions provided some insights into the use of educational technologies as one possible approach to improve a learning environment, the teachers' points of view and attitudes were not examined in the present study. In the process of conducting the present research, I have noticed that there were existing discrepancies between instructors' assumptions and students' comments regarding the activities on LMS. Although a short encounter with the instructors of these two classes during in the field study gave me a basic idea of their teaching approaches and attitudes; hearing the other side of the study is needed in order to have a more comprehensive understanding of the learning environment.

6.3 Implications and recommendations

The findings of the present study demonstrated that the advancement of technology has no indication of improved learning effectiveness and pedagogy in a BL environment, and there are various issues which require attention from researchers, institutions and instructors.
On the one hand, students have the awareness of the potential benefits of the utilization of educational technology and this represents the identification of the learning affordances of BL. On the other hand, the negative aspects detected in the present study contribute to the research goal of establishing a more satisfactory learning environment.

With the purpose of creating an effective and advantageous BL environment, first of all, it might be helpful if institutions provide sufficient support and training to both instructors and students. The training should not only emphasize the methodological approach but also pedagogical training. In other words, apart from learning how to use the tools, the instructors and students may be informed of the benefits and know *how* and *why* technological tools help them with learning. Secondly, the design of technological tools such as web-based learning Voxy should have a theoretical base and target at fulfilling students' needs. In this context, the activities on Voxy should be interactive and attractive enough to have increased motivation and engagement. As Voxy is the only learning software implemented in the program, students' motivation will drop after they are acquainted with the online contents. It is suggested that institutions implement a variety of digital tools to reach a more engaging and fun learning environment. Thirdly, instructors play an important role in shaping learners' perceptions and influence their actual use of technology. Therefore, in the design of courses, it would be very useful if the instructors pay attention to the seamless integration of exercises in employed software or system into face-to-face instruction which in a way encourages and motivates

students to use the technological tools. Besides, instructors should keep a balanced usage of both components and avoid being biased, as there appears to be the common belief that online learning is less important in the curriculum. It is also effective if institutions provide all the support necessary to the instructors. It might start from organizing collaborative teaching workshops which would create a sense of community and provide a platform for experience sharing among ‘innovative’ teachers and ‘traditional’ teachers.

6.4 Future research directions

In the present study, the investigation of students’ perceptions alone is not sufficient to understand the whole picture of the BL environment. Future research could include classroom observation and analysis of designed activities as well as interviews with teachers for an in-depth examination of the BL environment. Besides, students do not value the use of technological tools might because they do use them or not enough. Hence, to validate their answers, future studies could collect data about students’ actual use of these technological tools through recording the time and progress of tasks completion.

In addition, the investigated BL classes of the present study were on an intensive program which revealed that might differ from a part-time study program. Future studies are encouraged to look at the students’ perceptions of part-time BL environment, especially the challenges they might face so that more substantial conclusions could be drawn.

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Appendix A Informed Consent Forms for participating students

Department of Integrated Studies in Education
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Study Name: Students' perceptions of the learning affordance, challenges and impacts of blended language learning

Researcher: Jinxiu Liu, Department of Integrated Studies in Education,
Jinxiu.liu@mail.mcgill.ca Tel. (514) 839-5368

Hi everyone,

My name is Liu Jinxiu, a master student at Second Language Education program in the Department of Integrated Studies in Education. I am currently doing my thesis research looking at blended language learning environment focusing on students' perceptions on the learning affordances, challenges and impact on their learning process. I am very motivated and passionate about this study as it is hoped my study could contribute to create a more satisfactory and effective blended language learning environment for language learners.

I am very delighted to invite you to take part into my study. Your valuable opinions are very significant to the completion of this project. Thank you very much for your participation!

Sincerely,
Jinxiu

Purpose of Research: The present study aims to investigate students' experience of learning a foreign language using blended learning approach (blend of classroom teaching and online learning). It focuses on students' perceptions on the use of technology, challenges and impact on their learning process.

Things you will be asked to do in the research process: You will be asked to complete an online survey. The survey is expected to take around 15-20 minutes. Regarding the skype interview, you will have options to participate or not. Please tick Yes or No at the back of this consent form**. If you do not consent to a skype interview, you will not be contacted. Only if you consent to a skype interview, you will be contacted for online interview arrangement**. The interview will be video-recorded. It is assured that the video recordings will never be disseminated, and they won't be seen by anyone than the researcher and Prof. Annie Savard who is the supervisor of the researcher of this study.

Confidentiality:
You are assured that all data will be kept confidential:

- Electronic files, including online survey and video-recordings (with your consent), securely stored on secure cloud storage service pCloud.

- Identifiable information like signed consent forms stored separately in locked filing cabinet in locked office accessible only to me and my Supervisor.
- Published reports will have no identifiable information linking you to the study since fake names will be assigned to data collected after video recording.
- All data will be destroyed after 7 years following publication of results/reports.

Benefits of the research to you: There will not be financial compensation for participants. However, it is hoped the participation in the study helps you reflect on your learning process in this language course. The information collected in this study may benefit other language learners as learners' diverse needs might be considered in the blended language course design so that a more satisfactory language learning environment will be created.

Risks and discomfort: There are no anticipated risks associated with this study. You may also withdraw from the study at any time if you feel uncomfortable.

Voluntary Participation: Your participation in this study is voluntary. Your choice of whether participating or not will be respected. Before the skype interview, you will be informed you have right to withdraw from the skype interview even though you contented to skype interview in the consent form. You may refuse to answer any question that you are not comfortable with in the survey or in the interview. Your decision will not influence your relationship with researcher or any related institutions. It is assured that any of your remained information after your withdrawing will be returned to you or destroyed.

Questions about the Research: If you have questions about the research or your role as a participant in this study, please contact me using the email address Jinxiu.liu@mail.mcgill.ca or the phone number (514) 8395368 or contact my supervisor Professor Annie Savard: annie.savard@mcgill.ca
If you have any questions or concerns regarding your rights as a participant in this research study, please contact the McGill Ethics Officer at 514-398-6831 or lynda.mcneil@mcgill.ca

Declaration of Consent
Please sign below if you have read the above information and consent to participate in this stud. Agreeing to participate in this study does not waive any of your rights or release the researches f rom their responsibilities. Acopy of this consent form will be given to you and the researcher will keep a copy.

I consent to be interviewed Y_____ N _____

If you consent to participate the online interview, please provide your email address below

_____

Participant's name: _____
Signature: _____ Date: _____

Appendix B Interview Questions

1.General Questions:

1) Could you tell me what types of educational technologies the instructors have used in your class?
2) Which one the instructor used most in the class?
3) Which one do you think is the most useful tool? Why? Could you give me one example?
4) Which activity do you like most with the use of technology in the classroom teaching?
5) Do you like the learning mode of using technological tools in combination with
6) classroom teaching? Why?
7) Compared with traditional or fully online learning, what are the benefits the blended learning environment has?

1. The use of MyCourses:

1) For what purposes do you use MyCourses and when do you use MyCourses
2) how does it help you with language learning? do you think its effective?
3) What language skills it helps you to improve? How? Why?
4) What do you like about MyCourses? What are the other benefits it has?
5) Do you think it is flexible to use MyCourses? How? Why?
6) Do you think it motivates you to learn the language? Why?
7) Does it help with interaction? Why? How?
8) Does it help with collaboration? Why?

2. The use of Voxy:

1) For what purpose do you use Voxy?
2) What do you like and do not like about Voxy?
3) How does the teacher introduce Voxy?
4) Did the instructor apply the contents on Voxy into classroom teaching?
5) Are the contents related to classroom teaching?
6) Do you think if teacher integrate Voxy and face-to-face, it would be more helpful?
7) If the teacher uses more Voxy and show positive attitude, would you have more motivation to do Voxy activities?
8) Do you think it helps you with your language development? like listening, reading, writing, speaking, pronunciation, grammar and speaking skills? others?

3. **Collaborative tools:**

1) What tool did you use for collaboration with peers and interaction with peers and instructor? How do you use them?
2) Do you like the use of these tools? Why? How?

4. Impacts of BLL:

1) What impact does BLL had on you?
2) After the 6-weeks of study, do you think you become better at managing your time
3) Become more independent with your study?
4) Which of the tools helped you with the change you have experienced?
5) Why do you think you have the change?

5. Challenges of BLL

1) What challenges have you met when using MyCourses?
2) Was there something difficult for you when you use Voxy or in the classroom learning?
3) Did you face challenge with time management? Why do you have this challenge?
4) Did you face challenge with Motivation? Why do you have this challenge?
5) Did you meet difficulties with the use of technology? How? Why?

7. Suggestions for Improvements

1) What should be improved in terms of MyCourses?
2) What should be improved in terms of pedagogy?
3) How is the integration of MyCourses?
4) What about the contents on Voxy?
5) If you were course designer, what changes would you make? What to keep or add more work and what to delete?
6) If you were the course designer, how will you use technology to improve learning efficiency?

Appendix C Online Survey Questions

Section 1. Demographic information

Q1. Gender

- ◯ Female
- ◯ Male
- ◯ Prefer not to say
- ◯ Other: _____

Q2. Ethnicity

- ◯ African American
- ◯ Asian
- ◯ Caucasian
- ◯ Other: _____

Q3. Age group

- ◯ 18-20
- ◯ 21-25
- ◯ 26-30
- ◯ 36 and above

Q4. Education Level

- ◯ Undergraduate
- ◯ Master
- ◯ PhD
- ◯ Other: _____

Q5. Mother tongue

Your answer

Section 2:

Q9. Blended Learning helped with my language development *

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Listening	◯	◯	◯	◯	◯
Speaking	◯	◯	◯	◯	◯
Reading	◯	◯	◯	◯	◯
Writing	◯	◯	◯	◯	◯
Grammar	◯	◯	◯	◯	◯
Vocabulary	◯	◯	◯	◯	◯
Pronunciation	◯	◯	◯	◯	◯

Q10. I think blended learning (the integration of technology into classroom teaching) is beneficial to my language learning because:

a. Its flexibility. It allows personalized learning. (e.g. I can choose the topic i am interested in, I can learn at any time anywhere).

- ◯ Yes
- ◯ Neutral
- ◯ No

If your answer is no, please explain why

Your answer

b. My interactions with the instructors and peers are increased.

- ◯ Yes
- ◯ Neutral
- ◯ No

If your answer is no, please explain why.

Your answer

c. I have more motivation and engagement in the learning process.

- ◯ Yes
- ◯ Neutral
- ◯ No

If your answer is no, please explain why.

Your answer

d. I have more opportunities to collaborate with peers. (e.g. group work, pair work)

- ◯ Yes
- ◯ Neutral
- ◯ No

If your answer is no, please explain why.

Your answer

11. What are the impacts of using blending learning in your learning process? *

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I become better at managing time	☐	☐	☐	☐	☐
I have better computer skills and online learning ability.	☐	☐	☐	☐	☐
I become more independent with my own learning.	☐	☐	☐	☐	☐
I become more motivated to learn English language.	☐	☐	☐	☐	☐
I become better at collaboration with others.	☐	☐	☐	☐	☐
I become better at interaction with instructor and classmates	☐	☐	☐	☐	☐

12. What are the challenges have you met in blended language learning environment?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Time	☐	☐	☐	☐	☐
Motivation	☐	☐	☐	☐	☐
Technical difficulties	☐	☐	☐	☐	☐
Learning how to use the system	☐	☐	☐	☐	☐
Collaboration with classmates.	☐	☐	☐	☐	☐
Online learning material	☐	☐	☐	☐	☐

Other challenges you or others might face:

Your answer

Please describe why you or others would have these challenges:

Your answer

Q13. Your suggestions for improvement of blended language learning:

a. In terms of technology

- [ ] I don't think there is anything that needs to be improved at this moment.
- [ ] Other: _____

In your opinion, what could institution do to improve in the aspect of technology? (e.g. solve the problem of slow connection)

Your answer

In your opinion, what could teachers do to improve in the aspect of technology? (e.g. be more familiar with the use of technological tools)

Your answer

b. In terms of the online learning contents

- ◯ I don't think there is anything that needs to be improved at this moment.
- ◯ Other: _____

In your opinion, what should be improved with regard to online learning contents?

Your answer

c. In terms of pedagogy

- ◯ I don't think there is anything that needs to be improved at this moment.
- ◯ Other: _____

In your opinion, what should be improved in terms of pedagogy (e.g. grammar teaching, the integration of technological tools in the classroom activities)

Your answer

Q14. In general, I am satisfied with learning English/French using blended learning (both face-to-face learning and online learning and I will take more blended learning courses in the future.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree