



Université de Montréal

**Perceived Academic Achievement and Social Integration in  
the Context of Social Software: A Comparative Study on  
Canadian and Chinese University Students**

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## Résumé

Aujourd'hui, les logiciels sociaux sont très populaires parmi les étudiants universitaires en Amérique du Nord (par exemple, Facebook et Twitter) et en Chine (par exemple, QQ, WeChat et Sina Weibo). Ces logiciels sont devenus facilement accessibles partout, en particulier grâce à des appareils mobiles. Il convient de noter que ces modèles d'utilisation de logiciels sociaux et de logiciels sociaux utilisés au Canada et en Chine sont différents les uns des autres.

Le but de cette étude est de comparer les similitudes et les différences dans les habitudes d'utilisation des logiciels sociaux entre les étudiants universitaires canadiens et chinois. De plus, comment leurs enseignants utilisent les logiciels sociaux pour promouvoir le succès scolaire de leurs élèves.

L'auteur a constaté que les groupes de cours et de class sur Facebook pouvaient promouvoir directement l'intégration scolaire des étudiants canadiens. En outre, les groupes de cours et de cours QQ pourraient jouer un rôle important dans l'intégration sociale des étudiants chinois, ce qui favorise indirectement leur réussite scolaire.

Sur la base d'une analyse des données de recherche qualitative, l'auteur espère faire quelques suggestions utiles pour les éducateurs lorsqu'ils conçoivent des curriculums. Au cours des dernières années, de nombreuses universités au Canada ont attiré un nombre croissant d'étudiants internationaux chinois. Les résultats de l'étude peuvent avoir un impact positif sur les stratégies chinoises de recrutement d'étudiants internationaux.

**Mots-clés:** logiciels sociaux, groupes de Facebook, groupes de QQ, étudiants canadiens, étudiants chinois, réussite scolaire, apprentissage collaboratif, auto-efficacité, alphabétisation de l'information, recherche qualitative.

## **Abstract**

Today, social software is very popular among university students in North America (e.g., Facebook and Twitter) and China (e.g., QQ, WeChat and Sina Weibo). This type of software has become easily accessible everywhere, especially through mobile devices. It is noteworthy that specific social software and social software uses in Canada and China are quite different.

The purpose of this study is to compare the similarities and differences in social software uses between Canadian and Chinese university students. In addition, this study investigates how teachers use social software to promote the academic integration of the students and to develop information literacy competencies.

This study was based on qualitative research. The research data for this study were collected using semi-structured interviews with teachers and students and through observation of social software groups. Six students and four teachers were interviewed, 85 members of social software class groups were observed, and 188 members of social software course groups were observed.

The author found that Facebook class and course groups could directly promote the academic integration of Canadian students. In addition, QQ class and course groups could play an important role in the social integration of Chinese students, which indirectly promotes their academic success.

Based on an analysis of qualitative research data, the author hopes to make some useful suggestions for educators when they design curriculums. In recent years, many universities in Canada have been attracting an increasing number of Chinese international students. The study results can provide a positive impact for Chinese international student recruitment strategies.

**Keywords:** social software, Facebook groups, QQ groups, Canadian students, Chinese students, academic success, interactions in groups, collaborative learning, self-efficacy, information literacy, qualitative research.



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## **Dedication**

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# 1 Introduction

New developments in the technological world have made social software an important way for individuals and groups to communicate with each other. With the birth of Web 2.0, social software has gained popularity over the last decade (Sponcil & Gitimu, 2013) and become a very important social phenomenon.

In North America, popular social software such as Facebook is well-known and has hundreds of millions of users all over the world (Statista, 2017). In China, Tencent's communications and information sharing services, including QQ and WeChat, are very popular. Its social software has become Chinese users' most used social tool (China Internet Network Information Center, 2017).

Social software is a category of personal communication social tools. It is changing the interactions that take place between educators and students outside the classroom as well as the interactions between students, and it definitely offers interesting educational opportunities (Choi, 2013; Lamb, 2016; Sandry, 2014; Wang, Woo, Quek, Yang, & Liu, 2012). Social software has now caught the attention of educators and scholars (Allen, 2012; Aydin, 2012; Dyson, Vickers, Turtle, Cowan, & Tassone, 2014; Kent, 2013; McRae, 2014). Indeed, some scholars have started to analyze and reflect on students' educational uses of social software, in both North America and China. Communication between educators and students is crucial in the educational process and important both for social and academic integration. Social software facilitates and enhances these interactions.

In North America, Facebook has become widespread in the last ten years and many students are already using it when they arrive at university. It is hard to avoid the conclusion that Facebook is as natural to education as computers, cell phones and everything else that students bring with them (Allen, 2012). On the positive side, Facebook can be used as a virtual environment for discussion and sharing knowledge (Kurtz, 2014), and it offers interesting pedagogical avenues.

In China, QQ has also become a very popular software among young Chinese Internet users over the last ten years (Chu & Choi, 2010). Students search and use information resources directly for their own use by communicating, screening and processing. At the same time, they make use of resource sharing through QQ groups (Liu & Cheng, 2012).

Based on a review of relevant literature and an analysis of qualitative research data, the research findings will provide some useful suggestions and references for Canadian university teachers and curriculum designers. They will learn how to effectively use social software to provide a better experience for Chinese international students. These results may also provide suggestions that have a positive impact on Chinese international student recruitment strategies, so that universities in Canada can continue to attract ever-larger numbers of Chinese international students. Some of the actions relevant to the Chinese international students may also be relevant for other international students.

The purposes of this study are: 1) to gain a better understanding of how students use social software to support the social and academic integration process of students in Canada and China; 2) to understand how students and their teachers use social software for interaction and collaborative learning activity in student learning processes in Canada and China; 3) to analyze the means deployed by students to evaluate the information gathered on social software and how their teachers support them in this process in Canada and China.

The author has put this study in the theoretical framework of the model of student retention (Tinto), collaborative learning and information literacy competencies. The author interviewed and observed selected Canadian and Chinese university students and teachers, relying on qualitative case study research.

The contribution of this thesis lies in its scientific investigation of online social software as an individual social tool, an interactive platform for learning activity groups and an educational technology, comparing social software uses in Canada and China. Academia stands to benefit considerably by using social software groups based on the students' preferred method of communication to enhance student collaboration.

## **2 Problem**

### **2.1 Definition of terms**

The main terms and concepts related to social software and information literacy will now be presented. The definitions below are organized into two categories. The first category pertains to social software. With the advent of social software, information literacy skills evolved. Also included in this category is another similar technical terminology: the age of social media requires “meta-literacy,” a critical awareness of what students do with information. Thus, the second category contains terms related to media literacy.

#### **2.1.1 Definition of Web 2.0**

The advent of Web 2.0 really gave birth to the social web and social software. Thus, the most important area of social software is Web 2.0 applications. Web 2.0 technologies include information sharing and collaboration between users. In the IT field, Web 2.0 refers to the Internet mode relative to Web 1.0; it is a new class of Internet applications (Cormode & Balachander Krishnamurthy, 2008; O'reilly, 2009).

The main principle of Web 2.0 is that everyone is not only a consumer of content, but also potentially a contributor of content (O'Reilly, 2007). Also, Web2.0 content is more diverse in format: label tag, multimedia, online collaboration on written texts (e.g., wikis). The Web 2.0 principles defined by O'Reilly are generic, and they broadly define the characteristics of a new approach to developing IT applications. They do not prescribe the specific forms of these applications.

The different incarnations of social software correspond to these Web 2.0 principles, but that does not mean that social software is the only type of technology that manifests these principles. The overarching themes in the Web 2.0 paradigm, such as open architecture, scalability, ease of use (with particular implications for adaptability), user-centered approach, etc., spawned a whole array of new “2.0” terminology, based on similar philosophical principles (Feuer, 2009).

## 2.1.2 Definition of social software

There is a variety of definitions of social software. Besides communication channels such as email, Instant Messaging (e.g., Skype, Google Talk, QQ, and WeChat), social networking sites (e.g., Facebook, Twitter, Qzone and Sina Weibo), social software such as Web 2.0 Application, mobile social Apps, social networking software and social networking services are also called social media (Zhang & Xue, 2015).

Christopher (2004) proposes that social software seems to be acceptable to most people:

Social software or Web 2.0 applications, also known as social apps, include communication tools and interactive tools often based on the Internet. Communication tools typically handle the capturing, storing and presentation of communication, usually in writing but increasingly in the form of including audio and video as well. Interactive tools handle mediated interactions between a pair or two group of users. They focus on establishing and maintaining a connection among users, facilitating the mechanics of conversation and talk. Although we do not have a generally accepted definition, by social software we mean software that makes collaborative behaviour, the organization and molding of communities, self-expression, social interaction and feedback possible for individuals. (para. 1)

Many researchers have provided different definitions for the term “social software.” Shirky (2005) defines “social software” as “software that supports group interaction.” Evans, Haughey and Murphy (2008) note that social software refers to supports to communication “ranging from synchronous to asynchronous; from one-to-one to many-to-many, from text to full multimedia, from communications in a dedicated home theatre to that supporting a mobile phone while in transit ” (p. 173).

Boyd and Ellison (2007) offer a widely accepted definition of social networking site that highlights the importance of communicative functions in three interrelated areas:

(1) Construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their



list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site. (p. 211)

Wikipedia (2015) says that social software's core idea is actually an aggregation produced for communication that can reflect and promote the cooperation between people and the creation of online communities. Poellhuber, Anderson and Roy (2011) suggest that social software is "a set of network tools designed specifically to support sharing, collaborating, and socializing, resulting in development of multiple forms of social capital" (p. 2).

Dron (2007a) says that "it also has the capacity for control and structure to emerge from user interaction rather than solely by design. In a social networking environment, such as elgg, individual users can make many groups and form networks of association by 'friending.' Students told to engage in discussion on a forum visible to their teacher may set up a backchannel (on Instant Messaging or mobile phone) to help them manage their 'viewed' discussion." Dron (2007a) also says that social software is where "control and structure can arise through the process of communication, not as a result of design, but as an emergent feature of group interaction" (p. 233).

Social software can also provide a social system for learning. Educational social software (ESS) was defined in 2005 as "networked tools that support and encourage individuals to learn together while retaining individual control over their time, space, presence, activity, identity and relationship" (Anderson, 2008, p. 227).

### **2.1.3 Adopted definition of social software**

Many researchers have proposed different definitions of social software. The definition of social software is developing and being evaluated constantly. The definition retained is that social software is a category of user-centered network tools designed specifically to support communicating, sharing, collaborating and socializing, promoting the creation of online communities in which individuals develop multiple forms of social capital.

### **2.1.4 Types of social software**

There are many types of social software, and the definition provided by Wikipedia is that these applications include communication tools and interactive tools. "They focus on

establishing and maintaining a connection among users, facilitating the mechanics of conversation and talk” (Wikipedia, 2015, para. 1). Social software generally includes Instant Messaging (Skype, QQ and WeChat), social networking sites (Facebook and QZone), wikis (Wikipedia, Yahoo! Answers and Baidu-Baike), blogs (Blogger, Sina Weibo), collaborative real-time editors (Google Docs), social online storage (Google Drive and Dropbox), social guides (Wikitravel) and online social viewing (YouTube, Tudou and Youku).

### **2.1.5 Definition of media literacy**

As users can now create information in the Web 2.0 world, they have to become media literate. Media literacy has a long history. The concept appeared in the 1940s, but it has been highlighted by scholars in the last two decades (Lee & So, 2014). Aufderheide (1993) defines media literacy as follows:

It is the ability of a citizen to access, analyze, and produce information for specific outcomes. This definition could be expressed in many different ways. To some, analyzing was better expressed as decoding or evaluating, and producing was better explained as encoding or proving alternative expression. Information had several meanings, from bare symbols to a continuum of media that extends from print to video and the new digital world of computerized multi-media. (p. 6)

The website of the United Nations Educational, Scientific, and Cultural Organization (Carlsson, 2015) expands the definition of literacy in the 21st Century considerably, as media literacy “provides a framework to access, analyze, evaluate, create and participate using messages in a variety of forms” (para 2). After that, the definition is refined further: information literacy characteristics focus on accessing, analyzing, evaluating information, and creating and participating, which together “builds an understanding of the role of media in society, as well as essential skills of inquiry and self-expression necessary for citizens of a democracy” (para 2).

Mackey and Dean (2011) argue that in information technology society, media literacy is a frame that “requires individuals to know how to find and evaluate information or messages and to contribute, using the same tools, in a democratic way” (p. 6). Their emphasis on participation is similar to the standard definition of information literacy which prepares individuals to use information in such a way that others can learn from them.

In Canada, media education is defined as the process through which individuals become media literate and able to critically understand the nature, techniques and impacts of media messages and productions (National Association for Media Literacy Education, 2010, para 1).

### **2.1.5.1 Adopted definition of media literacy**

The Aspen Media Literacy Leadership Institute (Centre for Media literacy, 1992, para 1) defines media literacy as “the ability to access, analyze, evaluate, and create media.” Media literacy is also considered media education and an expanded conceptualization of information literacy. Many researchers propose that media education is employed to help students gain the ability to use and create media products. The following definition, I think, is more comprehensive and clearer concerning the term of media literacy. De Abreu and Mihailidis (2013) argue that it is a new set of educational skills in the multimedia age. It allows people to apply critical thinking to media and to create and participate with messages in a variety of forms; it is used to develop judgment and understanding of information. “Media literacy builds an understanding of the role of media in society as well as essential skills of inquiry and self-expression necessary for citizens of a democracy” (Thoman & Jolls, 2008, p. 21).

## **2.2 Who are the users of social software**

Young adults (aged from 18 to 29) are the most likely group to use social media – almost 90% do (Perrin, 2015). In Quebec, Canada, new media applications and activities are being constantly added to the existing media diet – Facebook and YouTube being widely used vehicles for young users (CEFRIQ, 2014).

The student population is high in China, with 25.1% of the Chinese population being students. Internet users aged 20 to 29 account for 30.4% of Internet use. They were the largest proportion of total Internet users at the end of July 2016 (China Internet Network Information Center, 2016, pp. 14–15).

## **2.3 User stats on social software uses**

With the development of Web 2.0, social software has become an essential tool for communication worldwide (Klamma et al., 2007). The most popular social software programs

are Facebook, WhatsApp in North America, and QQ, WeChat and Qzone in China. The statistical data (Statista, 2017) show the most widely used social software in the world:

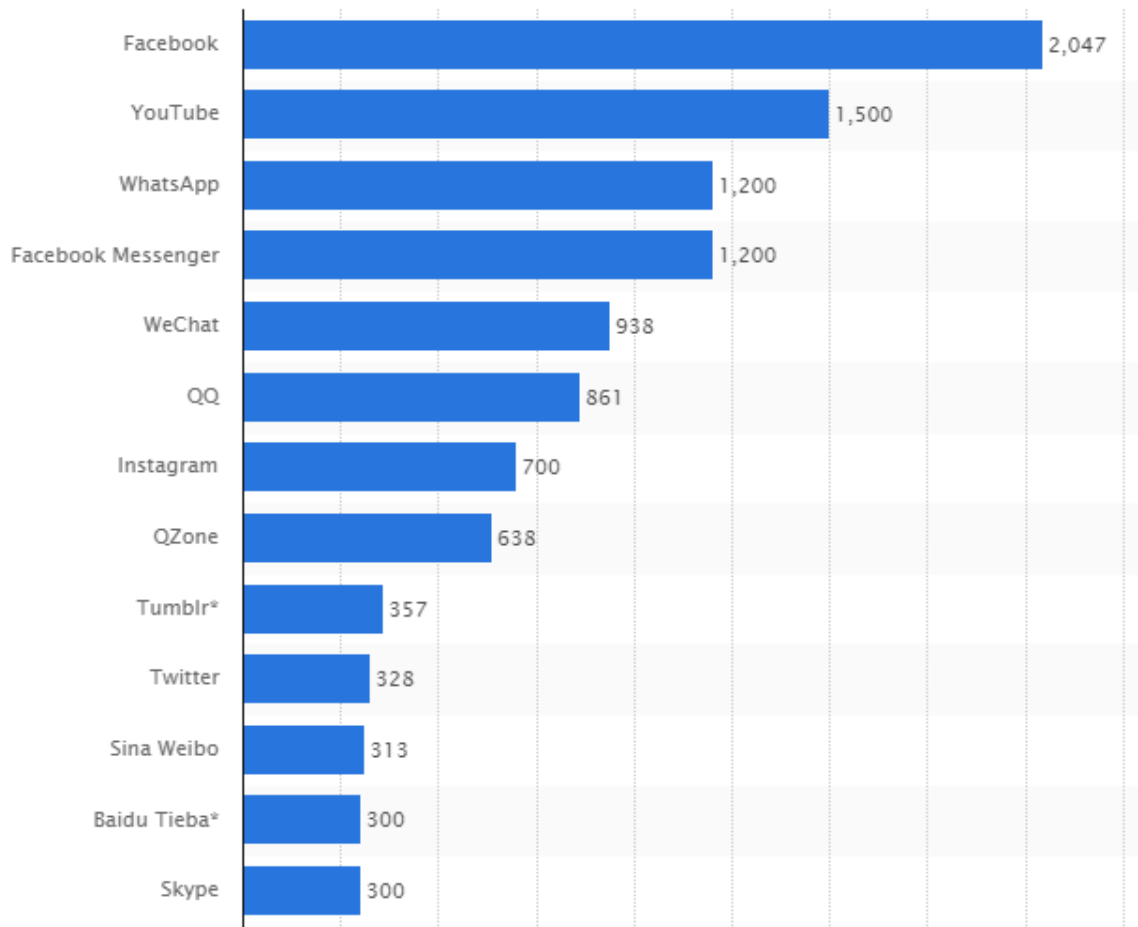


Figure 1. Social software worldwide as of August 2017, ranked by the number of active users (in millions).

Tencent’s QQ has become the most important social tool used by the Chinese. QQ’s active monthly account number reached 877 million, with an increase of 2% in 2016 over the same period of the year 2015 (Tencent Holdings Limited, 2015). When QQ first appeared, it was not just full of innovative features for mobile phone applications. According to a report by Tencent Holdings Limited (2016), QQ embodies China’s electronic revolution. Used on more than 90% of mobile phones, it has become an integral part of the Chinese people’s everyday life (Tencent Holdings Limited, 2016).

Social software is in constant transition, and the data cited above is being continuously updated. Based on the data at hand, however, the four social software vehicles of Facebook,

Twitter, QQ and Sina Weibo were selected as the focus of this study, as they are the most popular online social software applications among university students in North America and China.

## **2.4 What drives social software use**

### **2.4.1 Easy access**

Ease of access is the first factor that drives social software adoption. Social software can be accessed over the web on laptops, tablets and mobile phones, which have become increasingly popular. For example, mobile devices are a key point of access for news by both Twitter and Facebook consumers. 85% of Twitter users get their news on mobile devices most of the time. Facebook consumers use mobile devices for news 64% of the time (Mitchell & Guskin, 2013).

### **2.4.2 Group and collaboration applications**

Although social software was not originally created for educational purposes, it can be used as a virtual environment to collaborate and share information, resources, discussions and knowledge with a small or very large group or “set” (Dron & Anderson, 2007). For example, some teachers (Lamb, 2016; Sandry, 2014; Wang et al., 2012) use their Facebook group as a space to promote social learning. In these groups, the participation and positive contributions of students and the help they receive from their peers and coaches can support the learning process (Kurtz, 2014). In China, Liu and Cheng (2012) observed that students construct collaborative learning platforms using the QQ group for their learning.

### **2.4.3 New information search model**

The concept of information literacy has become increasingly important in higher education. The ever-accelerating pace in the creation of human knowledge and the need to cope with information overload have underscored the importance of preparing students to meet these challenges (Feuer, 2009).

Social software offers new and different ways to search for information. People often use general search engines (such as Google or Baidu) to find information on the Internet. Now, social software has become a new type of channel that replaces the conventional way of seeking

information (De Choudhury, Morris, & White , 2014). Holmes, Preston, Shaw and Buchanan (2013) reported that they used Twitter to search two keywords, “education” and “technology”; they received 20 consecutive tweets and collected 600 tweets during a period of one week.

#### **2.4.4 New forms of communication replacing Emails**

Social software allows new forms of communication and collaboration to take place between students and teachers and allows for the inclusion of community members. Social software can be used in different aspects related to academic engagement (Astin, 1984). Some researchers indicate that in North America, teachers and students seems to be replacing email with social software (Judd, 2010). This use of social software in educational contexts is noteworthy, since email, which is considered the more “traditional” form of communication, is now in decline in the academic landscape.

#### **2.4.5 Impact on social life**

Social software seems to respond to some of the students’ social needs. People use Facebook to make “friends,” the most common of all relationships.

According to a report by Wong (2012):

Hong Kong students preferred updating their Facebook page rather than interacting with friends. They were consistent in presenting themselves according to their desired image. The students made themselves appear to be weak in order to receive the greatest support on Facebook. (p. 184)

#### **2.4.6 Impact on academic life**

Social software allows learners to choose whether to control their learning or delegate that control to the group (Dron, 2007b). It promotes interaction among students and thereby raises the level of student creativity (user-generated content). It thus utilizes new tracks of pedagogy.

Social software can have negative effects on students, however. In Kirschner and Karpinski’s (2010) study on Facebook use, the authors argue that Facebook users spend less time in learning every week, because they spend more time on Facebook. This leads to lower grades.

## 2.4.7 Social support among students

Social software offers peer support opportunities, which may be important both for academic and social integration. Students are able to maintain their relationships by constantly being in touch with others on Facebook for social support, friendship and intimacy (Cheung, Chiu, & Lee, 2011). This means that social software opens the door for students to access more social support than would otherwise be the case. This might benefit their social development (Ahn, 2011b).

Frison and Eggermont (2015) maintain that social support has a positive impact on students' well-being. For example, a student who is seeking emotional support after experiencing stress and who receives empathy and acknowledgement from his peers through Facebook is an example of an optimal match between the support seeker and support providers on Facebook. On the other hand, social software is not always even-handed with support. Cyberbullying is a concern and Ndasauka and his research team (2016) found that students' excessive use of Twitter causes a lack of social interaction, and consequently, loneliness.

## 2.5 Similar social software platforms

Chinese social software platforms differ in various ways from North American platforms. In this section, the most popular social software in North America will be compared with the ones in China. This comparison pertains to several areas, one being the issue of privacy.



Figure 2. Comparison of social software logos.

As shown in Figure 2 above, QQ (IM) and Qzone (Blog) will be compared to Facebook because they share the same type of username and password and are both considered to be combined platforms or complete social networking sites. As an extended version of QQ, WeChat also falls into this comparison group. Twitter and Sina Weibo will also be compared, both being microblogging platforms.

### **2.5.1 Facebook vs. QQ**

In much of the western world, particularly the United States and Canada, Facebook is the most popular social network (Statista, 2016).

In China, QQ is the most popular one. It is defined as an instant messaging tool, but in fact, QQ combines social networking sites and instant messaging features. Its Qzone interface is very similar to that of Facebook. QQ has more than 50 different features, several of which are forms of communication: groups, discussion groups, announcements, email, file sharing space, chat room, social networking site (Qzone), microblogging, voice chat, video chat, group chat, bulletin, group video, forums, ballot boxes, screening room, daily attendance, photo album, address book and memos, etc.



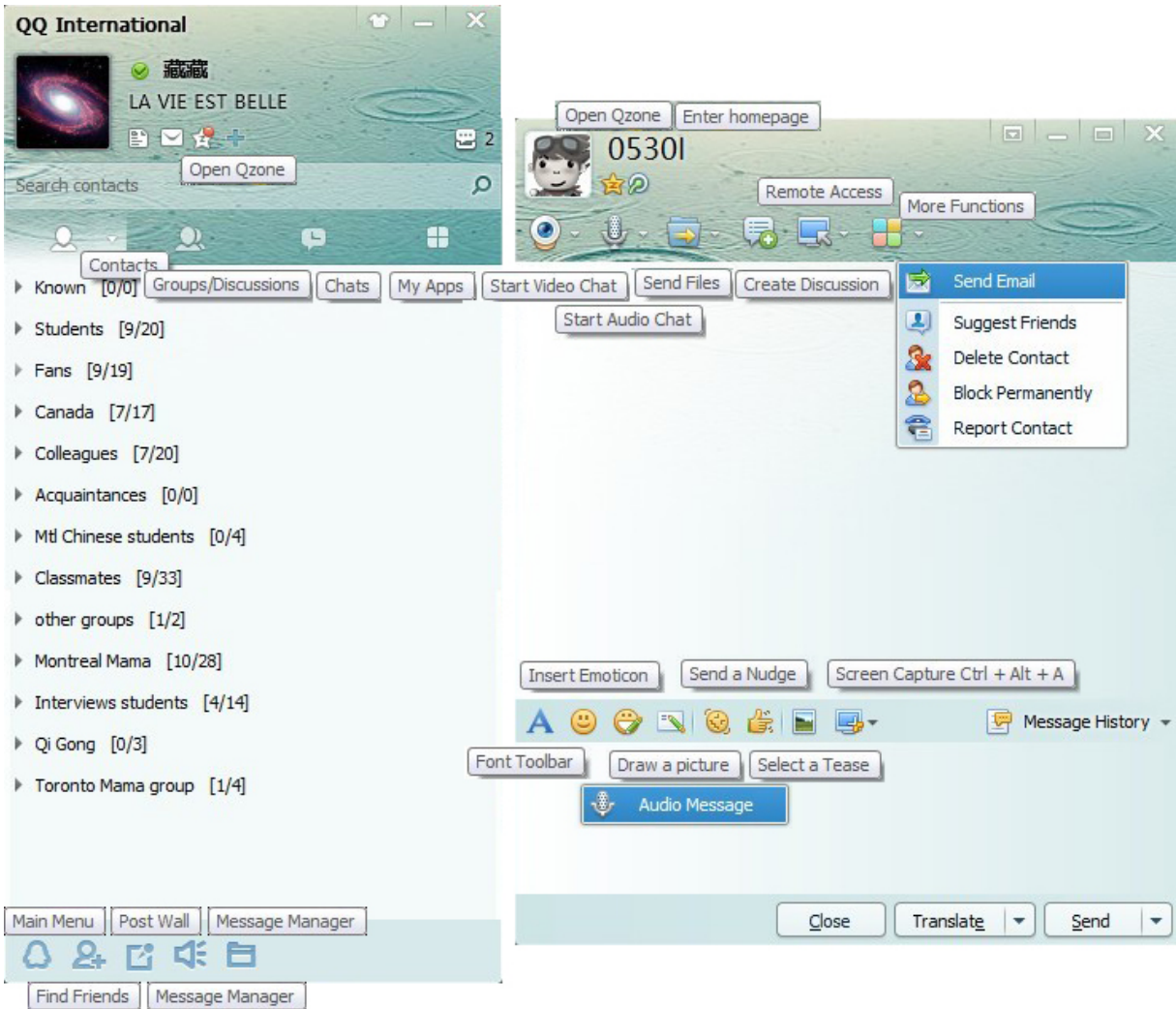


Figure 3. Screenshot of QQ’s main menu and user conversation window.

As shown in Figure 3 above, QQ basically works the same as any other chat programs, such as Facebook messenger and Skype. The QQ main interface includes a contact panel window and message windows. The QQ contact panel lists all the contacts, groups and recent contacts of the user under different categories. This is the main chat panel for communicating with other contacts, which always opens by default each time a user signs in to QQ. Users can easily communicate with friends on the contact list.

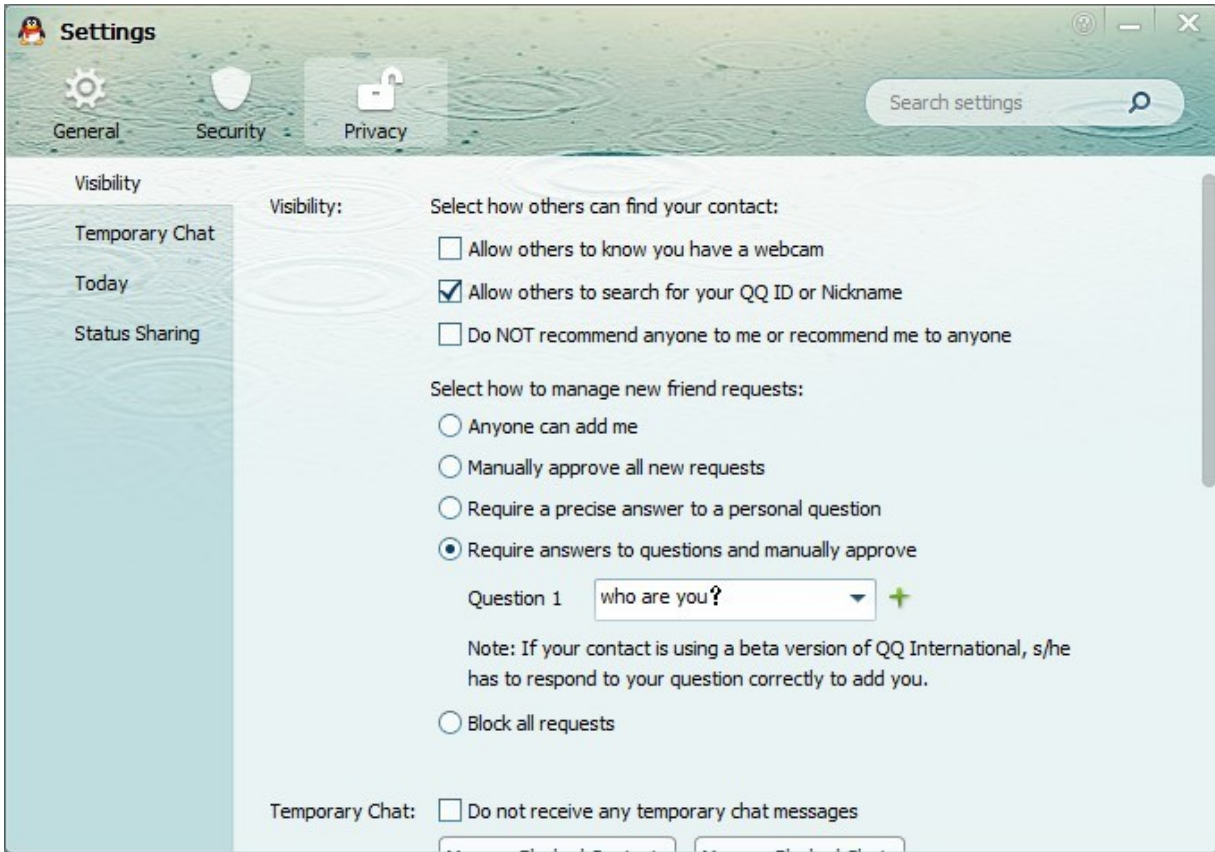


Figure 4. Screenshot of the QQ privacy settings.

The profile privacy settings on QQ allow the user to choose who can view the details in the user's profile. There are 3 QQ Privacy Settings to choose from (Tencent Holdings Limited, 2014):

- **Open to public.** This setting makes all the user's details available to be viewed by anyone, including those people using the advanced search tool.
- **Friends only.** This setting allows only those in the user's contact list to view details such as the user's telephone, mobile number and email address.
- **Private.** This setting hides the user's telephone, mobile number and email address details from all contacts.

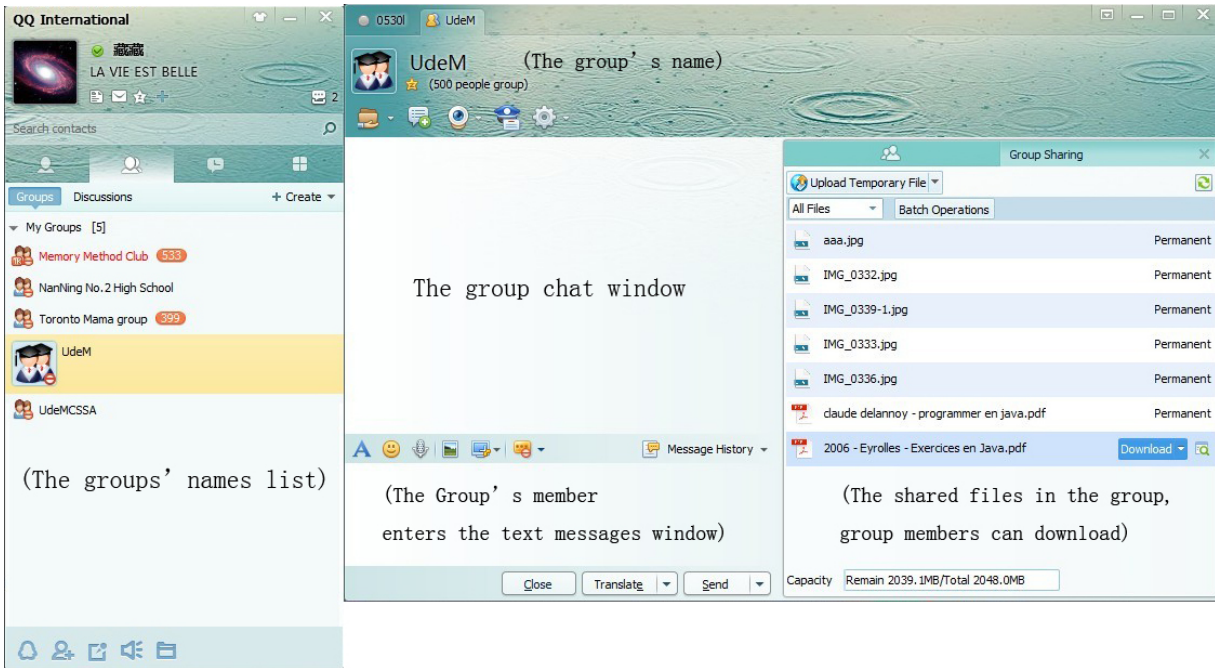


Figure 5. Screenshot of the main menu and group members' conversation window in QQ.

In a QQ group, members can post a text message or upload a voice message to the whole group or share files or pictures with other members. Likewise, group members can send texts while maintaining a page that allows members to share photos, videos, links and other content.

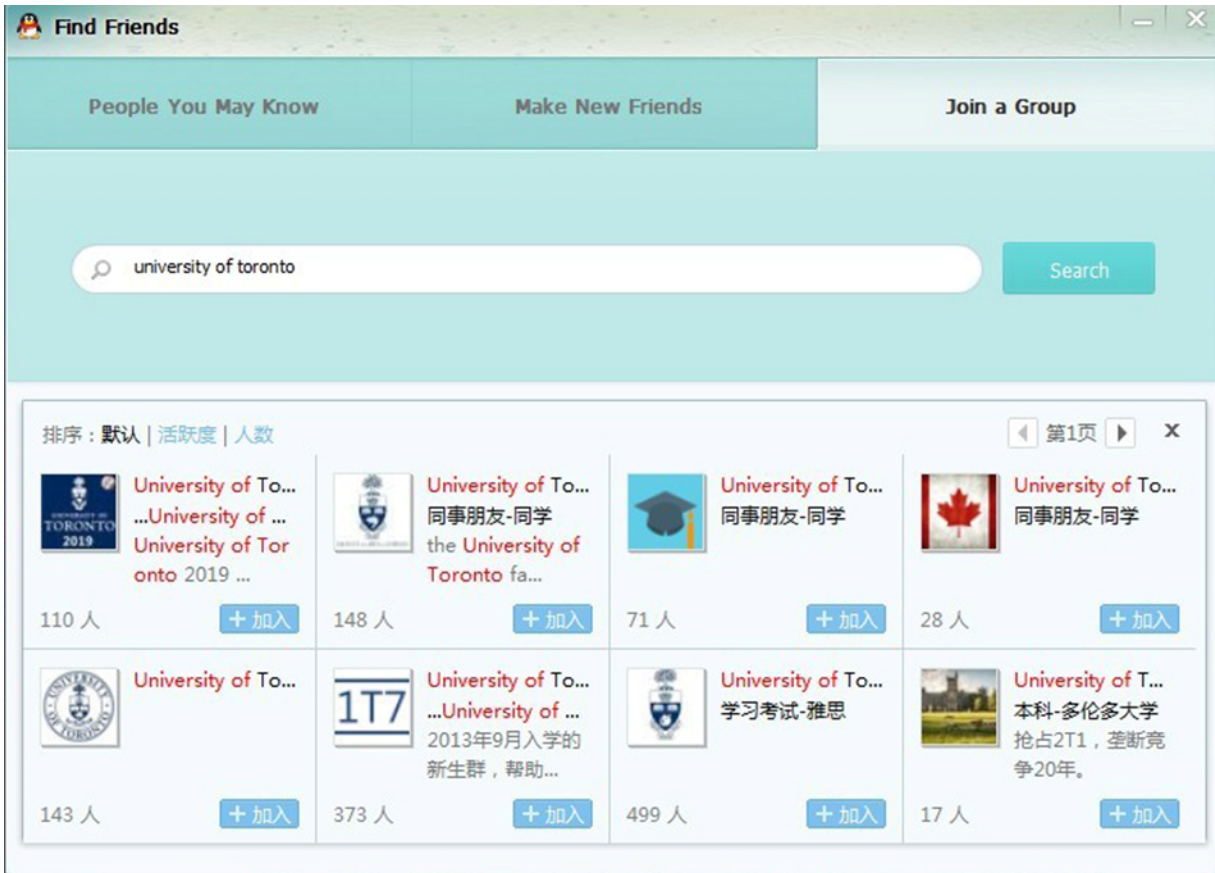


Figure 6. Screenshot of searching for groups on QQ.

To find members or groups, QQ has a keyword search function that helps users to find groups with the same interests. QQ's official webpage shows that every QQ International group has a unique group number. Users can use different methods to find groups and join them. One of the main features of QQ International is its vast number of groups, in which up to one thousand people can join a chat room and converse together. Groups can either be public or private, and there are literally millions of them ready to be joined. It is an easy way to find new friends and people who share the same interests. If a user enters the keyword "University of Toronto" in the search window, the resulting list shows all the groups associated with the University of Toronto across the world.

There are several ways to find QQ groups to join:

- Search for groups by group ID number or the name on the QQ search button
- Click the groups' sidebar button to list many popular groups by topics of interest
- Visit <http://www.imqq.com/> to find a regularly updated list of the most popular groups

Similarly, when the user enters “Toronto” and university” in the Facebook search window, all groups associated with the keywords are shown, as follows:

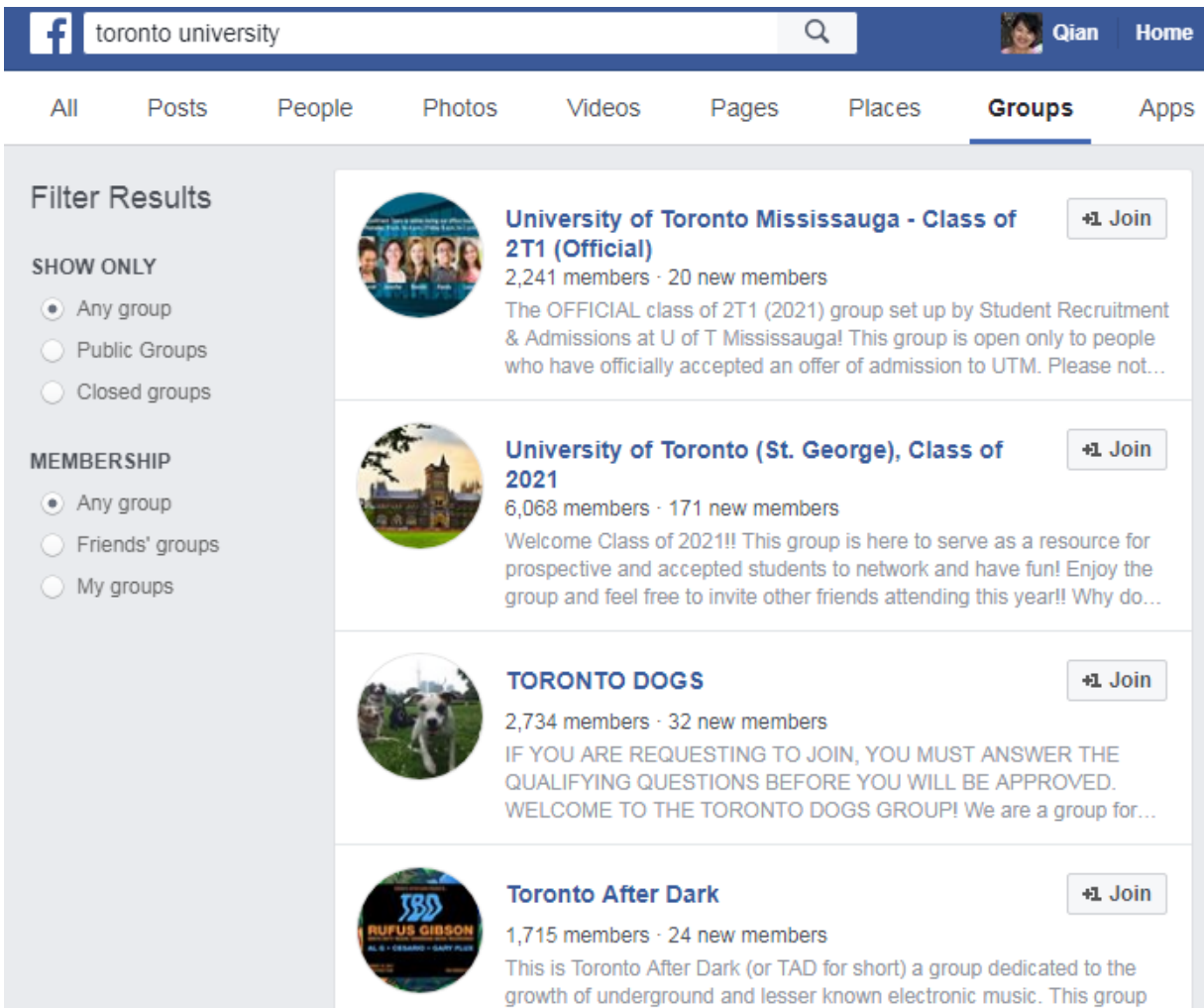


Figure 7. Screenshot of searching for groups on Facebook.

Qzone is a subsidiary of QQ that users can access using their QQ accounts. Its interface is very similar to Facebook's. Qzone is the largest social networking site in China. It mainly attracts youth, from teens through 25. Many of them share personal diaries in a blog-like format, write blogs, keep diaries, send photos, listen to music and watch videos on Qzone (Crampton, 2011).



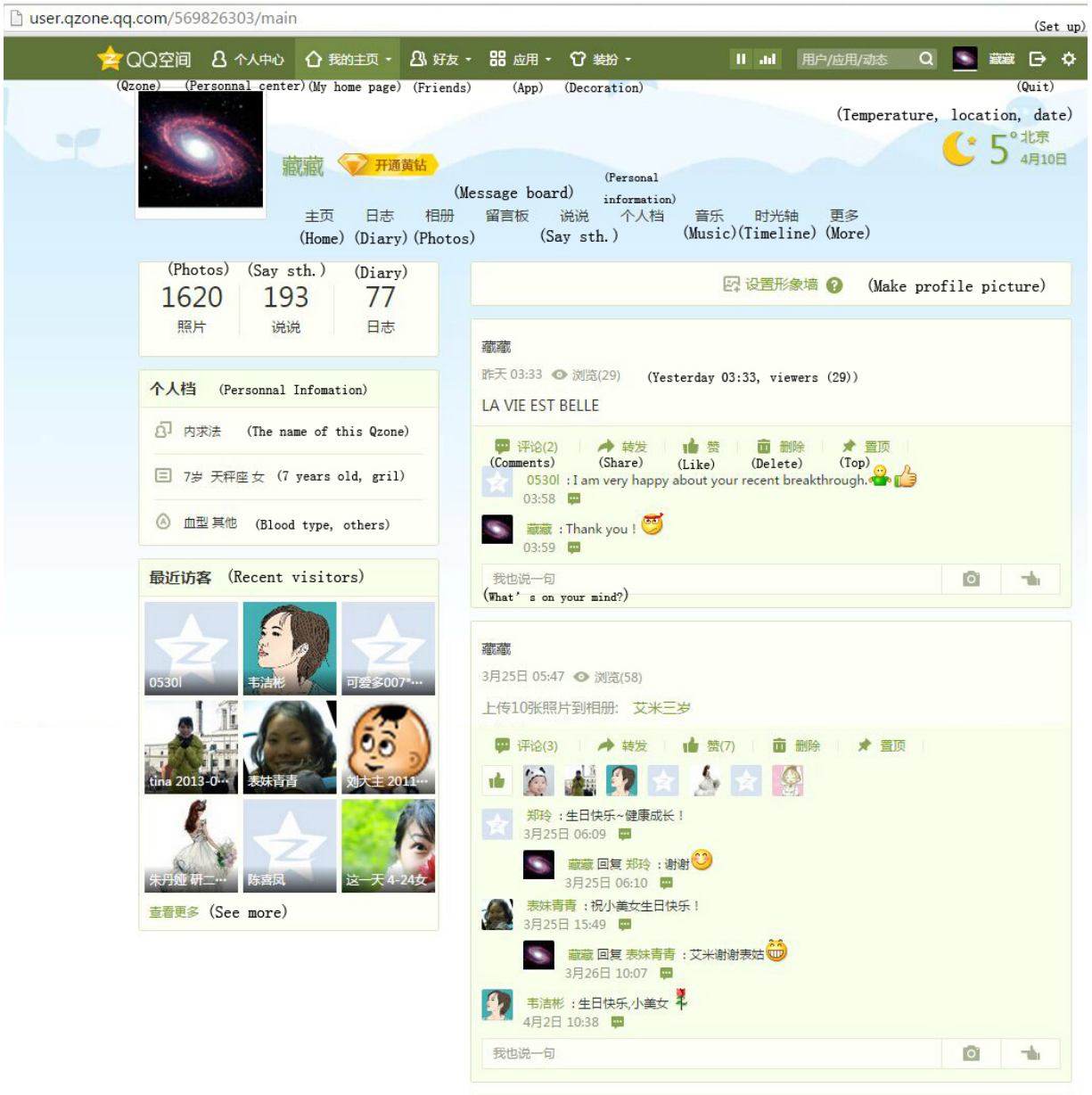


Figure 8. Screenshot of the home page of Qzone (QQ’s social networking site page).

### 2.5.2 Twitter vs. Sina Weibo

Some of the dissimilarities between China and North America’s social software seem to be rooted in cultural and language differences.

Twitter users are global users whereas Sina Weibo users are domestic. Sina Weibo’s visitors are mostly from China, with Chinese users accounting for 93.7% of its total traffic. More than 70% of Twitter’s traffic comes from outside the United States (Falcon, 2011). The

following differences between Twitter and Sina Weibo have been highlighted (Falcon, 2011; Selvarj, 2012):

- (1) Twitter respects the principle of “simple,” Sina Weibo respects the principle of “rich.”
- (2) Sina Weibo is a “micro-forum” which encourages discussion and forwarding of information; Twitter does not encourage discussion but focuses on news and information itself.
- (3) Twitter has a successful advertising model. Sina Weibo has not found a profitable model.

### **2.5.3 Privacy issues on social software**

With the development of social software and mobile communications technologies, privacy has become a highly controversial issue in both China and North America. Academic and popular sites are littered with examples of unwise revelation of personal information. There is a pervasive monitoring of information on these social software sites, which may be much more public than users think. In today’s world, privacy issues cannot be limited to control of one’s information. Now the concept of privacy comes from a wide range of personal, social, cultural and political influences (Yuan, Feng & Danowski, 2013).

#### **2.5.3.1 Privacy on Facebook and Twitter**

A Facebook group has three security levels for privacy which users can choose. These are “public,” “closed,” and “confidential.” Public status means that group members’ names and content are public. Closed means that members’ names are public but the content is confidential. Confidential means that all member names and chat content are confidential. In addition, Facebook allows users to designate “friends.” Users can control how much information to post and who can view this information by editing their privacy settings (Pempek, Yermolayeva & Calvert, 2009).

Facebook’s configuration of default privacy settings is geared toward inciting users to make information public, thus tending to invade user’s privacy. It often incites users to share data and even friends’ data if the user wants to use a particular app. Until now, Twitter has been far less intrusive. It does not force users to share their data (Wolfe, 2017, August 10). While Facebook uses the data it collects to target a user with ads that appear on the user’s site (which

others can see), Twitter merely tells others what a user tweets or shows such information in the user's public profile settings (Wolfe, 2017, August 10).

### **2.5.3.2 Privacy on QQ and Sina Weibo**

The concept of privacy has become deeply ingrained in the Chinese social networking software users. They realize the importance of self-protection on social software (Yuan, Feng, & Danowski, 2013).

QQ groups' privacy has only one level of security: "confidential." In this setting, only group members or selected members can see the content of a chat. Sina Weibo serves as the technological mean of communication in the Chinese society; it provides texts that constitute public and private discourses on privacy. Yuan and his colleagues (2013) argue from the Sina Weibo posts that there are some political discourses fermenting via the trope of privacy through Sina Weibo.

According to the Global Times (2016), US customs, in the Los Angeles Airport, found a WeChat message in an international Chinese student's mobile phone that said "I don't really want to go to school. I just need a temporary [student] identity." The student was not permitted to enter the US. Furthermore, two other international Chinese students who were trying to enter Canada were deported for having child pornography in their WeChat records in February 2016. Questions were raised as to whether the officials violated the students' privacy by going through their phones. However, the US Department of Homeland Security said that travellers crossing the nation's borders may have their electronics seized and the contents of their devices examined, according to a 2011 ruling.

### **2.5.3.3 Content censorship in China**

Censorship is an important issue in Chinese social software platforms. The Chinese government operates the most advanced national Internet filtering system in the world. It is often called the Great Firewall as it consists of a mix of strategies. The system can filter at the ISP (Internet service provider) level, blocking banned Western websites (including YouTube, Facebook, Twitter, Blogger, Google and The Guardian) and can block websites whose URLs



contain an ever-growing list of banned keywords related to politically sensitive topics (Talbot, 2010).

Chinese citizens can post materials and add their own voices online, but if the content posted relates to sensitive political subjects, the website or the user's social software account will be blocked. The definitions of what are sensitive political subjects are often very vague.

According to Chinese laws, content censorship is a fundamental requirement in all Chinese language sites with servers that operate in China. QQ, WeChat and Sina Weibo ban and filter abusive content not only by language detection software, but also through a group of editors. In contrast, Twitter operates without censorship in most countries except those such as China where the laws require social software to perform censorship (Chen, Zhang, Lin, & Lv, 2011).

#### **2.5.3.4 Impact of censorship on educational uses of social software**

The censorship in China affects education in many ways. China's public universities are a branch of the government; the presidents of China's top 70 universities are appointed by the Ministry of Education. This has led to the nomination of many university presidents who believe in the "Maoist idea that education should be oriented toward nation-building, to prioritize beliefs over academic freedom" (Sheets, 2011, para. 8). The Chinese government's censorship has essentially isolated the country from a rapid exchange of ideas from around the world. In 2005, however, Chinese educators recognized that blogs allowed both them and their students to freely exchange ideas among themselves and with a wider audience. Journalism students in universities are the primary users of this type of software and they use it to circumvent China's internet filtering system, not always without consequences. As technology continues to evolve and the internet continues to expand, new ways to circumvent censorship will doubtless continue to grow.

The censorship imposed by the Chinese government has led to a lack of innovation in China. There is no free flow of information in the society and no intellectual property rights. This has led to an educational and cultural ethos that discourages people from thinking creatively and speaking up for themselves. If the Chinese government abandons or softens censorship

policies, students may become more open-minded, which would lead to more open exchanges of ideas in the classroom (Talbot, 2010).

#### **2.5.4 Network security and history of use**

Since the birth of QQ, Chinese QQ users have frequently read news about QQ users being hacked. The Shenzhen Evening News reported (Zhao, 2014) that the crooks have created a complete QQ fraud industry, with tens of thousands of people involved in the chain. The QQ users often heard the news and their friends' experiences about QQ fraud, which may explain why Chinese students used anonymous as their QQ account name. In contrast, the Canadian student interviewees were more likely to believe in the social software environment, and they reflected that most of their classmates used real names on Facebook.

From the above analysis, I found that in terms of the usage time, the numbers of friends, the groups joined, and the usage history, the Chinese students used social software more frequently than Canadian students. This is because Tencent (the company that created QQ and WeChat) updates the QQ technology every year, and it dominates in China; so, almost all QQ users have had a longer usage history than Facebook users. The birth and popularity of QQ happened earlier than Facebook in China, so two Chinese students had nine years of usage history. The Canadian students have used Facebook for about four or six years. For them it was a move from MSN or other software to Facebook.

## **2.6 Utility of social software for communication in higher education**

Social software is very useful for communication between teachers and students and among students. One paper suggests that social networking sites help college students achieve a higher contact ratio using a cell phone or mobile device than they were able to as high school students. Students think Facebook is a very useful tool for obtaining social support (Manago, Taylor, & Greenfield, 2012). Another paper argues that "Twitter as a new channel for communication and collaboration has led educators to hope that they may enhance the student experience and provide a pedagogical tool within Higher Education" (Knight & Kaye, 2014, p. 1).

## **2.6.1 Research in North America on student use of social software**

The development of the IT industry in North America (United States and Canada) has been at the forefront of the news and media in recent years. Social software is very popular among North American college students. According to Statista (2016), North America was ranked first, with a penetration rate of 59% in all regions studied for social software use. A considerable amount of research focuses on how students use Facebook. I will summarize research findings in the following subsections.

### **2.6.1.1 How do students use Facebook?**

Facebook is mainly used by students for social purposes. Students can use Facebook to create and maintain their social networks on the Internet. It is like face-to-face communication, but it takes place online” (Manasijević, Živković, Arsić & Milošević, 2016). Students also use Facebook to access information and for daily entertainment such as playing games, writing comments, watching videos and keeping up with their social circles, etc. (Pimmer & Linxen, 2012).

In North America, Kurtz (2014) found that many people think that Facebook groups can promote the students’ social learning process. Its groups emphasize participation, active contribution of students and frequent interaction between peers and teachers. Hew (2011) claims that Facebook’s advocates are suggesting that Facebook can positively influence a college student’s life. For example, students can use Facebook to contact other students concerning course assignments and group projects. Teachers can contact their students and provide useful course links. Another study found that the interaction on Facebook groups resulted in a significantly higher level of student activity than in the Blackboard learning management system forum; students participated more actively in discussions on curriculum management and distribution using Facebook groups (Kent, 2013).

In academia, Facebook allows many students to create a social identity to network with colleagues, thus creating social capital. Facebook also allows students to obtain emotional and practical support from peers. The educational uses of Facebook mainly lie in private communications and public or private groups. These groups enable collaboration related to the exchange of documents and the organization and management of events (Allen, 2012).

University students and professors use Facebook to share many “resources of both entertaining and educational character, materials and multi-media clips as well as a great number of illustrations that can be of great help to the traditional way of learning” (Manasijević, Živković, Arsić & Milošević, 2016, p. 443). Moreover, on Facebook, both students and teachers have to define the boundaries between what a formal educational relationship is and what belongs to private relationships. Facebook groups can help to structure this.

### **2.6.1.2 Student use of Twitter**

Microblogging on Twitter allows users to read and post short messages with a maximum number of 140 characters (Ndasauka et al., 2016). Dhir, Buragga and Boreqqah. (2013) argue that Twitter offers interesting potential in relation to informal learning, classroom dynamics, social skills learning in various languages, social interaction and motivation, as well as for the academic and psychological development of students. Among the challenges identified, the author notes the dangers of addiction to Twitter, a distraction factor for students, time lost reading and writing irrelevant messages, and the free speech limited by the number of characters allowed in a tweet. Also, the public nature of Twitter does not take student privacy needs into account. Additionally, the technical limitations of this tool for educational purposes – e.g. character limits, limited operating history and difficulty of following the thread of a discussion – are all challenges.

Journell, Ayers and Beeson (2014) proposed that Twitter can be a smart instructional tool that links students with real-time information and connects them to authentic discussions beyond school walls. In their study, the students created Twitter accounts at the beginning of the semester and followed the Presidential campaign. Throughout the semester, the students would receive tweets from the candidates, often with links to news articles. They found that Twitter offered the students a quick way to stay abreast of the news about the campaign.

Knight and Kaye (2016) analyzed an online questionnaire designed for a subject group made up of 137 undergraduate students, 16 graduate students and 26 trainers from a UL university. It asked respondents about their use of Twitter for educational and general purposes. The results show that both students and instructors use Twitter to share information. They found significant differences between teachers and students in the use of Twitter for educational

purposes, with 65.4% of the teachers answering they use it compared to only 27.7% of the students. Furthermore, the students generally seem to use Twitter more for personal purposes, to follow their local communities, to interact as simple readers or simply to retweet. Regarding educational uses, it was found that undergraduate students ( $n = 137$ ) use Twitter to ask specific tweeter questions (13.9%), contact specific instructors (11.7 %) and make tweeter updates for the course after training (10.2%). Tweeter is defined as the person who uses the social networking service Twitter™ by the Cambridge Advanced Learner’s Dictionary & Thesaurus. The authors also verified the degree of perceived usefulness by students for the 14 activities shared by instructors on Twitter. Results show that the activities most frequently carried out by the trainers are seen as unimportant activities; 62.5% of instructors promote academic activities; 58.3% share research ideas or publications; 50% promote departmental activities. The activities seen as most useful by the students (providing details of practical elements) were carried out by a minority of instructors. Tweeter updates about courses outside of school hours, reminders about deadlines for work to be done in the course. The students would like the teachers to use Twitter more for procedural or organizational purposes related to the course, rather than for sharing academic content.

## **2.6.2 Research in China on student use of social software**

With the increased number of laptops and mobile devices that are connected to the Internet through wireless networks (Wi-Fi) and/or mobile data plans, more and more college students have access to online communication spaces in China. Facebook and Twitter are very popular in many countries, but they are not available to general users in China. As mentioned previously, QQ and WeChat are used widely as alternatives (Zhang & Xue, 2015) because the Chinese government blocks foreign social software.

### **2.6.2.1 Students use of QQ**

QQ is considered to be “not just a way to communicate, it’s a phenomenon, a part of culture, and a daily necessity in China” (Qian, 2014, p. 1).

QQ groups are a widely used mode of communication for Chinese college students. In general, the interaction on the QQ group is superficial. Students’ communication topics pertain mostly to relationships with their social circles, such as family members, friends, classmates and

teachers. QQ groups are generally divided into class groups, hobby groups or friend groups. The main purpose of a QQ group is relational: maintaining contact and exchanging information. It is interesting to note that 56.8% of students think that there is no difference between QQ contact and face-to-face contact (Liu & Cheng, 2012).

Many Chinese people first encountered social software and registered a QQ account, which contains a QQ space account (Qzone), during their teenage years. These two pieces of software were created by Tencent; users can use the same account name and password for both. Chinese students log in to QQ to communicate with friends, classmates, teachers and parents. They can also create their own personal page to share their news, photos or videos, etc. Moreover, college students can filter who gets to see their messages and feeds shown on QQ and Qzone or Weibo (Chong, 2013).

### **2.6.2.2 Student use of Sina Weibo**

Sina Weibo is most often described as a “Chinese Twitter.” Sina Weibo is one of China’s most active microblogging sites and has had a significant increase in popularity. Users can write 140-character messages, which can be shared, forwarded or commented on. Sina Weibo is full of celebrity gossip. Students tend to browse the news on it and form networks outside of their immediate social circles. In this kind of forum, they start gaining exposure and forming opinions about brands and public figures that are active on Sina Weibo (Chong, 2013).



Figure 9. Screenshot of Sina Weibo Web page.

If the keywords “educational technology” are entered in the Sina Weibo search bar, a page appears with all the relevant microblogging messages. Clicking on “China Education Technology” will show the related information, news and other relevant content. Sina Weibo and Twitter have very similar interfaces.

### **2.6.3 Research in North America on teacher use of social software**

Social software is used by teachers for transformative change in education (Batchelder, 2010).

#### **2.5.3.1 Teacher use of Facebook**

The paper “An Education in Facebook” is a critical study that summarize the challenges that Facebook brings to the traditional education model (Allen, 2012). This paper contends that it permits a new educational method. The author’s analysis details the new relationship between teachers and students that Facebook renders possible.

Some authors ( Sharma, Joshi, & Sharma, 2016) propose that teachers ought to make more informal use of Facebook in the classroom and promote its educational use by students themselves. One of the problems with Facebook in both research and higher education is that the use of this tool, practised as a traditional teacher-centered approach, strengthens the teacher’s authority over the students.

#### **2.5.3.2 Teacher use of Twitter**

Buettner (2013) analyzed 17 scientific articles about the use of Twitter in higher education. The vast majority of them noted positive effects. For example, Twitter facilitates informal learning and knowledge sharing and the formation of collaborative online communities; it can also promote better student engagement with the subject matter.

Dhir et al. (2013) discussed different pedagogical and instructional benefits and drawbacks of Twitter in education:

Twitter has a positive impact on informal learning, class dynamics, motivation, as well as the academic and psychological development of young students. However, the potential long-term impact of Twitter on academic performance of students and its long-term effect on learning is still worth investigating. (p. 1)

### **2.6.4 Research in China on teacher use of social software**

China is one of the few countries where indigenous social software is as or more popular than Facebook (Li & Chen, 2014). As QQ is one of the most popular social software programs



used in Chinese mainland, many studies have been conducted to investigate how QQ has been used for educational purposes.

#### **2.6.4.1 Do teachers use QQ**

In China, higher education institutions have made ICT infrastructures (information and communications technology) available for administration, teaching and research purposes. Most universities offer a website in two or more languages: Chinese, English and often others as well. In many Chinese universities, academic departments send out announcements as short text messages to employees' and students' cell phones. They also have groups on QQ for teaching and research teams to communicate with each other (Zhang & Xue, 2015).

Xu (2009) examines four features of the QQ communication model between teachers and students to understand the capacity of QQ and how it can be used for teaching and learning: 1) richness of communication models: texts, audio and video patterns; 2) freedom of communication: one-to-one and one-to-many people; 3) diversity in the ways of communication: online and offline chat patterns; and 4) transcendence of time and space. Xu also reports another case in which a QQ-based collaborative e-learning system was used as a learning environment in addition to face-to-face class meetings. He found that the use of this environment improved student-learning performance.

Dai (2011) proposes a QQ-based interactive model for after-class translation teaching following the analysis of the primary functions of QQ groups and the features of QQ-based interaction. He also argues that the QQ group model has been proved practical and effective after a semester-long experiment with college students.

QQ groups can achieve synchronous or asynchronous communication between students and teachers or among students. Users can communicate with each other: discuss and display text, pictures and videos; they can send voice messages and save and share files in the group's storage space. Group members can cooperate to complete projects (Liu & Cheng, 2012).

#### **2.6.4.2 Teacher use of Sina Weibo**

An English teacher in China, Luke (2013), found that students are interested in following teachers' posts. On Sina Weibo, students ask indirect questions. In several cases, when students were unsure of assignments, they wrote tweets describing their problems or

concerns. Sina Weibo allows users to comment directly on posts, making it much easier to have conversations.

N.B. "heave" and "heavy" don't have the same meaning.



Figure 10. Screenshot of Sina Weibo from <http://www.lukewrites.com/>.

### 2.6.5 Comparison of Facebook and QQ groups by students and teachers

The assumptions concerning the uses of social software are different in the United States, Canada and China. According to Chiu, Lin and Silverman (2012), Hew (2011), Muñoz (2009), Selwyn (2009), E. Xu and Jia (2013), and Zhang and Xue (2015), there are many differences between Chinese and North American uses of group functionalities. The following table shows some of the differences between teacher and student use of Facebook in Canada and QQ in China.

**Table 1** *Comparison of Facebook and QQ usage by students and teachers in Canada and China*

	Facebook	QQ
Chat	A few professors chat with students (Muñoz, 2009).	Professors often chat with students (E. Xu & Jia, 2013).
Comment by professors	Professors rarely leave comments on their own accounts or students' accounts.	Professors leave comments on their own accounts.
Comment by students	Students rarely leave comments on professors' account.	Students often leave comments on professors' account.
Groups	Created and led by students.	Created and led by professors and students.
Group members	Professors are not members of groups.	Professors are members of the groups.
Group course live video	No	A few professors give students a Virtual Classroom by group course live video.
Sharing documents	Professors like to share resource links on Facebook groups.	Professors like to share, receive and send files on QQ course groups.
Real-name system	Yes, professors and students use real names on Facebook and Skype.	No, they like to use nicknames on QQ.

American and Canadian teachers do not like to chat with students; instead, they like to reply to student questions on social software groups. Some Chinese teachers are the creators or managers of QQ class groups; they like to talk with students or post university administrative and event information on the QQ class groups. American and Canadian teachers rarely post comments on their personal page. Chinese students always pay attention to their teacher's personal page on social software.

### 2.6.5.1 Chinese class QQ group

It is noteworthy that Canadian and Chinese classrooms are different. In Canadian classes, students from different grades may share a classroom. According to the Chinese educational system, students are classified by the year of registration and their majors. Chinese students only have classes with students in the same grade, no matter at what academic levels they are.

Each class has a professor in charge of it. Generally, a student in the class creates a QQ class group. Then every student in the class and professors who offer specialized courses are invited to join the class group. Basically, every student and most of the professors who offer the principal courses enter the group, but professors who offer optional courses do not necessarily join it.

After the class group is established, the QQ class group is managed by the group members, including the students and the professor.

Every QQ class group has five main functions: the chat window for conversations, the bulletin board for notifications, the photo albums, the folder for sharing documents and the

activity panel. Professors like to publish assignment information, remind students of meeting time or notify them of classroom changes in the chat window and bulletin board.

The document folder allows every group member to upload and download files. Professors often upload the proposed list of books, examination report tables and other information in this space.

Furthermore, QQ has recently added an online education function called Education Mode to the group video chat service. Some professors give live courses to class groups directly on QQ. Tools are available to deliver their classes, such as PowerPoint support (see Figure 11).

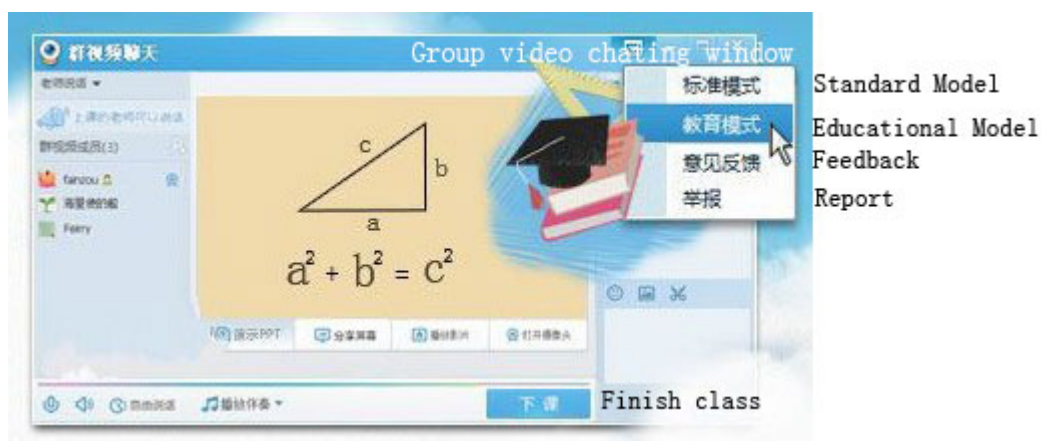


Figure 11. Interface of the QQ Group video chat education mode.

Additionally, QQ has instant messaging features similar to Facebook messenger.

## 2.7 Relationship between social and academic integration, perseverance and academic success

Tinto (1993) argues that academic and social integration are closely associated with student persistence. He later (1998) found that in order to share learning experiences, many students created their own study groups out of the learning community formed from cooperative learning activities during the first year of college. These study groups originated in a specific class but they later spread from the original class to the rest of the campus. Many students believe that these groups are a very important part in helping them focus on their academic work. He stated:

For many students, the friendships formed in the learning community continued beyond the program over the academic year to form a web of affiliations that shaped the rest of their educational careers. For some students, the friendships were short-lived, simply a part of the program. However, even those students spoke highly of their experience and of the value they placed on those friendships and the support, indeed sense of place and belonging, they provided. As a point aside, he observes that the one area where we are having success in creating norms and activities consistent with the ideals of the learning community model is where students, faculty, and student affairs professionals work collaboratively with one another in service learning. He describes the innovative efforts of a number of campuses, including their own, and what they can teach teachers about the value of transcending traditional organizational boundaries on behalf of student success. The learning community enhances student learning and serves as gateways for subsequent student success, the hoped-for goal of higher education. (p. 3)

Baxter (2012, p. 108) argues that many international higher education institutions have identified a number of areas to help students to integrate into campus life. The following are the ones that contribute most to student retention and progress:

- (1) Building relationships to ease student transition to university and enhance the sense of belonging;
- (2) Using social networking tools such as Facebook to help social and academic integration;
- (3) Forming early strong interpersonal relationships between staff, students, and their peers;
- (4) Working closely with students to identify how they can support each other to prosper and succeed at university;
- (5) Reducing factors that make students doubt;
- (6) Increasing factors that make students want to stay;
- (7) Building communications between families and students.

### **2.7.1 How social software is used for social integration**

From Tinto's (1993) perspective, the interaction that occurs between students and their peers and faculty as a result of the use social software could play an important role in their integration into their academic career and will help them persist in their studies (Kord, 2008).

The question is whether social software can help to support students' academic and social integration processes and whether it complements the traditional interpersonal relationships that students have with peers and faculty.

Kord (2008) notes that students use Facebook to express themselves, share their daily lives with others, keep in constant contact with a group of friends and keep up to date about what is happening around them. In many universities, Facebook networks are made up of students, faculty and staff who also interact face-to-face in their educational environment. This finding, which shows the use of social software as a tool to support involvement and integration into the institutional environment, was evidenced by the 91.1% intending to re-enroll during the spring semester.

### **2.7.2 How social software is used for academic integration**

Friday (2010) believes that the use of Facebook can promote academic rigour at community college; he also found that it impacted student engagement. Martínez-Alemán and Wartman (2008) cited the works of educators at a community college that uses Facebook to encourage interaction between students and faculty. The faculty members shared 99% of course information with students through Facebook and also promoted academic achievement by encouraging student chat and sharing course materials.

## **2.8 Relationship between interactions and academic success**

### **2.8.1 Social learning in social networking sites**

Martin and Dowson (2009) argue that positive relationships with adults, teachers and student peers affect motivation, engagement and achievement. They concluded that high-quality interpersonal relationships might allow students to feel more connected to school and thus take fewer academic risks.

Ahn (2011b, p. 1443) analyzed Martin and Dowson's research and concluded that it sheds light on the educational impact of social networking sites (SNS) on students who communicate valued goals and behaviours through their status messages and wall posts. According to Martin and Dowson, students might model positive academic behaviours by posting their behaviours or sharing information on SNSs. Interactions of these kinds shed highlight the way SNS relationship development may contribute to increased engagement and learning. It may be possible for teachers to use SNSs to engage their students, develop closer relationships and model positive learning behaviours over time, but such educational hypotheses have yet to be tested in formal studies (p.1443). Gangadharbatla (2008) argues that this media is effective for promoting the students' Internet self-efficacy and meeting their need to belong.

### **2.8.2 Educational social software**

Since the 1970s, cognitive psychologists have advocated a structural design model that focuses on technology-mediated teaching in learning environments. In recent years, social learning perspectives have received attention as viable or even desirable frames for research and practice related to teaching and learning, particularly in web-based learning environments. Many researchers (Birdsall, 2000; Block, 2010; Roschelle, 1992; Wall, 2014; Zainuddin, Abdullah, & Downe, 2011; Zhang & Zhou, 2010) have analyzed these social learning perspectives and how they can be used in the design and implementation of online learning. These instructional design models can be adapted to the changing patterns of teaching on the Internet.

Anderson and Dron (2011) argue that constructivist models of distance education evolved from the behaviourist-cognitivist model.

Constructivists emphasize the importance of knowledge having individual meaning. Thus, cognitive presence is located in as authentic a context as possible, which resonates with distance education, much of which takes place in the workplace and other real-world contexts outside of formal classrooms. (p. 85)

According to constructivists, cognitive presence also exploits the human capacity of role modelling (Bandura, 1977). Due to the ever-changing learning environment, it prompts student autonomy, connectivity, interaction and, hence, the social experiential learning opportunities are more apparent (McLoughlin & Lee, 2007). The new technology integrates existing learning environments and brings significant changes to the whole learning process. The emerging social networks provide an informal learning environment for us; they also provide more powerful learning tools for teaching (Bartlett-Bragg, 2006).

### **2.8.3 Social software as educational tools**

Many types of social software are used as educational tools. Facebook is currently the social software most widely used by young people in Western countries.

In the related studies, some researchers posit that Facebook or other social software plays a positive role in informal learning in people's everyday lives (Mazman & Usluel, 2010).

Social software supports collaborative learning and can encourage critical thinking in individuals. In addition, Ajjan and Hartshorne (2008) and Lockyer and Patterson (2008) claim that, as a learning tool, social software can be used for communication and access to social support, sharing information, knowledge and information content creation, aggregation and modification.

If Facebook is used for education by public organizations, it can provide a variety of learning opportunities for people; it can function around the common interests of its employees, enabling them to exchange information, ideas and discussions about working together (Mazman & Usluel, 2010). These features permit information sharing through communication, collaboration and the sharing of resources and materials.

Social software facilitates a wide range of information dissemination and sharing, allowing people to exchange information, share resources and materials, access event descriptions and comments and upload videos and photos.

In learning situations, social software can be used for instructional design that offers tools for transformative change in education. Bandura's Social Learning Theory supports the concept and collaborative nature of social networking (Batchelder, 2010).



## **2.9 Relationship between information literacy and academic success and between social software use and information literacy**

### **2.9.1 Use of social software: Being part of the information society**

In order to use social software in a conscious and responsible fashion and take a critical stance on the information relayed through social software, university students need to be information literate. Developing information literacy skills is a fundamental requirement for students that have access to global information.

Information literacy involves a set of skills that allow a person to discern between trustworthy, biased and incomplete content and sources.

ACRL (According to the Association of College & Research Libraries, 2000, January 18) as follows:

Information literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." Information literacy also is increasingly important in the contemporary environment of rapid technological change and proliferating information resources (para. 1).

Pariera (2009) states that the report titled "Presidential Committee on Information Literacy" underscores the new challenges of the information age. It mentions the rapid advances that technology has allowed for storing and organizing information and argues that this results in an "increasingly fragmented information base" (p. 1). The report continues: "Out of the superabundance of available information, people need to be able to obtain specific information to meet a wide range of personal and business needs." The authors note that information illiteracy is the main reason people are kept from actualizing the educational opportunities made available by information technologies.

Many studies suggest that the concept of information literacy should cross the boundaries of the information services provided by the traditional library and be extended to

other areas of academic study and across narrow disciplinary boundaries (McKenna, Labbo, Kieffer & Reinking, 2013; Magnuson, 2012).

The advent of social software, along with the increasing number of students that have good technical skills, brings new challenges to higher education. It widens the formal structure of courses to a more open, informal and borderless learning model (Feuer, 2009).

Social software features, such as providing information, sharing of information and submitting comments, become a primary means of the information literacy practice and offer new ways to search and find information. Teenagers are allowed to establish a Facebook account at the age of 13, which means that the future students will already have experience in the use of social software before they enter university. It is important for providers of information literacy instruction to understand the effect of social software on students and the way they interact with information.

### **2.9.2 Relationship between information literacy and academic success**

Technology continues to influence teaching and learning environments in the library, in the classroom and online. Levels of access to technology resources vary from one institution to another, but most instructors make an effort to incorporate some aspect of computer and web-based learning in their courses. Instructional librarians are faced with ongoing issues of student access to and understanding of information. Faculty members continue to see changes in the classroom through presentation media and student use of laptops and mobile devices. Librarians and faculty have numerous choices for exploring novel teaching practices based on library websites and databases, learning management systems (such as WebCT) and weblogs.

Mackey and Jacobson (2011) suggest that problems may arise if some instructors feel more skilled with technology than others or if they consider themselves somewhat less skilled than their students. This creates challenges in how to effectively integrate technology instruction in an information literacy course or program. While the technology itself may present barriers to effective communication, it also has the potential to enhance collaborative opportunities among instructors and students. One of the significant contributions that information literacy makes to student learning is to challenge their assumptions about the reliability of information

on the web. Some key strategies for incorporating effective technology-related collaborations are suggested by Mackey and Jacobson (2011, p. 192):

- Challenge student assumptions and expectations about the technologies they may be most familiar with, such as the web.
- Incorporate opportunities for collaborative problem-solving among peer groups.
- Motivate students through fully engaged and enthusiastic collaborations between librarians and faculty.
- Utilize pop culture references to engage students in entertaining activities that promote critical thinking and collaboration.
- Think beyond the web and consider video and interactive technology as a means to advance writing, research, and presentation skills.
- Seek out campus partnerships to effectively utilize technology resources for teaching.
- Stay current and incorporate emerging technologies in lesson plans and assignments.
- Consider the collaborative opportunities in web design and blogging.
- Encourage students to bring laptops to class and provide opportunities for them to use wireless access to the web in a meaningful way. (p. 192)

Many of the basic information technology skills for college students can be taught in a first-year seminar course. These skills are scalable to different settings and can be applied to motivate librarian and faculty teams to maximize the benefits of technology instruction in support of information literacy goals and objectives.

Information literacy instruction is not always successful. Much depends on how the instructor uses it. Magnuson's (2012) study on the effectiveness of blogs as a supplement to face-to-face information literacy instructions found that blogs do not promote collaboration or student engagement with information literacy skills. He noted that very few students viewed the blog after the initial bibliographic instruction session and that not a single student (out of 101) left a comment. He suggests that either more support is required from the instructor or blogging needs to be a required and graded course for blogs to be used as a supplement to library instruction.

### **2.9.3 Relationship between social software uses and information literacy**

Witek and Grettano (2012) conducted an analysis that "aims to illustrate the attitudes and patterns users are being habituated to through the use of Facebook" (p. 242). They then

related them to information-literate practices and behaviours. Finally, they applied their illustration to information literacy instruction within an academic context.

#### **2.9.4 Skills of critical media literacy**

Information literacy is traditionally defined relating to written documents. With the emergence of the social software of mass communications, however, this definition of literacy has expanded.

In today's multimedia world, with the development of digital manipulations, we cannot trust all the information on the Internet. Learning how to distinguish between reliable and unreliable information is particularly important, as no one owns the Internet. Anyone can simply create a website or send a comment or a picture on any SNS. Students need to understand that websites and SNSs may present outdated, biased or false information: information that does not reveal the identity of authors, information that contains many grammatical errors or is not from trustworthy sources. They also need to learn to question digital images and pictures on Facebook, Instagram or YouTube, which can be edited and manipulated. Making informed choices also include things such as understanding online safety issues and developing appropriate online behaviours.

Kellner and Share (2007) argue as follows:

Critical media literacy is an educational response that expands the notion of literacy to include different forms of mass communication, popular culture, and new technologies. It deepens the potential of literacy education to critically analyze relationships between media and audiences, information, and power. (p. 2)

Silverblatt, Miller, Smith & Brown (2014) emphasize the following elements of critical media literacy skill:

(1) Critical thinking skills that enable people to make independent choices with regard to which media to select and the skills to interpret the information they receive through the different channels of mass communication.

(2) Understanding the process of mass communication.

(3) An awareness of the impact of the media on individuals and the society.

(4) The development of strategies with which to analyze and discuss media messages.

(5) An awareness of media content as a “text” that provides insight into our contemporary culture and ourselves.

(6) The cultivation of an enhanced enjoyment, understanding, and appreciation of media contents.

(7) In the case of media communicators, the ability to produce effective and responsible media messages. (pp. 4-6)

Rizal and Steven (2012) argue that to analyze students’ critical thinking skills, appropriate critical thinking indicators are needed. There are nine fundamental critical thinking skills that students must be taught in order to learn to engage in critical analysis:

(1) Identify the elements in a reasoned case, especially reasons and conclusions;

(2) Identify and evaluate assumptions;

(3) Clarify and interpret expressions and ideas;

(4) Judge the acceptability, especially the credibility of claims;

(5) Evaluate arguments of different kinds;

(6) Analyze, evaluate, and produce explanations;

(7) Analyze, evaluate, and make decisions;

(8) Draw inferences;

(9) Produce arguments. (p. 1312)

Ahn’s study (2013) shows that Facebook activity correlates and predicts particular new media literacy skills. Social software platforms offer a rich environment in which to examine the social learning behaviours and sociocultural learning processes embedded in people’s everyday activities.

Kim, Sin and Yoo-Lee (2014) note that undergraduates use social media as major information sources. These researchers asked students whether they used a particular social software program to find or acquire information. The results showed that almost all participants reported using Wikipedia as an information source and that Facebook was another important source of information. Moreover, about half of the students used video sharing sites such as YouTube to gather information.

### **2.9.5 Media literacy interventions: What do teachers do with media literacy**

Bloom and Johnston (2010) think that “the role of the educator, as a result of new media, has changed substantially from one that is focused on the one-way transfer of information to one that trains students how to participate in digital environments with intelligence, skill, and literacy” (p. 1). For their study, the educators guided the students to engage in digital cross-cultural exchanges via YouTube, by teaching the students how to produce their own video and share it with other friends. “In addition to producing videos as a means to communicate and further develop one’s own media literacy” (p. 121), they offered numerous examples of the ways video production and voice communication can take place on YouTube.

Jeong, Cho and Hwang’s (2012) investigation measured the average effect 51 media literacy interventions. They found that media literacy interventions have positive effects on outcomes, including media knowledge, criticism, perceived realism, influence, behavioural beliefs, attitudes, self-efficacy and behaviour.

Cohen, James, and Mihailidis (2013) investigation of students using Twitter lists, Google+ and Facebook groups saw the students deciding what to keep, what to discard, whom to trust and what was credible and explaining the reasons behind their choices. They then explored a concept called Curation as a student- and creation-driven pedagogical tool to enhance digital and media literacy education. They found that as a tool to bring digital and media literacy competencies into the classroom, Curation could help build a meaningful teaching strategy for today’s participatory media landscape.

### **3 The Purposes of the Study**

The purpose of this study is to address this general research question: How do students and their teachers collaborate and use social software and their literacy skills in academic and social integration processes in Canada and in China?

#### **3.1 Statement of the problem**

##### **3.1.1 Increasing number of Chinese international students in Canada**

In recent years, the number of international students coming to Canada has been increasing rapidly. The 132,000 Chinese citizens studying in Canada in 2016 accounted for nearly one-third of all international students in Canada and represented a threefold increase from a decade earlier (Cooper, 2017). The population of international students from China ranks first among the biggest groups of international students in Canadian universities. It is very important for the universities to clearly understand how satisfied these students are with their Canadian learning experience, as this information may directly affect the recruitment and retention of international students (Zhang & Zhou, 2010).

Some numbers on the Université de Montréal-China relationship are as following (Université de Montréal, 2018):

- Since the fall of 2014, 1,811 Chinese students have enrolled in Université de Montréal programs, mainly in the Faculty of Arts and Science, the Faculty of Law and the Faculty of Medicine.
- Université de Montréal is a partner of about fifty Chinese universities.
- Since 2007, Université de Montréal more than 400 Chinese students have graduated from its Master's program Business Law in a context of globalization.
- In October 2017, the Centre for Chinese Studies was created at Université de Montréal in collaboration with the Chinese Academy of Social Sciences. This centre is the first of its kind to be established on the American continent.

- In 2017, there was a 31.71% increase in admissions to the University of Montreal Centre for East Asian Studies bachelor's program.

By examining social and academic uses of social software, this study aims to explore the similarities and differences in social software usage in Canadian and Chinese university students. It intends to make some useful suggestions to Canadian educators for the recruitment of Chinese students and for curriculum design. I hope that these observations will provide a positive impact on Chinese international student recruitment strategies, so that universities in Canada can continue to attract ever-larger numbers of Chinese international students.

### **3.1.2 Why the research focuses on social software use in Canada and China**

As described in the previous chapter, patterns of social software use differ quite a bit in Canada and China and the particular instances of social software also vary quite a bit.

For better or for worse, social software has become pervasive in both North American and Chinese universities and is becoming part of the educational landscape. Many research results show that social software may promote peer and faculty interactions, thereby facilitating both social and academic integration and providing students with a social support network as they develop their media literacy skills (Friday, 2010; Hew, 2011; Hocevar, Flanagin, & Metzger, 2014; Kord, 2008; Martínez-Alemán & Wartman, 2008). Thus, social software has the potential to become a very important tool used by university students to maintain and develop their social networks, which can be a key factor in university student retention as shown by Tinto (1975). This phenomenon seems to take place both in Canada and China, but in different fashions.

While the above sections clearly show that North American and Chinese students use social software for similar purposes and dedicate a lot of time to it, the specific ways that social software supports these processes are quite different in North America and China. North American social software puts more control into the end users' hands and Chinese software places a higher value on large, organized groups. The implications of these different patterns of social software uses for peer support, social integration and academic integration are unclear



and need to be investigated, particularly in the context of the rapidly rising number of Chinese students in Western and Canadian universities.

### **3.1.3 Why the research compares teachers and students in Canada and China**

My research will enhance the existing literature on comparative education in relation to social software use. The benefits of social software (e.g., Facebook) in formal academic settings are still being debated in North America. In the Chinese academic context, the benefits are widely accepted. Substantial research has been carried out on the educational uses of Western social software, such as Facebook and Twitter, but China only has a limited number of such studies. Little empirical research has been published on students' general use of social software in the context of the Canadian and Chinese higher education.

In China's universities, each program class has a class advisor in charge of class management. In general, this class advisor and the students establish a QQ class group together. Basically, every student and most of the major-course teachers are members of this QQ class group. The QQ class group is managed by the group's members. In addition, most teachers create a QQ course group to share course materials and answer students' questions (Zhang & Xue, 2015). In North America, the situation is different. Canadian universities do not appoint a class advisor. Professors are not members of Facebook class groups, and they do not participate in student activities. However, some Canadian university teachers create Facebook course groups to share materials and answer student questions. In both countries, cultural differences (Jackson & Wang, 2013), equities in education, educational systems, and student and teacher ideologies affect social software use. In addition, there are distinct differences in both countries' communication predispositions and Internet behaviours (Men & Tsai, 2012).

My research can fill this gap, so I believe this comparison research project is very valuable.

## **3.2 My personal interest in this research**

I immigrated from China to Canada several years ago. Therefore, I have learning experiences in both countries. Most importantly, I use North American and Chinese social

software on a daily basis, so I am very familiar with Skype, Facebook, QQ, Sina Weibo and WeChat. The rapid advancement of these technologies has been stunning. For example, I can now video chat with my current tutor and classmates to discuss my research project via Skype without having to see them in person, which was impossible years ago. My former colleagues and professors at Guangxi Teachers Education University now use QQ to discuss assignments with their students and post information about specialty courses on Sina Weibo. This was something that teachers from decades ago could never have imagined. My personal experience was thus also an important factor in developing a strong interest in this area.

For the above-mentioned reasons, I am curious to find out how differently both countries use social software to promote the academic and social integration of students, how they interact with social software groups, teachers and peers, and how their level of media literacy affects their academic success.

### **3.3 Relevance of this research**

#### **3.3.1 Science**

This research will advance the existing literature of comparative education on social software use for educational purposes. The benefits of social software (e.g., Facebook) in formal academic settings are still being debated in North America. In the Chinese academic context, the benefits are widely accepted, but not clearly supported by research. Substantial research has been carried out on the educational uses of Western social software, such as Facebook and Twitter (and it reveals that teachers are quite divided concerning Facebook's educational uses) but China only has a limited number of such studies. Although there are some exceptions, very little empirical research has been published on students' general use of social software in a comparative context of the Canadian and Chinese higher education.

In China's universities, each program class has a class adviser in charge of class management. In general, this class adviser and the students together establish a QQ class group. Basically, every student and most of the major-course teachers are members of this QQ class group. The QQ class group is managed by the group's members. In addition, most teachers create a QQ course group to share course materials and answer students' questions (Zhang &

Xue, 2015). In North America, the situation is different. Canadian universities do not appoint a class adviser. Most courses have Facebook groups, usually created by one student, but professors are not members of these class Facebook groups and they do not participate in student activities. Some Canadian university teachers do create Facebook course groups to share materials and answer student questions, though. The implications of these differing modes of organization are unclear. Is one more conducive to social or academic integration than the other?

From another perspective, social software brings new ways to search, select and gather information and changes both the information literacy process and the skills required to process or produce information on social software. While information literacy skills seem increasingly important, it is also unclear how these are supported by teachers and deployed by students in their educational social software use.

This research will fill these gaps in knowledge, providing very valuable guidelines to orient educational interventions that use social software in Canadian, Chinese or cross-cultural contexts.

### **3.3.2 Increasing number of Chinese international students in Canada**

In recent years, the number of international students coming to Canada has been increasing rapidly. The 132,000 Chinese citizens studying in Canada in 2016 accounted for nearly one-third of all international students in Canada and represented a three-fold increase from a decade earlier (Cooper, 2017). The population of international students from China ranks first among the biggest groups of international students in Canadian universities. It is very important for universities to clearly understand whether Chinese students are satisfied with their Canadian learning experience, as this information may directly affect the recruitment and retention of international students (Zhang & Zhou, 2010).

By clarifying how social software can contribute to social and academic integration, this study aims to explore the similarities and differences in social software uses by Canadian and Chinese university students. The findings will be of interest to both Chinese and Canadian educators and to both Chinese and Canadian students. It may help Canadian teachers better understand how social software can contribute to student integration and the “natural” patterns of social software use by Chinese students, which seem to differ from those of Canadian students.

It will provide useful guidelines for Canadian and Chinese educators in designing social software educational interventions. The research findings offer suggestions and references for Canadian university teachers and curriculum designers to show how to effectively use social software to provide a better experience for Chinese international students.

These results may also provide suggestions that have a positive impact on Chinese international student recruitment strategies, to support the trend of Canadian universities attracting larger numbers of Chinese international students. Some of the actions relevant to Chinese international students may also be relevant to other international students.

Last but not the least, the findings of this study will advance educational technology researchers' understanding of the development of social software. The purpose of introducing social software use is to create an awareness among teachers and future teachers that social software can only to enhance teaching and learning in different subject areas but also address equity issues using social development.

## **4 Research Questions and Objectives**

### **4.1 General questions**

This study is an international research project that investigates how students and their teachers collaborate and use social software and their literacy skills in academic and social integration processes in Canada and in China.

### **4.2 Specific questions**

The objectives of this study are as follows:

1. To gain a better understanding of how students use social software to support their social and academic integration process in Canada and in China.
2. To understand how students and their teachers use social software for interaction and collaborative learning activities in student learning processes in Canada and in China.
3. To analyze the means deployed by students to evaluate the information gathered on social software and how their teachers support them in this process in Canada and in China.

## 5 Theoretical Framework

In this chapter, I will explicitly state the theories and models on which the research is based by presenting definitions of the key concepts used and reviewing the literature related to the subject matter. The literature is divided into three parts, each ending with a conclusion that incorporates the essential elements of the theoretical framework of the research.

In order to achieve the research objectives, Tinto's model (1993) of student retention and collaborative learning provides a sound framework in which to ground the study.

Part 1 pertains to integration and perseverance in higher education and situates the educational opportunities afforded by social software in this context. This part starts by describing the emergence of academic and social integration concepts for college students and presents Tinto's model of student persistence and the results of research on how perseverance is affected by social software. I introduce Tinto's theoretical models to describe the process leading to persistence. This part concludes with the definition used in this perseverance research.

Part 2 concerns interactions in higher education using social software. I first examine social cognitive theory and self-efficacy and highlight triadic reciprocal determinism. I address the issue of social and relational factors in higher education by looking at the role of interaction and collaboration. Then I justify the choice of the theoretical model used to describe the general pattern.

In Part 3 of the literature review, I present the definitions of information literacy and media literacy and explore the way institutes of higher education have designed their courses to enhance the students' information literacy. I then choose a model to assess the information literacy of students.

I conclude with a description of the features of Chinese and North American social software as well as their relationships with each other, as found in the previous chapter. To analyze the differences between them in as wide a context as possible, I discuss several helpful conceptual frameworks. After citing the relevant theoretical frameworks according to the existing useful theories, I try to establish links between the frameworks.

## **5.1 Theory of academic and social integration.**

Tinto's theory of student departure (1975) is arguably the most influential model of dropout in higher education. Tinto's framework is a very good fit for this research because it provides a conceptual framework that links the peer support affordances of social software to the educational process through the concepts of social and academic integration, based on assessing student perceptions of their academic and social interactions in the institutional environment that influence the decision to engage in learning.

### **5.1.1 Definition of perseverance and student success**

Perseverance in a course or a program is not easily defined. The term is often used as equivalent as "persistence," which is used in the context of an extremely specific task. As part of a course, the students must accomplish multiple tasks. Students may be persistent in some of them and less so in others. There are many different definitions of perseverance, and sometimes different terms designate similar realities. Some terms focus on abandonment, such as drop-out, withdrawal and attrition, and others on the retention side of the phenomenon, such as retention, persistence and success (Poellhuber, 2007). Voigt and Hundrieser (2008) argue that "persistence depends upon the extent to which an individual has been integrated and engaged in the academic and non-academic components of the campus community" (p. 9). They state that the terms retention and persistence are sometimes interchangeable but that the key factor in student success is that they persist in the completion of their educational goals, such as obtaining an academic program, certificate or diploma, or graduating.

### **5.1.2 Factors influencing perseverance**

In an educational context, it has been shown that the factors that promote perseverance are also the ones that promote academic success, since it is not possible to academically succeed if you do not persist. Institutional factors that affect perseverance include institutional variables, specific courses characteristic (e.g., teaching style) and individual variables, all of which interact (Poellhuber, 2007).

### **5.1.3 Tinto's model: The student integration model (SIM)**

Scheuch (2007, p. 16) explains Tinto's theory succinctly as follows: "The academic system represents academic performance, faculty or staff interaction; social system represents extracurricular activities, peer group interactions and other performance." McCubbin (2003, p. 2) argues that the focus of Tinto's integration model is "the degree to which the individual is integrated into the social and academic aspects of the university."

So, according to Tinto's theory, student perseverance (and eventual academic success) comes from academic and social integration. This academic persistence model is important, because for education, an important goal is to improve learning and academic successes and to reduce dropouts and academic failures.

Tinto highlights the importance of social integration in university programs for student retention. In his theoretical model, peer interaction is central in leading to a student's decision to engage or give up their educational goals (Tinto & Cullen, 1973; Tinto, 1975; 1993; 1998; 2000). These interactions can be both educational and social in nature. Moreover, according to Tinto (2006), social and academic integration processes influence each other. In his most recent article, Tinto recommends cooperative or collaborative learning activities because they promote both processes. Furthermore, Tinto (1975) also emphasizes the importance of faculty contacts, he said, "Interaction with faculty not only increases social integration and therefore institutional commitment, but also the individual's academic integration" (p. 109).

According to Kord (2008, p. 2), "looking at online social networking involvement from a theoretical perspective, the interaction that occurs between students and their peers and faculty as a result of online social networking could play a key role in students' integration into the college, thus influencing persistence."

Digest (1999) and Tinto (2003) describe five basic non-residential learning community models: linked courses, learning clusters, freshman interest groups, federated learning and coordinated studies.

Figure 12 illustrates Tinto's theoretical model of how social and academic integration processes are deployed together to lead to a student's greater or lesser individual engagement towards their educational goals and the eventual decision to leave or persist.

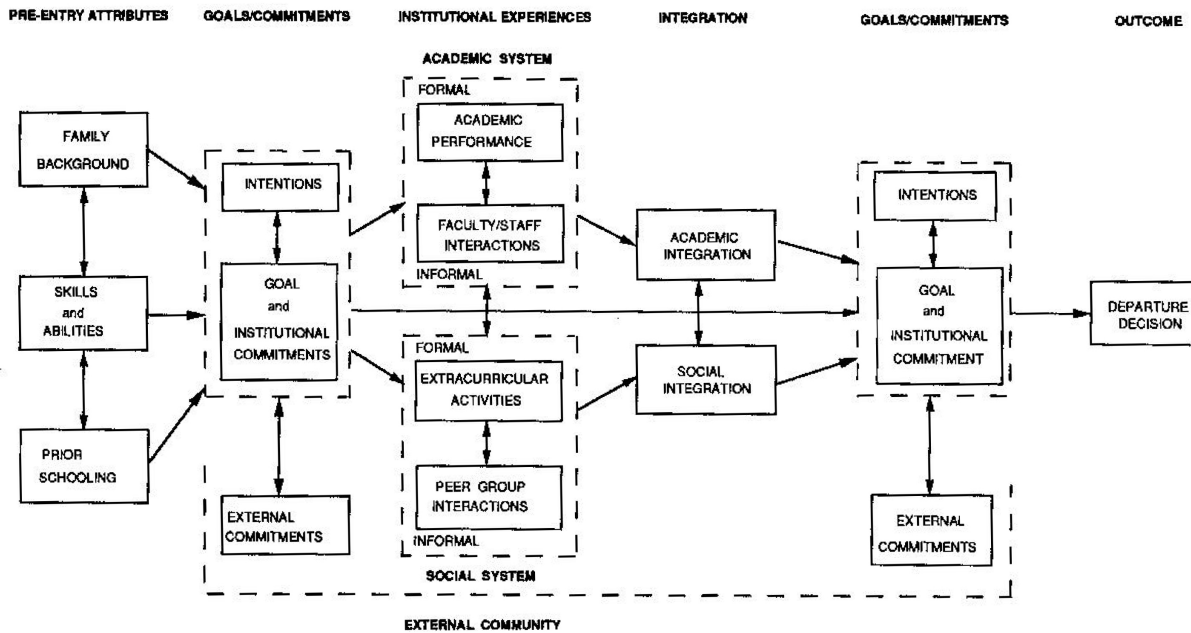


Figure 12. Tinto's model of student retention.

Integration is an important idea in Tinto's model. Tinto (1975) emphasizes that the cause of persisting or dropping out is affected by the student's degree of academic integration and social integration. Draper (2008, para 2) suggests that academic integration and social integration can be measured by the following questions:

#### Academic integration

- Grade / mark performance
- Personal development – or does this just mean a student's private judgement on the value of what they are learning (as opposed to official marks / teachers' judgements).
- "Do you think you are doing well academically?" (Academic self-esteem)
- Enjoying your subject(s).

Enjoying studying your subject(s): i.e., the study patterns required/requested are or are not enjoyable.

- Identification with academic norms and values
- Identification with one's role as a student

#### Social integration



- How many friends you have. It probably doesn't matter whether you fit with the dominant social crowd, only whether or not you have a group of friends you fit with.
- Personal contact with academics. In fact, it may be that it is important to measure really small amounts of contact: how many staff know your name, smile at you, ("How many staff have you had a personal interaction with, however small?" "How many personal interactions with staff have you had this year?").
- "Are you enjoying being at university?"

#### **5.1.4 Social integration**

Social integration is defined as the "extent to which a student feels connected to the college environment, peers, faculty, and others in college and is involved in campus activities" (Brooman & Darwent, 2014, p. 2).

Tinto's (1998) model of student retention focuses on social integration and involvement in campus activities. Social integration is about building community so that learners can "learn from one another, collaborate, feel safe to experiment, and be prepared for a workplace that is increasingly more team based" (Cullen, Harris & Hill, 2012, p. 65). Social software has a social nature; the use of social software may be linked to a student's social integration. As seen earlier, research tends to show that it can promote peer contacts and faculty contacts in numerous ways.

#### **5.1.5 Academic integration**

Tinto (1998, p. 169) noted that academic integration is also important if students are to persevere. Many studies also identify this academic integration as positively affecting retention (Davidson & Wilson, 2013).

Tinto (1998) studied the processes of academic and social integration regarding student-to-student and student-to-faculty relationships in a classroom at Seattle Central Community College. He (1998) reported that "a more accurate representation would have academic and social systems appear as two nested spheres, where the academic occurs within the broader social system that pervades campus [...and] social communities *emerge* out of academic activities" (p. 619).

### **5.1.6 Learning community**

Tinto (1998) proposes a model for student learning community. According to his definition, “learning communities are a kind of co-registration or block scheduling that enables students to take courses together... they form a ‘community of learners’ whose members are all studying the same material” (pp. 1-2).

Tinto (1998) argues that:

To be effective, learning communities require that faculty, and in some cases, faculty and student affairs professionals, collaborate in a variety of ways. Faculty in linked courses typically plan their assignments so that the activities of one complement that of the other. The point of such collaboration is to ensure that the sharing of courses provides for a coherent educational experience, one that is intentionally structured to promote student education. (p. 2)

Tinto’s idea of a learning community creates a collaborative environment that encourages students to actively participate in their education. Tinto (1993) suggests that learning communities can improve student perseverance and academic performance in higher education.

### **5.1.7 Tinto’s model in the context of social networking activities**

Kord (2008) supports the idea that Tinto’s model is a relevant framework to situate the possible impact of social software uses by students and teachers. He argues that if Tinto’s model (1975) is applied to the students’ use of social software to interact with members of the institution, their levels of academic and social integration can be predicted. The interactions that occur through social software have “the capability to shape and influence educational goals and commitments the same as in-person interactions do... Online social networking allows students to remain connected to their families and to maintain relationships with individuals external to the institutional environment” (p. 14).

Tinto (1998) maintains that in order to be successful, first-year college students must learn to balance social and academic relationships in a new learning environment.

Poellhuber (2007) writes that several studies have established a link between an increase in the number of interactions among peers and between students and teachers and increased

student satisfaction. Ahn (2011a) says that the vast majority of school district leaders believe that social software can increase students' learning abilities and improve their academic performance because online social networks open the door for student access to resources and social support. Beneficial effects on the students' development can also be expected.

According to Kord (2008. p. 3), student use of online social networking continues to create challenges and issues for higher education professionals. Keeping abreast of these challenges has proven to be difficult for them because of the speed at which new technologies are introduced. It appears that some higher education institutions are taking initiatives to update their staff about their students' online social networking habits.

### **5.1.8 Promoting student success**

Tinto (1998) discovered that students who develop their own peer group in the first year share a common learning experience. These groups, founded first within class peers, tend to then spread both inside and outside the campus. Many students value these groups because they believe they are the main reason for of their persistence through college. Tinto (1998) describes how such a learning community enhances student success:

The one area where we are having success in creating norms and activities consistent with the ideals of the learning community model, is where students, faculty, and student affairs professionals work collaboratively with one another in service learning...The innovative efforts of a number of campuses, including our own, and what they can teach teachers about the value of transcending traditional organizational boundaries on behalf of student success. The learning community enhances student learning and serve as gateways for subsequent student success, the hoped-for goal of higher education. (p. 3)

### **5.1.9 Summary of Tinto's model**

To summarize Tinto's model, each student has their own gifts, goals and commitments before entering college. During college, the student's interaction in the institution with their peers and teachers leads to their integration. The level of integration influences their departure or persistence. Social software can be an educational tool that promote student academic success.

My research aims to show that the relationship between the teachers and students who spend time on social software greatly assists students in their academic and social integration in college.

## **5.2 Collaborative learning**

The concept of collaborative learning has some roots in Vygotsky's (1978) theory, through "the proximal development zone" concept. Vygotsky emphasized the importance of learning through communication and interaction with others that could act as attainable cognitive models. Collaborative learning has become a formal and popular theoretical and practical model that inspires many forms of group learning activities. Collaborative learning refers to students taking the form of group participation, in order to achieve a common learning goal, under certain incentive mechanism to maximize the individual and others acquired results, is a mutual aid behavior (Smith & MacGregor, 2014).

### **5.2.1 Collaborative activities and social integration**

Johnson, Johnson and Smith (1998) found that cooperative learning at the university level influences students' academic performance, quality of peer relations and adaptation to their university life.

Poellhuber (2007) states the following:

Collaborative activities might improve some distance learners' social integration process and possibly sustain their motivation, which would lead to higher involvement in course work and, ultimately, to persistence. Peer interaction is a form of learner support where students are invited to communicate with other students registered in the same course. (p. 192)

### **5.2.2 Online collaborative learning environment**

Lave and Wenger (1991) argue that learning is based on a social co-participation process. They propose the concept of the "community of practice" in their situated learning theory. A community of practice is defined as a group of people who come together to work on a common problem or goal and to share their experiences and knowledge for developing themselves both personally and professionally.

Wenger (2015) defines a community of practice as follows:

In pursuing their interest in their domain, members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other; they care about their standing with each other. (p. 2)

The teacher's active supervision of online collaborative teaching and learning activities is important (Koh, Herring & Hew. (2010). Without the teacher's guidance, it is difficult for students to collaborate in a group (Palloff & Pratt, 2010). The teacher acts as counsellor helping students learn and encouraging them to share their experiences in the collaborative learning environment (Misanchuk & Anderson, 2001).

Rovai (2002) highlights important characteristics of the distance-learning community by saying:

Schools need to assist students in making the adjustment to learning at a distance by enhancing student satisfaction and commitment. Those students who possess strong feelings of community are more likely to persist than those students who feel alienated and alone (Tinto, 1993). Therefore, one strategy to help increase retention is to provide students with increased effective support by promoting a strong sense of community. Such a strategy has the potential to reverse feelings of isolation and, by making connections with other learners, to provide students with a larger base of academic support. (p. 12)

The classroom community he created revealed the following characteristics:

- A feeling of connection with each other and to the instructor.
- A manifestation of immediate communication behaviours that reduce the social psychological distance between people.
- Shared common interests and values.
- Trust and helping mentality toward each other.
- Active engagement in a two-way communication.
- Pursual of common learning objectives.

### **5.2.3 Collaborative learning with social software**

Learning is not only a cognitive phenomenon but also a social phenomenon (Ochsner & Lieberman, 2001). We learn with and from others. Many class interactions occur formally or informally among students. Cooperation and collaboration among peers is something that should be encouraged (Seifi, Halbert & McGrenere, 2014).

Informal contacts between students can be integrated more formally into the learning process. They can be more social in nature or have cognitive goals. Contacts among peers can take quite diverse forms, where collaboration is somehow lighter or less intensive; alternatively, it can be in the realm of coaching activities (Gagné, Deschênes & Bilodeau, 2002). As previously seen, social software educational activities can be formal or informal, and formal learning activities often take the form of collaborative learning.

## **5.3 Social learning and motivation**

In recent years, many scholars (Alexa & Zuell, 2014; Cheung et al., 2011; Dunlap & Lowenthal, 2009; Kirschner & Karpinski, 2010; Ravenscroft, 2011; Wang & Wu, 2008) have cited social cognitive theory in their studies of social software. This theory highlights the fact that motivation is a phenomenon that has several components (self-efficacy, control, types of goals, intrinsic or extrinsic orientation of motivation, perception of the value, importance or the difficulty of the task, self-regulation, etc.) and is scalable. From a socio-cognitive approach perspective, several authors summarize key research findings on academic motivation by placing them in general models or specific theories. Social cognitive theories of motivation point out the interdependence of cognition, environment and behaviour (Poellhuber, 2007).

American psychologist Albert Bandura proposed the social cognitive theory in 1986, a decade after formalizing a social learning theory (1977). This theory (Bandura, 1986) focuses on the importance of observational learning and self-regulatory processes in human behaviour. It emphasizes the interactions between human behaviour and the environment through perceptions, cognitions and expectancies. It reintroduces conscious thought as a legitimate object of the scientific study of human behaviour. Bandura determines that psychological functioning is not explained by internal impulses or environmental stimuli, but by “reciprocal

determinism,” i.e., continuous reciprocal interaction between personal and environmental factors. The effect of environmental factors on behaviour is mitigated by personal factors (cognitive processes and interpretations) that affect behaviour, which in turn influences the environment. At the heart of social learning theory is the ability to symbolize and anticipate the consequences of behaviour (Poellhuber, 2007).

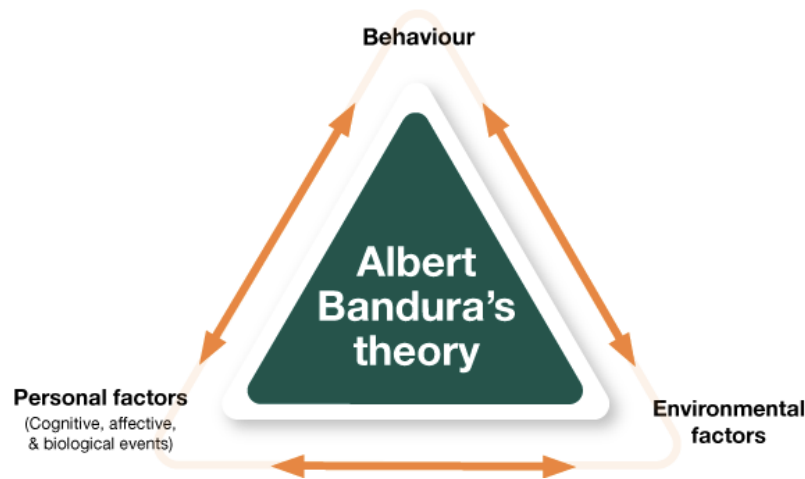
Bandura’s social cognitive theory described the triadic reciprocity between the personal, behavioural and environmental factors that influence one another mutually. His reciprocal determinism model (1989) depicts the dynamic interactions between these factors. These interactions are the source of learning. This model is quite well known in the college system in North America, which makes it useful in the context of teacher training.

Bandura’s social learning theory (1977) is at the root of the current socio-cognitive theories of motivation that have led to “expectancy-values” models of motivation. It argues that self-efficacy is a central and powerful motivational concept, and it is found in the main theories of motivation in one form or another. The concept of self-efficacy is considered by many researchers to be the most important motivational concept for predicting learning and performance (Alexa & Zuell, 2014; Dunlap & Lowenthal, 2009). Social learning theory has been applied to the online social environment (Wang & Wu, 2008).

### **5.3.1 Triadic reciprocal determinism**

Bandura (1989) favors a model of causation that involves triadic reciprocal determinism:

In this model of reciprocal causation, behaviour, cognition, other personal factors, and environmental influences all operate as interacting determinants that influence each other bidirectionally. Reciprocal causation does not mean that the different sources of influence are of equal strength. Some may be stronger than others. Nor do all the reciprocal influences occur simultaneously. It takes time for a causal factor to exert its influence and activate reciprocal influences. (p. 2)



*Figure 13.* Bandura’s triadic reciprocal determinism.

In the triadic system, behaviour and environment represent a two-way interaction. Behaviour is an intermediary between individuals and the environment, and individuals keep changing the environment to suit their needs and achieve their purposes. Behaviour occurs where individuals and the environment interact. It is not only dominated by the needs of individuals, but also influenced by the constraints of real environmental conditions (Bandura, 1989). He defines the concept of “reciprocal” as “the interaction between things” and “determinism” as the “product of the things affected.”

Social cognitive theory emphasizes that behaviours result from both the social interaction of people and their environments. Tu (2000) argues as follows:

Personal and environmental factors determine each other, and the influences are bi-directional. Interaction is viewed as a process of reciprocal determinism; behaviour, other personal factors, and environmental factors all operate as interlocking determinants of each other. Social interaction between learners and role models is required for social learning to occur, and interaction and learning are interdependent. (p. 30)

Yu, Tian, Vogel and Chi-Wai Kwok (2010) suggest that young people’s online social networking behaviour can bring them physical and psychological well-being. “It is worth noting that more and more universities emphasize student-centered learning practices and their educational goals provide an environment for students’ lifelong learning” (Wong, Lai, Nagasawa & Lin, 1998, p. 2). Thus, the researchers try to expose how university students’ social software



uses for learning tasks entails important implications for pedagogy and educational administration.

Teo, Chan, Wei and Zhang (2003) indicated that in the virtual network environment, both information accessibility and community adaptivity have significant effects on the users' perceptions and behavioural intentions.

In keeping with social learning theory, Pempek, Yermolayeva and Calvert (2009) highlight the importance of observational learning in online networks:

Communication exchanges of the past are expanding in the information age. Although interactions sometimes take place, lurking and observing others' actions, such as reading the news feed about what friends are doing or looking at others' profiles or pictures, were far more common than posting information or even updating profiles. (p. 31)

These researchers highlighted that students have a strong interest in observing others. Interaction is seen as a sign of new media, and online users spend a lot of time looking at others (Pempek et al., 2009).

Kord (2008) highlights the relevance of investigating student uses of social software and social networking, as they may have an impact on student integration:

Using online social networking as a medium to measure the integration and involvement of college students has yet to be attempted, as all of the persistence literature relates to in-person interaction whether in a one-on-one or group setting. The influence of online social networking in students' lives is real and continues to affect their educational experiences. At university, measuring students' involvement in online social networking and how it is perceived to influence their integration is deemed worthy of study. (p.14)

The interactions among individuals, peers and their environment will change the individual's cognitive and emotional identification. The social aspect of learning will be a relevant point in my interviews and observations on university students' online social software behaviour and its consequences.

### **5.3.1.1 Personal influence: Self-efficacy**

According to Bandura (1994, p. 2), self-efficacy is defined as “people’s beliefs about their capabilities to produce effects” or “in one’s capabilities to organize and execute the courses of action required to produce given attainments.” In his social cognitive theory, the most critical factor is self-efficacy for individual recognition. It represents the confidence to complete a particular task; therefore, self-efficacy can adjust individual cognitive behaviour (Bandura, 1982).

In the context of web-based learning, Wang and Wu (2008) suggest that “the importance of personal, behavioural and environmental influences would vary for different activities and under different circumstances” (p. 1059).

### **5.3.1.2 Behavioral influence**

Bandura (1999) states that “Their behavior plays a dominant role in how they influence situations which, in turn, affect their thoughts, emotional reactions and behavior. In short, behavior is an interacting determinant rather than a detached by-product of a behavior less person-situation interchange.” (p. 7)

### **5.3.1.3 Environmental influence**

Bandura (1989) argues that environment is an important factor that can affect individual behaviour and that it provides the framework for understanding behaviour. Social cognitive theory suggests the following:

Because of the bidirectionality of influence between behaviour and environmental circumstances, people are both products and producers of their environment. They affect the nature of their experienced environment through selection and creation of situations. People tend to select activities and associates from the vast range of possibilities in terms of their acquired preferences and competencies. (p. 4)

### **5.3.2 Observational learning**

Albert Bandura (1977) argues that observational learning occurs through observing the behaviour of others. A social model is significant in observational learning because it facilitates the cognitive process. Observation helps the learner convert the contents of the observation and store it in memory for later imitation. Bandura's social cognitive learning theory states that there are four ways of achieving this: direct modelling, synthesized modelling, symbolic modelling and abstract modelling. According to Bandura's social cognitive learning theory, observational learning can affect behaviour in many ways, with both positive and negative consequences. Observational learning suggests that an individual's environment, cognition and behaviour all integrate and ultimately determine how the individual functions.

### **5.3.3 Sources of self-efficacy and learning processes**

A lot of research (Blomquist, Farashah & Thomas, 2016; Elliott, Thevenin & Bigelow, 2017; Khine & Areepattamannil, 2016; Sağlamel & Doğan, 2016; Uçar & Sungur, 2017) shows that self-efficacy beliefs are related to cognitive engagement and perseverance in accomplishing a task.

Bandura (1989) states that self-efficacy is the motivational concept that will most likely explain differences in performance. Self-efficacy is a motivational construct that has been associated with persistence and performance repeatedly in a wide variety of contexts and grade levels. He also suggests that self-efficacy-built motivation can best predict behavioural consequences in the fields of education and psychology. Self-efficacy perceptions are the product of four principle sources of efficacy information: "performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal" (Bandura, 1977, p. 195).

Performance accomplishments are the most important source of the sense of self-efficacy. In general, if a person consistently believes that his or her past experience has been successful, then his or her self-efficacy beliefs will get stronger; conversely, failures will cause it to weaken (Bandura, 1989). For example, in the field of learning, a student

who has had many experiences of success will have a sense of strong and durable self-efficacy that can trigger the confidence to overcome obstacles (Reynolds & Miller, 2003).

Bandura (1989) argues that “human nature is characterized by a vast potentiality that can be fashioned by direct and vicarious experience into a variety of forms within biological limits” (p. 74). Learning through vicarious experience means people can learn by observing others’ substitute experience. People follow the modelled behaviour, which is an effective way to promote self-efficacy.

People can become convinced that they have certain capabilities by verbal persuasion, for instance, feedback and speeches given by coaches or others, expectations of others or even self-talk (Bandura, 1989). Precursory efficacy information is often conveyed in the evaluative feedback given. Wang & Wu’s research supports the concept of learners tending to provide feedback that results in more effective learning (Wang & Wu, 2008), but does not improve academic achievement. Another study (Reese-Durham, 2005) argues that peer feedback is important to improve understanding and learning during the feedback process.

The responses that an individual gives due to emotional arousal can influence their level of perceived self-efficacy (Bandura, 1989). “Physiological information has been shown to be a more important source of efficacy information in the case of physical activity tasks than in nonphysical tasks” (Ede, Hwang & Feltz, 2008, p. 12).

When teachers and friends model the kinds of behaviour that lead to academic success, such as study habits or information seeking, a student subsequently feels more capable about achieving success. Psychological functioning is not explained by inner impulses or environmental stimuli, but by “reciprocal determinism,” a continuous reciprocal interaction between personal and environmental factors. The effect of environmental factors on behaviour is mediated by personal factors (cognitive processes and interpretations) that generate behaviours, which in turn affect the environment.

Joo, Bong, and Choi (2000) showed that students’ self-efficacy in using the Internet significantly affects their web-based performance. Tsai and Tsai (2003) also indicate that on a web-based learning task, students with higher Internet self-efficacy achieved better performance than those with lower Internet self-efficacy. Hong, Hwang, Szeto, Tsai, Kuo

and Hsu (2016) showed that self-efficacy and learning interest are positively correlated to learning satisfaction when students use social media to learn.

### **5.3.4 Interaction factors of social software for learning**

Lenhart, Madden, Macgill and Smith (2007) combined the interaction of three determinants in the process of using social software and found that a combined effect cannot constitute a complete, effective and interactive format without any of the three factors (behaviour, individuals and environment):

- Behaviour, referring to learners engaged in learning activities through social software.
- Person, referring to learners in the research. It also includes the learner's cognitive structure, personality traits, physical characteristics, psychological structure, age and other characteristics.
- Environment – the space of social software – referring to the learning environment, including computers, learning interface, learning platform, learning resource library, learning group and so on.

College students' involvement in social software has increased considerably in the last decade. Some studies (Blomquist et al., 2016; Elliott et al., 2017; Khine & Areepattamannil, 2016; Sağlamel & Doğan, 2016; Uçar & Sungur, 2017) show that social software use has a positive effect on self-efficacy. Kim (2013, p. 39) found a positive correlation between the number of Facebook friends and self-efficacy in college students: “the data indicate a significant inverse relationship between Facebook frequency status updates and self-efficacy.” Gangadharbatla (2008) proposed that social software might influence students' Internet self-efficacy levels due to the interaction between teachers and students. He also shows that the social software's “useful features and functions may help build and instill confidence in customers” (p. 12). Consequently, it may be likely that self-efficacy positively influences psychological adjustment and social participation with the use of social software, such as Facebook.

## **5.4 Information literacy**

Today's society is media saturated; the rapidly changing information and communication technology promote the advancement of college students' information literacy skills, especially with the popularization of the Internet and mobile devices (Kim & Yang, 2016). This section introduces the old and new definitions of information literacy, as well as some emerging definitions related to new literacies essential in the context of social networks. It will also depict some measuring standards for student information literacy.

### **5.4.1 Information literacy background and ACRL**

Historically, information literacy, particularly with the advances in information and communication technology (ICT), has developed since the 1990s. These technologies contribute to the fragmentation of information, which means that using the traditional way of searching for information has become increasingly difficult (Mackey & Jacobson, 2011). While the challenges of the "information age" are universal and broad, the American Library Association Presidential Committee on Information Literacy stated that:

Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand. (American Library Association, 2008, para. 3)

The ACRL (Association of College & Research Libraries, 2000) has developed five standards with a hierarchical structure to facilitate the instructional development and assessment of information literacy. Each standard has a number of specific performance indicators, which can be used for the development of learning objectives. For the purpose of assessment, each performance indicator has a set of corresponding learning outcomes.

Information literacy covers universal concepts and touches most aspects of higher education (Feuer, 2009). This is illustrated by the following quote (Jones & RiCharde, 2005):

The construct of information literacy can only be captured if it is treated as a broad set of skills for the information-intensive society that most college campuses have become. It includes skills across all psychological domains (cognitive, affective, psychomotor, and conative), and the breadth of possible outcomes touches every curriculum and discipline.

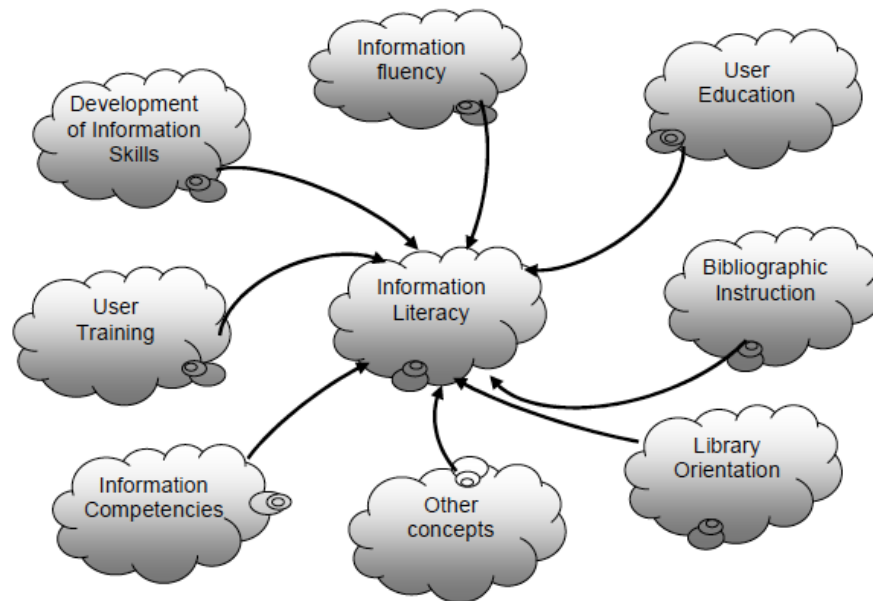


Figure 14. The concept of information literacy. Lau (2006).

### 5.4.2 Definitions for information literacy

The ACRL has developed a series of standards to assess information literacy for higher education. The ACRL’s aim is to define information literacy in the educational context and create criteria to measure students’ information literacy skills (ACRL, 2000). According to its official website, the ACRL defines information literate individual as follows (ACRL, 2000, para. 5):

- “Determine the extent of information needed;
- Access the needed information effectively and efficiently;
- Evaluate information and its sources critically;
- Incorporate selected information into one’s knowledge base;

- Use information effectively to accomplish a specific purpose;
- Understand the economic, legal, and social issues surrounding the use of information and access and use the information ethically and legally.”

Information literacy is an evolving concept, which has many implications for learning in today’s educational environment. Higher education pays more and more attention to information literacy, and to other types of literacy needed in today’s world. Feuer (2009) argues that “the ever-accelerating pace in the creation of human knowledge and the need to cope with the information overload have underscored the importance of preparing students to meet these challenges” (p. 52). Information literacy is a set of abilities that allow individuals to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.” Information literacy is also increasingly important in the contemporary environment of rapid technological change and proliferating information resources (American Library Association, 2008).

Herring (2010) defines information literacy as the critical and reflective ability to search information, which can adapt to the new information environment, as a practice. For education, Cannon and Francisco (2007) have developed a list of five learning objectives for information literacy for geography majors, which serves as the focal point for instruction and assessment. The learning objectives are “(1) to identify the function of the types of specialized reference sources and know how to use them; (2) to interpret bibliographic information in citations and records; (3) to search an electronic database effectively; (4) to find reliable information on the Internet; and (5) to evaluate information in any format in terms of authority, supporting documentation, purpose, and presence of the review process” (pp. 41-42).

The ACRL’s (Association of College & Research Libraries, 2000) previous definition of information literacy describes it as a set of skills or competencies that are uniform among all learners. This conception is based on an inventory of competencies assumed to operate across all disciplines and contexts. The ACRL revised recently its information literacy framework so that it is more consistent with the new skills required with the emergence of social media.

Mackey and Dean (2011) offer bring a new and wider concept, however, that of metaliteracy. They argue that metaliteracy builds on information literacy’s traditional core components by emphasizing new roles and responsibilities brought about by emerging



technologies and collaborative communities. Jacobson and Mackey (2013) posit that “metaliteracy empowers learners to participate in interactive information environments, equipped with the ability to continuously reflect, change, and contribute as critical thinkers” (p. 86). It is important for individuals to view themselves as information producers, both individually and collectively, and to recognize that they join many others in this role. Kaplan and Haenlein (2010) think that as both producers and consumers of information content in an ever-changing variety of formats and modes, learners must recognize that they have to interact, evaluate and share information effectively and flexibly in order to adapt to these changes.

### **5.4.3 Several new concepts of information literacy**

The rapid development of the Internet has provided users with a range of free and versatile social tools to acquire and exchange information. These tools include social software and other Web 2.0 technologies, such as Facebook and Twitter, and other Web 2.0 websites and tools, such as blogs, wikis, video sharing and social bookmarking (Click & Petit, 2013). Some new concepts or new forms of literacy are thus emerging in the literature which are somehow related to information literacy.

#### **5.4.3.1 Web 2.0 literacy**

Information literacy is sometimes called web literacy when it applies specifically to the web domain. The ACRL (2000) defines web literacy as a set of skills, which include accessing and analyzing information on the web. While these skills may pertain to any kind of information literacy, Sutherland-Smith (2002) states that “web literacy involves an expansion of traditional critical reading skills to incorporate evaluation of visual and non-textual features and a greater use of associative logic” (p. 58). Sorapure, Inglesby and Yatchisin (1998) define web literacy as involving “an ability to recognize and assess a wide range of rhetorical situations and attentiveness to the information conveyed in a source’s non-textual features” (p. 410).

Web 2.0 tools are being adopted to provide services in libraries. Along with Web 2.0, the Library 2.0 emerged, which refers to the use of Web 2.0 for library information inquiry services and user feedback (Magnuson, 2012).

Godwin (2009) suggests that Web 2.0 technologies are best used to teach information literacy concepts. He gives an example of a librarian who might use the Flickr tagging feature to “help students understand keywords, subject searching and make comparisons between tags and controlled vocabulary” (p. 269); libraries can create Facebook groups to share information and interact with patrons.

The use of Web 2.0 technology in information literacy instruction is a relatively new area of study. Social technologies have become very common in university campuses. The innovation of Web 2.0 technology and the ease with which it can be used have generated great enthusiasm in its potential as an educational tool (Magnuson, 2012).

### **5.4.3.2 Multiliteracies**

With the ongoing development of information and communication technology, the change in access to information sources, and the formation of a global common, some scholars are very interested in proposing several new and modified concepts of literacy, for example, “multiliteracies” or “new media literacies” (Dawson & Siemens, 2014).

The New London Group (1996) published an influential article, “A Pedagogy of Multiliteracies: Designing Social Futures,” that describes a literacy pedagogy that has two main aspects:

First, we want to extend the idea and scope of literacy pedagogy to account for the context of our culturally and linguistically diverse and increasingly globalized societies, for the multifarious cultures that interrelate and the plurality of texts that circulate. Second, we argue that literacy pedagogy now must account for the burgeoning variety of text forms associated with information and multimedia technologies. (Dawson & Siemens, 2014, p. 64)

The field of education has entered the era of “big data.” Manyika, Chui, Brown, Bughin, Dobbs and Roxburgh (2011) define “big data” as a “dataset whose size is beyond the ability of typical database software tools to capture, store, manage and analyze” (p. 1).

Dawson and Siemens’ (2014) report suggests that the concept of “big data” relates to the flood of data, which is generated through the interaction between users of social media, such as

Facebook, Twitter and YouTube. In the educational background, the interaction between learners and various technologies, such as student learning systems (LMS) and social media, generates digital information signs. As a new extension of literacy, the key of multiliteracies is to “establish measures regarding how well students in the education system are mastering these fundamentals” (p. 11).

**Table 2** *Mapping multiliteracies to learning analytics techniques and applications*

*Mapping Multiliteracies to Learning Analytics Techniques and Applications*

Multiliteracy	Learning analytics techniques & applications
Experimentation	Modeling
Products & Creation	Knowledge domain mapping
	Personalization
	Structured mapping
Network agility & citizenship	Prediction
	Relationship mining
Task effectiveness and efficiency	Modeling
	Structured mapping
	Prediction

Multimedia technology has provided some equivalents to virtual classrooms on the web and social networks. These platforms support synchronous or asynchronous communication, course material distribution, as well as online student assessments between students and students or students and teachers (Dawson & Siemens, 2014, p. 8).

Furthermore, multimedia technologies provide students with more forms of media to fit their different learning styles, leading to enhancements of their learning effectiveness (Lau, Yen, Li, & Wah, 2014). In this new context, students must develop “multiliteracies.”

### 5.4.3.3 Media literacy

All these new literacies incorporate manipulation and comprehension of a wider variety of media than text. The media literacy concept has been discussed for quite a while. Wikipedia (n.d.-c) defines it this way:

The terms ‘media literacy’ and ‘media education’ are used synonymously in most English-speaking nations. Many scholars and educators consider media literacy as an expanded conceptualization of literacy. In 1993, a gathering of the media literacy

community in the United States developed a definition of media literacy as the ability to access, analyze, evaluate and create messages in a wide variety of forms. (para. 1)

Mackey and Dean (2011) indicate that social media space and interactive community are innovative collaborative technologies for the traditional information literacy.

#### **5.4.3.3.1 Media literacy for teaching approaches**

De Abreu and Mihailidis (2013) offer six media literacy teaching approaches to help teachers start discussions and frame the approach as to how curation fits into the media literacy landscape (pp. 33-35).

- Where top-down and bottom-up meet

Now, the media literacy must be considered as a variety of factors in the social networking site, for example, sharing links, ideas, pictures, videos, reviews, forums and group information resources, “where students can identify the point where top-down information meets bottom-up information.”

- Integration of mediums, messages and platforms

Students are taught how to use various information platforms to integrate online information.

- Sources, voices and online credibility

Students are taught to examine which information has accuracy, balance, independence, and truth. For example, ask whether or not the news from Facebook is true, or whether the social networking site can provide credible sources.

- Frames, bias, agendas and perspectives

Media literacy can use curation to discuss how media frames, implicit bias, agendas and perspectives are collectively developed through the social platforms of online networks.

- Appreciating diversity

The rich information in the network environment should not simply be divided into good and bad. Teachers should help students discover and appreciate the value of information, so that the students can become more tolerant, knowledgeable and understanding.

- Civic values and civic voices

Citizens of all ages are eligible to build voices, create dialogue and express their opinions. Students should be guided in actively participating in these discussions in daily life and in creation-oriented learning.

Media literacy emphasizes citizen participation and engagement, as young people and society adopt social media techniques quickly and at the same time promote information and communication needs. Educators should provide concrete methods for helping citizens across the media sphere ( De Abreu & Mihailidis, 2013).

#### **5.4.3.3.2 Evaluate media literacy skills and its sources critically**

Current media literacy skills still rely on the level of traditional information literacy skills (Jackson, Oliver, Shaw & Wisdom, 2006). Even if the reading and writing skills of the students are limited, the students will continue to use social software for learning. Traditional literacy is still the basis of all information literacy. These basic skills can be evaluated by automated content analysis.

Dawson and Siemens (2014) argue that “an understanding of the learning design is essential for establishing meaningful indicators and assessment of an individual’s proficiency within one or more literacy” (p. 297).

In order to show the value of a research subject, the media literacy instructor must develop tools to accurately measure and report the skill development results and improvements.

Hobbs and Frost (2003) have developed methods to measure media literacy. Based on the definition of media literacy, they have designed an intensive qualitative analysis and then let the students answer the questions about how to use media tools. The measurement includes the students’ ability to identify the information, point of view and construction techniques used in media messages and the news media broadcast in text, video and audio.

#### 5.4.3.3.3 Critical media literacy approach

Critical thinking is considered to be one of the most valuable media literacy criteria. In *Media Literacy: Keys to Interpreting Media Messages* by Silverblatt, Miller and Smith (2014), the authors argue that media literacy is “a critical thinking skill that enables audiences to develop independent judgments about media content” (p. 2). They emphasize that media literacy is the first and foremost requisite to apply critical thinking skills to the media.

The assessment criteria for media literacy are uncertain. As Scharrer (2002) indicates, the challenge of measuring media literacy is that “the results of participation in media literacy curricula are not often explicitly defined and measured, but there is a generalized notion about what these outcomes are” (p. 354).

Kellner and Share (2007) suggest that teachers can aid in students’ development of critical media literacy skill sets by encouraging a critical analysis of how discipline-specific issues are represented in the field and mass media. For example, instructors can ask students to consider:

- (1) Who is conveying this message?
- (2) What incentive might they have to convey information from this perspective?
- (3) What language and media (e.g., text, audio, video, and graphics) are they using to describe this message?
- (4) What audience is this message crafted for?
- (5) How are the media and language displayed tapping in to commonly held stereotypes or representations?
- (6) How are these points valid or in opposition to current research?
- (7) What communication strategies and representations might the field take to refute misinformation? (Libraries of University of Minnesota, 2012. para. 14)

#### 5.4.4 Summary of information literacy

Web 2.0 literacy, multiliteracy and media literacy are the newly emerging types of information literacies. They focus on the modes of combination of skills, including critical thinking and analysis and user-generated information.

As the ACRL's Information Literacy Competency Standards are finally in the process of being updated to reflect today's information environment, media literacy is the process of teaching and learning about media, and social software can be the prime medium for course dissemination. Multiliteracy highlights the key aspects of literacy, which are linguistic diversity and multimodal forms of linguistic expression and representation. Although multiliteracies and the metaliteracy framework seem to be the most promising for the near future, I think the media literacy framework is appropriate for my project topic. It is simpler, more established and has served as a sound theoretical framework in many empirical studies.

#### 5.5 Summary of theoretical framework

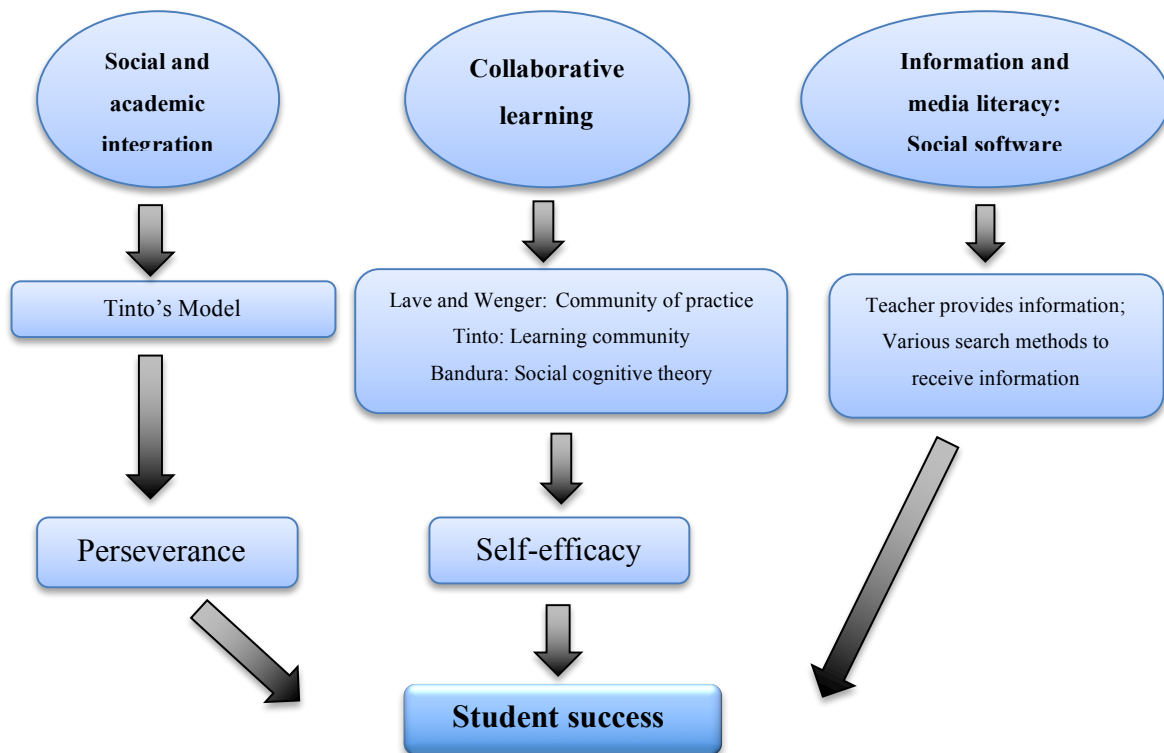


Figure 15. My theoretical framework.

My study's main theoretical framework is essentially based on Tinto's model of student integration, on collaborative learning and on information and media literacy.

Tinto's (1975) model explains the process of students' social and academic integration. Brooman and Darwent (2014) define social integration as the "extent to which a student feels connected to the college environment, peers, faculty and others in college and is involved in campus activities" (p. 2). They developed a social integration scale with three subscales: "sense of belonging," "relationship with staff," and "old friends" (p. 1). Tinto's (1997) model of student's engagement becomes one key of social integration in campus activities to limit attrition. Cullen and his colleagues (2012) argue that this means to "learn from one another, collaborate, feel safe to experiment and be prepared for a workplace that is increasingly more team based" (p.65). Some research literature focuses on the social integration that links first-year university transition success and social software, because social software nurtures social integration (Barnes, 2017). Madge, Meek, Wellens and Hooley (2009) found the use of Facebook to improve first-year students' social and academic experiences. They saw the potential for research using the social media experiences of first-year students.

Bandura (1977) argues that self-efficacy-built motivation can best predict the behavioural consequences in the fields of education and psychology. He also suggests that observational learning occurs through observing the behaviour of others in the environment. Linnenbrink and Pintrich (2002) argue that student motivation is an academic enabler for school success; motivation includes "academic self-efficacy, attributions, intrinsic motivation and achievement goals" (p. 1). Putwain, Sander and Larkin (2012) state that self-efficacy may play an important role in maintaining challenge appraisals to maintain pleasant emotions and better academic performance.

Lave and Wenger (1991) argue that learning is social co-participation in a community. Johnson et al. (1998) found that the relationship among academic performance, quality of peer relations and adaptation to university life is influenced by collaborative learning. Poellhuber (2007) argues that the interaction between students in the same course group is a form of learner support.



Blake, Bowles-Terry, Pearson and Szentkiralyi (2017) identifies academic success with the support of information literacy. There are three major findings that demonstrate the value of information literacy instruction: student retention rates are higher for those students whose courses the library instruction interactions ; first-year GPA for students whose courses included information literacy instruction was higher than the GPA of students whose courses did not; students exposed to library instruction interactions successfully completed 1.8 more credit hours per year than their counterparts who did not participate in courses containing information literacy instruction. (pp. 1-2)

I think the combination of these theories is the condition that leads to the student's academic success.

In summary, while my research does not directly focus on academic success, it is hypothesized that through observational learning and collaborative learning in educational social software use, and through the development of their information and media literacy skills, students develop their social and academic integration, which in turn leads to persistence and academic success.

## **6 Methodology**

In this chapter, I justify the choice of a qualitative methodology. I then present the method used and, more specifically, a case study, as well as the instruments chosen for that study. I also justify the choice of individual online interviews and social software group observations.

In the section on procedures, I describe the use of social software by teachers and students (individual tutoring, peer support and collaborative learning activities). Then I describe the methods and data-collection instruments used. I explain the treatment of the qualitative data, which is followed by a section on ethics and consent forms.

During the interviews, the participants were asked how they used software tools such as Facebook and QQ – and whether they used it for teaching and learning purposes. The interviews and after observations were about how the participants in the Facebook and QQ groups (online discussion groups) made use of that space. I observed the participants' social software groups' content.

## 6.1 Coherence table

This table shows the coherence of the research questions. These research questions were used to guide this investigation, namely:

**Table 3** *Coherence Table*

<b>General research question</b>	This study is an international research project. The general objective is to understand how students' and their teachers' use of social software promotes students' academic success.
<b>Specific research questions</b>	(1) How do teachers and their students use social software in the communication process with students in Canada vs. China, and how are these uses related to the students' social and academic integration processes? (2) How do teachers and their students use social software in their academic and social integration processes, in Canada vs. China? (3) How do teachers use social software for learning? How do teachers use social software to develop students' information literacy skills in the learning process?
<b>General objective</b>	The general objective is to understand how the use of social software promotes students' academic success.
<b>Specific objectives</b>	(1) To understand how teachers and their students use social software to support students' social and academic integration process in Canada vs. China. (2) To understand how teachers and their students use social software in students' learning processes in Canada vs. China. (3) To analyze the means by which teachers support their students in this process in Canada vs. China.
<b>Theoretical framework elements</b>	(1) Tinto's model of academic and social integration (2) Collaborative learning (3) Information literacy and media literacy
<b>Instruments</b>	Qualitative research, case study
<b>Indicators</b>	Semi-structured interviews and observations of social software groups
<b>Analytical method</b>	Qualitative data analysis and coding by Max QDA
<b>Compared data</b>	Compared two countries' data: student and teacher data and social software group data

## 6.2 Effectual type of research

Before engaging in research design, researchers should ask themselves at least four questions: 1) What questions to study, 2) What data are relevant, 3) What data to collect, and 4) How to analyze the results (Yin, 2009).

### **6.2.1 Qualitative research**

The purpose of this study is to explore the learning and teaching experiences of university teachers and undergraduate students using an exploratory case study design to understand their perspectives about using social software. I will use qualitative methods.

According to Yin (2004), the research questions should guide the choice of the methodology rather than the reverse.

Qualitative research is a descriptive study (Sandelowski, 2000). The collected data are presented by discourses and pictures, not as numerical data. When the researcher wants to consider every detail of the study, description is an important method of data collection. For example, qualitative researchers constantly question the participants to understand their experiences from their perspective. The problem addressed by social software research is complex, and using qualitative approaches by themselves is adequate to this complexity (Creswell, 2009, p. 203).

This study adopted a qualitative case study approach in order to reach a deeper understanding about how to use social software, who will participate in the study and the use social software. My intention in this study is to provide a comparative preview of how two countries' teachers and students use social software. Qualitative research best fits my epistemological orientation as an emerging researcher in my dissertation, and it is particularly apt for my research objectives.

### **6.2.2 Case study**

Before deciding to adopt a research method, there are three conditions that the researcher must consider (Yin, 2009, p. 8):

- (1) What is the type of question posed in the study?
- (2) How does the researcher control events as an investigator?
- (3) Are the focuses on contemporary or historical events?

Yin (2009) describes some of the relevant reasons for choosing a case study method:

A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context. A researcher uses the case study method because

the researcher wants to understand a real-life phenomenon in depth, but such understanding encompasses important contextual conditions because they are highly pertinent to the phenomenon of study. (p. 18)

Zainal (2007) defines the case study method as follows:

It enables a researcher to closely examine the data within a specific context. In most cases, a case study method selects a small geographical area or a very limited number of individuals as the subjects of study. Case studies, in their true essence, explore and investigate contemporary real-life phenomenon [sic] through detailed contextual analysis of a limited number of events or conditions, and their relationships. (p. 1)

In addition, a case study “provides descriptions of a case, a group, a situation, or an event” (Krathwohl, 2004, p. 26) and examines the details of a setting, subject, time, action or particular event (Merriam, 1991; Stake, 1995; Yin, 1994).

The reason I chose the case study method is that it is consistent with my research objectives (defined in Chapter 4). These have both substance and form (Yin, 2009, p. 10).

Considering the question “What is my study about,” the purpose of the study is to explore the learning and teaching experiences of undergraduate students and university teachers and understand their perspectives of using social software.

The secondary questions are “Who? What? Where? Why? How?” The answers are with Canadian and Chinese university teachers and students who use social software; I would like to know how social software promotes student academic and social integration (and, ultimately, academic success) in Canada and China and how the social software is used by them.

I believe there is a strong relationship between the context of the event and the subject and, thus, that the choice of the case study method is appropriate.

The case study method is one of the most frequently used qualitative research methodologies in educational research (Yazan, 2015). “As a related but important note, the case study method is not just a form of qualitative research, even though it may be recognized among the array of qualitative research choices” (Yin, 2009, p. 19).

My research is a comparative study between China and Canada; I hope that the result of the study will reach some universal significance, so, I chose a multi-case design method. Then, I selected two university teachers and three students from each country. I think this arrangement can help to dig deeper into the data and to understand patterns in different cultural contexts.

### **6.2.3 Data collection instrument: Interviews, observations and screenshots**

“We live in an era of dialogical culture, where the interview has attained a key role” (Kvale, 2006). Two British interview researchers, Atkinson and Silverman (1997), posed the question of why the interview and its narrative products have come to play a dominating role in social science research.

In qualitative interviews, researchers investigate a variety of human experiences. They attempt to understand the world from the subjects’ points of view and to unfold the meaning of their lived world. The interviews give voice to the common people, allowing them to freely present their life situations in their own words and open for a close personal interaction between the researchers and their subjects (Kvale, 2006).

Snelson (2016) argues that the most commonly used qualitative research approaches for social software involve collecting data from people through interviews and focusing on social software groups.

#### **6.2.3.1 Purposeful sampling**

“Purposeful sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources” (Patton, 2003, p. 2). This involves identifying and selecting individuals or groups of individuals who are especially knowledgeable about or experienced with a phenomenon of interest (Creswell, 2009).

Patton (1990) argues that choosing a small sample size for in-depth qualitative study in purposeful random sampling does not automatically mean that the sampling strategy should not be random. For many audiences, random sampling, even of small samples, will substantially increase the credibility of the results.

Yin believes that multiple-case designs may be better than single-case designs:

To begin with, even with two cases, you have the possibility of direct replication. Analytic conclusions independently arising from two cases, as with two experiments, will be more powerful than those coming from a single case alone. [...] because they offered contrasting situations, and you were not seeking a direct replication. In this design, if the subsequent findings support the hypothesized contrast, the results represent a strong start toward theoretical replication – again vastly strengthening your findings compared to those from a single case alone. (Yin, 2009, p. 61)

Yin also argues that the researchers will encounter the question of how many cases are deemed necessary or sufficient for study during the design of a multiple-case study:

For the number of literal replications, an appropriate analogy from statistics is the selection of the criterion for establishing the sample size desired to detect an “effect.” [...] Analogously, designating the number of replications depends upon the certainty you want to have about your multiple-case results [...]. If your theory is subtle or if you want a high degree of certainty, you may press for five, six, or more replications. [...] In short, the rationale for multiple-case designs derives directly from your understanding of literal and theoretical replications. The simplest multiple designs would be the selection of two or more cases that are believed to be literal replications [...]. More complicated multiple-case designs would likely result from the number and types of theoretical replication you might want to cover (Yin, 2009, pp. 58–59).

### **6.2.3.2 Online interview**

The question of how to do research in online spaces has been a recurring theme for collections and handbooks over the years as the Internet itself has developed. The web has been used extensively to reach research participants by both qualitative and quantitative researchers. Web-based surveys (Dillman & Smyth, 2007), for example, have become a much-valued resource, allowing flexible delivery to broad samples at relatively low costs and access to hard-to-reach populations. “Online interviewing and focus groups have become routine, both in asynchronous mode and in real time” (Roberts, 2006, p. 4).

Interviewing online can offer a safe space for the interviewer and participants as it helps avoid geographical distance, which in turn allows the interview to be conducted without geographical restrictions. Some qualitative researchers have used data from online discussion groups and forums, preferring to draw on this naturally occurring data to explore how participants formulate issues in their own words and for the low burden placed on participants. Digital data are a readily available resource for exploring social patterns on a large scale. Researchers have also extensively used ethnographic approaches to explore the specificities of the online cultural space. The development of participant observation techniques tailored to online spaces has entailed extensive reflection on what it means to be present in an online space and how ethnographers can plausibly represent themselves as people who are developing a robust knowledge of those who inhabit them (Roberts, 2006).

The first and most important consideration while collecting data from social software is to consider various platforms and their capabilities. With the development of Web 2.0, it would be impossible to give a comprehensive guide to every platform and program that the content analyst might like to study. But regardless of the social software or program, there are a number of questions that researchers should ask themselves before sampling, unitizing and acquiring content (Krippendorff, 2003).

### **6.2.3.3 Semi-structured interview**

The interview type I chose is semi-structured, also called semi-open interviews. In the semi-structured interview, the researchers get to control certain structures of the interview, but also allow interviewees to actively participate in the interview. Often, the researcher prepares a broad-brush interview outline and then asks the interviewees questions based on the research design. The interview outline serves as a reminder; the interviewees are also encouraged to ask questions during the interview (Yin, 2009).

### **6.2.3.4 Observation**

In addition to the online interview, observation can be an important complementary way of collecting sources in a case study. Because a case study should take place in the natural setting of the “case,” there is the opportunity for direct observations. Assuming that the phenomena of

interest are not purely historical, some relevant behaviours or environmental conditions will be available for observation. Such observations serve as yet another source of evidence in a case study. Formally, observational instruments can be developed as part of the case study protocol. Less formally, direct observations can be made throughout a field visit, including those occasions during which other evidences, such as interviews, are being collected (Yin, 2009).

### **6.2.3.5 Creation of screen capture images**

During the research, field notes are taken; the use of digital screenshots to record what was seen and observed is helpful to supplement traditional handwritten field notes. The types of digital screenshots taken include a participant's comment on a status update or photo or those that typify a cultural practice. The ethics of capturing visual data needs attention due to the privacy concerns of a participant's identity in photographs (Roberts, 2006). This was addressed by masquing any visual info permitting personal identification in any published material.

### **6.2.3.6 Summary**

With comprehensive consideration of the above aspects, it was determined that multiple-case designs, semi-structured online interview and observation of groups were appropriate for this study.

## **6.3 Procedure**

According to Miles and Huberman (1994) sourcebook of qualitative data analysis and Yin's (1994; 2004) case study research: design and methods and qualitative research from the very beginning to the end, this field research program in the case study draft focuses on the task of data collection, as follows:

- (1) The researcher contacted the main institutions of the Université de Montréal in Canada and Guangxi Normal University in China for participants. This study required eight undergraduate students registered for full-time study and four teachers working at the universities in China and Canada.
- (2) The researcher applied for an ethics certificate.



- (3) The researcher sent invitation letters, leaflets and notices, informed the institution directorates, transmitted information documents and obtained consent forms.
- (4) The researcher set the schedule of work and made arrangements to collect the data over a period (see next section 6.3.1: Main Steps Schedule of Research).
- (5) The researcher prepared enough investigative tools and started the investigation. The investigative tools included personal computers, notepads, paper and pens. The survey tools included online interviews and observations; the recording tools were video and audio recording devices and screen captures; and the recording tool was QuickTime Player.
- (6) The researcher set aside time to deal with emergencies, such as change of agenda, interviewee or thinking.
- (7) The researcher conducted data analysis after transcribing the interview content into text and encoding the text. The coding tool MAX QDA12 was used.
- (8) The researcher used charts, figures and tables to present information of case display.
- (9) The researcher explained the analysis results.
- (10) The researcher wrote the qualitative research report.
- (11) The researcher submitted the thesis.

### 6.3.1 Main steps – research schedule

In order to properly situate the articulation of the different research operations, Table 4 provides an overview of the main steps of implementation.

**Table 4** *Main steps – research schedule*

Operations	Timeline
1. The researcher selected universities and participants from Canada and China.	February 28, 2017
2. The researcher applied for an ethics certificate.	March 5 – April 15, 2017
3. The researcher sent invitation letters, leaflets and notices. Then, the researcher informed the institution directorates, transmitted the documents and obtained consent forms.	April 16 – August 31, 2017
4. The researcher set the work schedule.	April 16, 2017
5. The researcher started the investigation. Online interview of teachers and students in China and Canada. Group observation of students in China and Canada.	April 17 – August 31, 2017 April 17 – July 30, 2017 April 17 – June 15, 2017
6. The researcher set aside time to deal with emergencies.	May 30 – August 31, 2017
7. The researcher conducted the data analysis: transcription and encoding.	March 30, 2017
8. The researcher used charts, figures and tables to present the information of the case.	July 1 – July 31, 2017
9. The researcher explained and compared the analysis results.	August 1 – August 31, 2017
10. The researcher wrote the qualitative research report.	August 31, 2017
11. The researcher submitted the thesis.	March 2, 2018

## 6.4 Quality criteria for qualitative research

The criteria for judging the quality of the research design with four tests are the ones commonly used to establish the quality of any empirical social research: 1) Construct validity – identifying correct operational measures for the concepts being studied; 2) Interval validity – seeking to establish a causal relation (how and why event X leads to event Y), whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships; 3) External validity – defining the domain to which a study’s findings can be generalized; 4) Reliability – demonstrating that the operations of a study, such as data collection procedures, can be repeated with the same results (Yin, 2004).

Qualitative inquiry typically focuses in depth on relatively small samples, even single cases ( $n = 1$ ), selected *purposefully*. [...] The logic and power of probability sampling depends on selecting a truly random and statistically representative sample that will

permit confident generalization from the sample to a larger population. The purpose is generalization. The logic and power of purposeful sampling lies in selecting *information-rich cases* for study in depth. (Patton, 1990, p. 169)

Based on the above mode by Yin (2004) and Patton (1990), the criteria used for selection in my case study included the following:

- (1) Construct validity (using multiple sources of evidence): interviews, observations and screenshots.
- (2) Interval validity (building explanation to establish a causal relation): to understand how students' and their teachers' use of social software promotes the students' academic success.
- (3) External validity (using replication logic in multiple-case studies): four interviews with teachers and six interviews with students; observations of social software class groups.
- (4) Reliability (demonstrating that the operations of a study, such as data collection procedures): Using audio or video recording devices, taking the screenshots of the computer operation. Research sites: One university in each country.

Patton (1990) argues that when selecting a small sample of great diversity, the data collection and analysis will yield two kinds of findings:

- (1) high-quality, detailed descriptions of each case, which are useful for documenting uniqueness, and (2) important shared patterns that cut across cases and derive their significance from having emerged out of heterogeneity. The same strategy can be used within a single program in selecting individuals for study. By including individuals, the whom the evaluator determines have had quite different experiences, in the sample it is possible to more thoroughly describe the variation in the group and to understand variations in experiences while also investigating core elements and shared outcomes. The evaluator using a maximum variation sampling strategy would not be attempting to generalize findings to all people or all groups but would be looking for information that elucidates programmatic variation and significant common patterns within that variation. (p. 172)

According to Yin (2004), analysis hinges on linking the data to the propositions and explicating the criteria by which the findings are to be interpreted. This thesis reports what I learned from teacher and student uses of social software tools, such as Facebook and QQ, based on interviews and on observation of the Facebook and QQ groups from the two universities, one in Canada and the other in China. I chose the students and teachers from the two universities as the research subjects: the Université de Montréal and the Guangxi Teachers Education University.

## **6.5 Reasons for choosing these two universities**

The reasons for choosing these two universities are given below:

(1) Familiarity: I am a Ph.D. candidate in the Faculty of Education Sciences at the Université de Montréal and I was once a teacher at the School of Journalism and Communication in Guangxi Teachers Education University. I know some teachers and colleagues in both the universities and it is convenient for me to select interview participants. In addition, I understand how social software groups are used by teachers and students in both universities. This choice made it easier for me to substantiate the steps of investigation.

(2) Similarity of size: the number of enrolled students in these two universities is a factor that I considered. According to the numbers from the university's official website (<http://www.umontreal.ca/l-udem/en-chiffres/>), the Université de Montréal had about 45,000 full-time students in February 2018. The Guangxi Teachers Education University website shows that there were 37,231 students in 2017 (<http://gxte.edu.cn/xygk/xyjj.html>). Although these two universities do not have exactly the same number of students, they are roughly the same size; hence, they derive their significance from having emerged out of heterogeneity in a small sample, namely, programmatic variation and significant common patterns within that variation.

## **6.6 Faculty and participant choice criteria**

The participants in the full study include six undergraduate students and four teachers in the Faculty of Education at the Canadian and the Chinese universities. Half the participants are located in Canada and the other half are located in China. If the participants come from different departments or faculties in the university, the data become complex and non-contrasting. In

order to obtain comparative and available data, this study chose only teachers and students who worked and studied at the Faculty of Education.

University teachers and students comprise the largest segment of users of social technologies in China and Canada and are more likely to engage in higher levels of social software usage, e.g., Facebook and Twitter in Canada or QQ and Sina Weibo in China. Therefore, the participants must be very familiar with these social software features and spend more time using them. To obtain knowledge and communicate with others, both male and female participants were accepted.

(1) The student participants must be undergraduates in the Faculty of Education at the universities.

(2) The teacher participants must work at the Faculty of Education at the universities.

(3) The participants must be familiar with these social software features and spend time on them regularly (Facebook and Twitter in Canada or QQ and Sina Weibo in China). Here, the criterion is that the participants' social software usage time should be at least more than three hours per week; the participants' operation of social software would be taken as screenshots in the interview for observation by the researcher.

The researcher recruited participants from these two universities from April 1, 2017, to August 1, 2017, after having obtained a certificate of ethics from the Université de Montréal.

In China, the researcher contacted student associations of the Guangxi Teachers Education University to look for eligible students. In addition, the researcher either posted flyers on the university's billboards or sent flyers to advertise for qualified and interested teachers and students on the occasion of special activities (see Appendix: A Flyer for Academic Paper Interview) – for example, at the university graduation ceremony, the Chinese Valentine's Day party or some reading activities, etc. The interview advertisement is added as Appendix G Academic Paper Interview Advertisement.

As for the Montreal participants, the researcher sought assistance from the university student associations and one of the departments in the Education Faculty at the Université de Montréal.

After obtaining a certificate of ethics from the Université de Montréal, the researcher posted flyers on the university's billboards and emailed flyers to student associations and the Faculty of Education. People who were willing to participate in this interview could get the

researcher's contact information from the flyer; they could contact the research via QQ, Skype, email or telephone. Then the researcher sent the consent form by mail to the participants and asked for their signature.

## **6.7 Social software groups observations**

For the observation of class QQ group and Facebook group in Nanning, China:

First, during the last minutes of the online interview with the teacher interviewee, the researcher asked the teacher whether he or she had a class QQ group with their students and whether he or she was willing to be observed.

Second, after obtaining the consent of the dean or the admin of the QQ group to enter the group (see Appendix G: Request Letter for Authorization from the Professor for Observation of the Concerned QQ Class Group of the Guangxi Teachers Education University), the researcher applied to join this QQ group.

Then the researcher posted a notice on the group's bulletin board (see Appendix B: Notice for Observation of the Concerned Facebook Group of the Université de Montréal and the QQ Group of the Guangxi Teachers Education University).

The students who were willing to be observed could contact the researcher, and then the researcher would send the informed consent form to the observed group members (see Appendix E: Information and Consent Form for Social Software Members' Observation).

For those students who were not willing to be observed, their chatting content, interaction with other members, shared the documents and the other activities in the group were not recorded or used.

For observation of the Facebook groups in Montreal:

First, during the last minutes of the online interview with the teacher interviewee, the researcher asked the teacher whether he or she had a Facebook group with their students and whether he or she was willing to let the researcher observe it.

Second, after obtaining consent of the head of the department or the owner of the Facebook group to enter this group, the researcher applied to join the Facebook group.

Then the researcher posted a notice on the group's bulletin board (see Appendix B: Notice for Observation of the Concerned Facebook Group of the Université de Montréal and QQ Group of the Guangxi Teachers Education University).

The students who were willing to be observed could contact the researcher. The researcher would then send the consent form to the observed group members (see Appendix E: Information and Consent Form for Social Software Members' Observation).

For those students who were not willing to be observed, their chatting content, interaction with other members, shared documents and other activities in the group were not recorded or used.

Because the request letter for authorization from the head of the concerned departments at the Université de Montréal (see: Appendix H) has been referred to observe the Facebook groups, the observation of the group here did not require additional signatures, and the researcher had to obtain only the teachers' permission via email.

## **6.8 Methods and instruments for data collection**

The research data for this study were collected using semi-structured interviews with teachers and students and through observation of social software groups.

The case study is different from other research methods as its evidence can come from a diversity of sources: documents, archival records, interviews, direct observation, participant observation and physical artifacts. The researchers should follow these three general principles: using multiple sources of evidence, creating a case study database, maintaining a chain of evidence (Yin, 2009, pp.109-110).

The two sources of data the researcher selected are:

Online interview: The researcher asked the interviewees about facts as well as their opinions about events. In some situations, the researcher even asked the interviewee to offer his or her own insights into certain occurrences (Yin, 2009).

Direct observation: Because a case study should take place in the natural setting of the "case," the researcher used the opportunity for direct observation. Formally, observational instruments could be developed as part of the case study protocol (Yin, 2009).

### **6.8.1 Online interview**

Semi-structured interview questions were designed to ask the research participants about their perspectives and attitudes toward using social software for learning purposes. Two teacher participants from each country group were invited to participate in the interview. The interviews were conducted in Chinese for the Chinese participants and in English for the Canadians; the conversations, as well as the researchers' notes, were recorded with a digital voice and video recorder.

Before the interviews, the researcher explained the research to the participants via an email sent between April 30, 2017, and August 1, 2017. In this email, the researcher explained the research topic and presented the different parts of the interview and its expected duration. Since this research is on social software use, a section of the interview covered demographic information, including age, nationality, occupation, university name and undergraduate level, as well as the years of using social software.

Interviews ranged in length up to 45 minutes. The interviews were conducted face-to-face or using online social software tools such as Skype or QQ.

Prior to each interview, the researcher reviewed with each participant the purpose of the study and the data collection process and presented the conditions of participation so that participants could give informed consent. The participants were asked to submit their completed consent form (see Appendix C: Information and Consent Form for Teacher's Interview) then. The researcher also explained that initials would be used during the entire research process in order to keep the participant's identity anonymous.

The interviews were individual interviews. All the interviews were recorded with a specialized software and later transcribed (and translated) to text by the researcher, before commencing the data analysis. The participants' use of social software was recorded by screenshots during the interviews, which were used to analyze how they used the social software.

In the observation process, screenshots were also taken of some elements of the social software groups: shared folders, bulletin board content and other group content. The student interactions with other members, activities and dialogues were also documented and used as data for analysis.



### **6.8.1.1 Letter for interview invitation, consent form and request letter for authorization**

With the gradual progress of the qualitative interview, the relationship between the researcher and the interviewee became deeper. Ethics is an important part of the methodology. If the researcher crosses the concept of interview dialogue, a series of ethical issues will appear regarding taking private conversations for public use. On a micro level, this will cause the relationship between the interviewer and the interviewee to become strained; the interviewer is both a participant and an observer in an interview. On the surface, the egalitarian concept may be covered by the conflict of interest between the interviewer and the interviewee (Kvale, 2006). Confidentiality and privacy issues are at the core of this; so the consent form is taken as a form of constraint for the research interview and protects the rights of both the interviewer and the interviewee.

The participants were interviewed online directly by the researcher. The researcher prepared the following documents for the interviews:

(1) A letter briefly explaining the research (see the Appendix A: Flyer for Academic Paper Interviews). This flyer specified the objectives of the research and its methodology and indicated that they could withdraw from the research with a simple written notice.

(2) A consent form about the confidentiality of the work, to ensure that the information used, including video, audio and picture files taken during interviews, remains confidential (see the Appendix C: Information and Consent Form for Teacher's Interview and the Appendix D: Information and Consent Form for Student's Interview).

(3) Letters requesting authorization for this research (see the Appendix F: Request Letter for Authorization from the Deans at Concerned Departments of the Guangxi Teachers Education University and the Appendix H: Request Letter for Authorization from the Professor for the Observation of Concerned the Facebook Class Group of the Université de Montréal); the researcher needed to have access to both the universities.

### 6.8.1.2 Teachers' interviews

The teachers' interviews were conducted as a means of understanding the teachers' perspective on how they used social software for teaching and how media literacy was integrated and applied in daily teaching activities. The purpose of the teachers' interviews was to provide a third-person perspective on how social software is used and applied in daily educational interventions. It is useful to identify the teacher's perspective on instructional practices. In these interviews, the teachers had an opportunity to identify the learning objectives or teaching goals that inspired their instructional choices, comment on the efficacy of particular instructional practices and share their perceptions of how students understand and apply key media literacy concepts.

For the interview questions for teachers, see Appendix J: Teacher Interview Questions.

### 6.8.1.3 Variables of online interviews and collection instruments

This table shows the data collection tools used in connection with the main variables of the research (for details, see Appendix J: Teachers Interview Questions and Appendix K: Students Interview Questions).

**Table 5** *Data collection tools used for the different variables of the online interview research*

<b>Research Objective</b>	Semi-structured interviews Video recording (in each country) for <b>teachers</b>
Number of people	Four
(1) Understand how students and their teachers use social software.	Please show me how you use social software for any form of contact with students affiliated with your university.
(2) Define and explain the uses of social software.	How do you define social software? Which social software do you use frequently and how do you use it?

(3) Describe social software use to support the students' social and academic integration process. (Tinto)	How do you use social software in the communication process with students?
(4) Describe social software use in collaborative learning.	How do you use social software in your teaching activities? How do you ask students to use it?
(5) Define media literacy.	How do you define media literacy?
(6) Evaluate whether media literacy is developed in the process of using social software.	How do you promote the students' development of their own reflection and critical thinking skills in the process of using social software?

The qualitative data collected from individual interviews were used to expand the depth and breadth of the responses. The data collection methods were developed for individual focus interviews to gain in-depth data to understand whether and how participants use social software for learning and teaching.

All the online interviews were recorded with the software QuickTime Player and were later transcribed (and translated) to text by the researcher before commencing the data analysis. Screenshots of the participants' actions in social software environments were taken and used to analyze social software uses.

In accordance with the nature of semi-structured interviews, the online interviewers used a guided approach to start each interview or discussion topic and allowed the participants to express their views (Gall, Gall & Borg, 2006).

#### **6.8.1.4 Observations**

On the one hand, the researcher collected interview data. On the other hand, besides the interview, the researcher also annotated qualitative data to describe the events that occurred during the observation. The observations pertained to the participants' uses of social software for teaching or learning. The researcher recorded how the participants used social software – for example, participants' conversations or uploaded files on their Facebook groups and QQ class groups.

#### **6.8.1.5 Letter and document for observation**

The researcher prepared the following documents for conducting observations:

(1) Letter to the teacher who organized the QQ class group for observation of the group members' activities (see the Appendix G: Request Letter for Authorization from the Professor for the Observation of Concerned the QQ Class Group of the Guangxi Teachers Education University).

(2) Announcement to the Facebook group for observation of Facebook group members' activities (see the Appendix H: Request Letter for Authorization from the Professor for the Observation of Concerned the Facebook Class Group of the Université de Montréal).

The observation of student's social software groups provided an opportunity to know how students interacted with each other in their using of social software. These group chats and other activities were recorded and screen captured during the observation process.

### 6.8.1.6 The observation guide

The observation guide is as follows:

**Table 6** *Data collection tools used for the different variables of the social software group observation*

Research Variables	Observation of <b>teachers</b> in social software groups	Observation of <b>students</b> in social software groups	Data collection instruments arrangement
Number of people	Based on members of the group	Based on members of the group	
1. To understand how students and their teachers use social software to support the students' social and academic integration process in Canada vs. China. (Tinto)	<p>How do teachers use Facebook or QQ groups to communicate with their students?</p> <p>To observe:</p> <ul style="list-style-type: none"> <li>-If teachers are members of the Facebook or QQ groups.</li> <li>-If teachers chat or video chat with students on Facebook or QQ groups.</li> <li>-If teachers leave comments on Facebook or QQ groups.</li> <li>-If teachers invite students to join class discussions through Facebook or QQ groups.</li> </ul> <p>Etc.</p>	<p>How do students use Facebook or QQ groups to communicate with their teachers and other students?</p> <p>To observe:</p> <ul style="list-style-type: none"> <li>-If students are members of the Facebook or QQ groups.</li> <li>-If students chat or video chat with others students on Facebook or QQ groups.</li> <li>-If students discuss matters outside of academics on Facebook group or QQ group.</li> </ul> <p>How do students use Facebook or QQ groups when collaborating with other students?</p> <p>To observe:</p> <ul style="list-style-type: none"> <li>-If students like to use nicknames on Facebook or QQ groups.</li> </ul>	Record by text and create screen capture images

		<p>-If students share the latest updates of class activities on Facebook or QQ groups.</p> <p>-If students conduct class discussions through Facebook or QQ groups.</p> <p>Etc.</p>	
<p>2. To understand how students and their teachers use social software in the students' learning processes in Canada vs. China. (Bandura).</p>	<p>How do teachers use Facebook or QQ groups for teaching purposes?</p> <p>To observe:</p> <p>-If teachers create Facebook or QQ groups accounts for special interest projects.</p> <p>-If teachers propose reading lists on Facebook or QQ groups.</p> <p>-If teachers demonstrate excellent student work or new information in their field of research on Facebook or QQ groups.</p> <p>-If teachers use Facebook or QQ groups to get feedback for students' homework.</p> <p>-If teachers share student learning with the other students on Facebook or QQ groups.</p> <p>-If teachers provide students Virtual Classroom course by live video through Facebook or QQ groups.</p> <p>Etc.</p>	<p>How do students use Facebook or QQ groups for learning purposes?</p> <p>To observe:</p> <p>-If students create Facebook or QQ groups accounts for special interest learning projects.</p> <p>-If students like to share, receive and send files on Facebook or QQ groups.</p> <p>Etc.</p>	<p>Record by text and create screen capture images</p>
<p>3. To analyze the means deployed by students in order to evaluate the information literacy on social software and to intervene in social software and how their teachers support them in this process in Canada vs. China. (Information literacy)</p>	<p>How do teachers encourage students to develop their reflection and critical thinking skills in the process of using social software?</p> <p>To observe:</p> <p>-If teachers teach students to decide what to keep, what to discard, whom to trust, what is credible and why and when students should use Facebook or QQ groups.</p>	<p>Evaluate the following by nine fundamental critical thinking skills:</p> <p>(1) How do students identify the elements in a reasoned case, especially the reasons and conclusions on social software?</p> <p>(2) How do students identify and evaluate assumptions on social software?</p> <p>(3) How do students clarify and interpret expressions and ideas on social software?</p> <p>(4) How do students judge the acceptability, especially the credibility of claims, on social software?</p> <p>(5) How do students evaluate arguments of different kinds on social software?</p> <p>(6) How do students analyze, evaluate and produce explanations on social software?</p> <p>(7). How do students analyze, evaluate and make decisions on social software?</p>	<p>Record by text and create screen capture images</p>

		8. How do students draw inferences on social software? 9. How do students produce arguments on social software?	
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### 6.8.2 Special educational status: Chinese class QQ group

As mentioned previously in Chapter 2, the Chinese class QQ group is different from the Facebook group of students. Each QQ group was created by a student from the target university, who invited other students and professors of their cohort to join, so they could share resources and have discussions on topics related to the participants’ programs of study. These online spaces are considered communities of practice, where members “share a passion for something they know how to do and who interact regularly to learn how to do it better” (Wenger, 1998). Communications in the online groups are mostly text based, but audio and video communications are also used from time to time. Mandarin was used for the Chinese participants’ interviews. In a QQ class group, a member can post a text message, upload a voice message for the whole group or share a file with all the members. They can also choose to have a private communication with one or more members without others’ knowledge. Observation was designed for all the communications that take place in the QQ group space; mostly, the archives of text messages are posted in the space, with the aim of obtaining a holistic picture that can illustrate aspects of communication among the members of each group and between the students and the researchers, including the frequency of postings, topics of communication and emerging patterns of communication (Zhang & Xue, 2015).

### 6.8.3 Creation of screen capture images

The researcher had to obtain consent for all the captured visual data to be used for academic purposes (see Appendix G: Request Letter for Authorization from the Professor for the Observation of the Concerned QQ Class Group of the Guangxi Teachers Education University and Appendix B: Notice for Observation of the Concerned Facebook Group of the Université de Montréal and the QQ Group of the Guangxi Teachers Education University). The visual nature of these notes offers a richer view of the practice than the written notes alone. These screen capture images can also be used later to work up to fuller written notes. This digital

nature of recording field notes was used along with traditional note-taking on paper. In this manner, the digital method supplemented the more traditional ethnographic practices.

During the online interviews and observations, the participants' shared the bulletin board content, and the other contents in the group were taken as screen capture images by the researcher. The interactions between student members and teachers, such as activities and dialogues, will be documented and used as the data for analysis (for observation details, see Tables 5: Data collection tools used for the different variables of the online interview research and Table 6: Data collection tools used for the different variables of the social software group observation and Appendix L: Observation of Social Software Group Guide).

During the online interviews in Canada and China, the participants were asked to share their computer screen with the researcher on Skype and QQ. The steps for this were as follows:

- (1) The researcher started a video call with the participant.
- (2) During the call, the researcher asked the participant to use the "screen sharing" drop-down menu to choose what to share.
- (3) When the researcher finished the screen captures, the participant selected "stop sharing."

#### **6.8.4 Data retention**

The researcher made at least two copies of all the important data files, and these files were then saved to a mobile hard disk and on the Internet cloud drive.

This personal information will be destroyed seven years after the end of the project, in December 2024. All types of data (audio, video recordings and screen capture images) will be kept for the same period.

### **6.9 Qualitative data analysis and treatments**

In this section, the researcher describes the methods used for the treatment and analysis of qualitative data. These methods are essentially based on the recommendations of Miles and Huberman (1994) and Creswell (2009).

In multiple cases, the meaning of what is happening in each case tends increasingly to get lost in the welter of fieldwork, write-ups, coding and other preliminary analyses (Miles & Huberman, 1994).

Creswell (2009, pp. 185-189) suggests the following qualitative data analysis research steps:

Step 1. Organize and prepare the data for analysis. This involves transcribing interviews, optically scanning material, typing up field notes, or sorting and arranging the data into different types depending on the sources of information.

Step 2. Read through all the data [...]. Sometimes qualitative researchers write notes in margins or start recording general thoughts about the data at this stage.

Step 3. Begin detailed analysis with a coding process. Coding is the process of organizing the material into chunks or segments of text before bringing meaning to information [...].

Step 4. [...] Use the coding process to generate a description of the setting or people as well as categories or themes for analysis. Description involves a detailed rendering of information about people, places, or events in a setting. [...]

Step 5. [...] Advance how the description and themes will be *represented* in the qualitative narrative. The most popular approach is to use a narrative passage to convey the finding of the analysis. [...]

Step 6: A final step is data analysis involves making an interpretation or meaning of the data. Asking, “What were the lessons learned?” captures the essence of this idea. [...]

### **6.9.1 Analysis and treatments of interview data**

Today’s researcher is likely to store data electronically. Beyond storage and organization, computer software tools are helpful for indexing and sorting large amounts of data.

The researcher selected six students and four teachers from both countries as interview subjects. The interviews involved interviewees from China and Canada. The researcher analyzed the relationship between students and teachers in social software uses for learning and



teaching, compared the different usage patterns represented by the subjects and identified their purpose for using social software in the academic context.

This thesis focuses on qualitative data, and the researcher concentrated on the participants' speech and behaviour with an intention to provide an overall landscape of investigation. Secondly, the researcher applied open coding in order to generate a preliminary thematic analysis. Some simple quantitative data analysis was also executed, such as creating frequency tables and bar charts with Microsoft Excel and MAX QDA. These figures were used to draw a concept map that presents relationships that existed among certain variables (Creswell, 2009).

Audio and video recordings of the interviews were transcribed and translated into English by the researcher and the hand-written notes were word processed for easy reading (Zhang & Xue, 2015). The researcher encountered and encoded all the material to become familiar with it and begin identifying the units of meaning, initially adopting a coding approach to remain close to the speech of the interviewees.

Following Creswell's (2009) recommendations, as well as those of Miles and Huberman (1994), the researcher performed manual coding using the MAX QDA qualitative data analysis software. Next, the researcher independently coded the whole of the material into categories derived from the theoretical framework. Then, the researcher drew up a list of categories and definitions, bringing the emerging categories as close as possible to those that stemmed from the theoretical framework. Then, the researcher compared the most important categories. Subsequently, the theoretical coding stage was finalized by hierarchizing the list of codes together, adding the emerging codes and reviewing the definition from the set of Miles and Huberman (1994). Finally, using the final list of categories, the researcher coded all the material related to these abandoned cases. Then, the researcher repeated these steps for the other interviews.

### **6.9.1.1 Interview data qualitative coding**

Content analysis is a research technique used to determine the presence of certain words or information within texts or sets of sources. It involves the classification of textual, video or audio data. The researcher reads the assigned sources and codes for the variables according to

the coding scheme in the codebook, entering the answers on an Excel form. The goal is that all codes of the same content become the same value.

Coding is the process of organizing and sorting research data. Codes are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study (Miles & Huberman, 1994).

There are three simple steps in coding (Biddix, 2009): The first level of coding is open coding. The researcher is looking for distinct concepts and categories in the data, which will form the basic units of the analysis. Usually, the researcher will break down the data into first level concepts, or master headings. The second level is axial coding. The researcher often uses highlights to distinguish concepts and categories. In open coding, the researcher focuses primarily on the text to define concepts and categories. In axial coding, the researcher uses his concepts and categories while re-reading the text to: 1. Confirm that the concepts and categories accurately represent interview responses, and 2. Explore how the concepts and categories are related. The third level is creating a table. The final concepts and categories are transferred into a data table.

Miles and Huberman (1994) argue that coding is analysis; the codes are labels which are units of meaning. The important information is not the words themselves but their meaning. There are three types of codes: descriptive codes, interpretive codes, and pattern codes.

The coding process outlined by Miles and Huberman (1994) is as follows:

- (1) Creating codes. “A second main coding alternative, partway between the a priori and inductive approaches is that of creating a general accounting scheme for codes that is not content specific, but points to the general domains in which codes can be developed inductively.” (p. 61)
- (2) Revising codes. “For all approaches to coding – predefined, accounting-scheme guided, or postdefined – codes will change and develop as field experience continues.” (p. 61)
- (3) The importance of structure. “Whether codes are created and revised early or late is basically less important than whether they have some conceptual and structural cord.” (p. 62)

- (4) Definition of codes. “Whether codes are prespecified or developed along the way, clear operational definitions are indispensable.” (p. 63)
- (5) Check coding. “Check-coding not only aids definitional clarity but also is a good reliability check.” (p. 64)
- (6) Levels of detail. “A good case can be made for multiple-coding segments with both a descriptive and inferential code; these are legitimately two necessary levels of analysis.” (p. 65)
- (7) When to code. “One simple rule of thumb here: Always code the previous set of field notes before the next trip to the site.” (p. 65)

Based on Miles and Huberman’s process (1994), at first, I made a codification grid as follows: the researcher modified, conducted and summarized these codes after the coding work was over.

In Table 7, the abbreviation “SS” stands for “social software,” the letter “S” represents “students” and the letter “T” represents “teachers.”

**Table 7** *Codification grid*

My code system			
	Basic information on social software use -Teacher vs. student		
		Identity	
			Real name and avatar
			Years of SS use
		Definition of social software	
			SS used
		Reasons for use	
			Use trend of SS
		Knowledge and skills	
			App on smartphone & computer
			Note friends’ names or avatars
			Manner of SS use

			Understands the SS functions well
			Communication through SS is official
			Uses video function on SS
			Uses with cloud storage Google drive or Bai Du Yun
	Q1: Use SS for students' social and academic progress-Tinto		
		FB+SK VS QQ + WeChat	
		Engagement FB+SK VS QQ +WeChat:	
		Socializing outside university:	
			Strangers
			Family +Friends
		Communication	
			Student to teacher (one to one )
			Student to student (one to one)
			Student to all
			Teacher to single student
			Teacher to all
		Support from social integration: FB+SK VS QQ +WeChat	
			Number of friends you have
			Freshman interest groups
			Cooperative or collaborative learning activities
			Peer interaction
			Participation outside program activities in the university
			Socialization outside university / friends
			Whether you have groups of friends
			Participation in the group's management
			Interactions with other members of the university
		Learning materials	
		WeiBo /Twitter	
		Social software to communicate: WeiBo/Twitter	

				Publication information
			Social integration (students): WeiBo/Twitter	
				Search information or look for news
			Support from academic integration: WeiBo/Twitter	
				Social software for learning in courses
				Interaction with the group of program peers
				Interaction with the teacher's group
		Messages (email, Studium or other)		
		Other social software used		
	Q2: S & T used social software in students' learning			
		Facebook vs QQ: Social software groups for learning in courses		
			Interaction between students and environment	
				SS group type and numbers
				Post or comment on SS
			Interaction between teacher and students in groups	
				Teacher collaborates with students
				Teacher explains to students
				Teacher evaluates the student's learning
				Teacher gives guidance
				Teacher masters the progress of the students
				Teacher gives help or support
				Teacher discusses the questions with students
			Interaction between students on groups	
				Students help each other
				Class manager
				Students discuss
				Students share and transfer documents with group members
				Students collaborates with peers
			Interaction between students and learning content	

				Teacher shares and transfers documents with group members
				Teacher gives feedback to students
			Self-efficacy	
			Self-esteem	
	Q3: Students & teachers use SS to develop students' information literacy			
		Student's skill in information literacy for learning		
			Student's use of various search ways to retrieve information	
			Student articulates and criticizes the information and sources	
		Teachers encourage students to develop information literacy		
		Teachers instruct students to filter the online information		
		New information access model		

The structure of the table is based on the theoretical framework in the previous chapters. Some codes were discarded because their frequency of occurrence was too low; some codes were new because the theoretical framework did not cover the unanticipated. Afterward, a colleague and I coded consensually two interview transcripts together. We then compared the codes and tested the reliability of codes. My coding was generally made in the paragraphs of the written field notes. Some field notes have ambiguous boundaries, so there are overlapping parts in the code. Due to changes in the timing of certain interviews, I was not able to code the interview immediately after each interview.

### **6.9.1.2 Analysis and treatments of observation data**

To gain permission from the software groups to conduct the study, the researcher brought letters of introduction to ease entry (Kawulich, 2005) (See Appendix B: Notice for Observation of the Concerned Facebook Group of the Université de Montréal and the QQ Group of the Guangxi Teachers Education University).

Merriam (1991) provides an observation guide, in which she collects various elements to be recorded in the field notes. Based on Merriam's guide, at first, the researcher observed the surroundings of the setting and provided a written description of the observed environment. Next, the researcher described the status of the participants. Then, the researcher noted their

behaviour in the setting. The researcher also looked at the frequency and duration of those activities, interactions and other subtle factors, such as informal, unplanned activities, symbolic meanings, nonverbal communication, physical cues and what should happen that had not happened.

Angrosino (2005) suggests using a structured observation process to maximize the efficiency of the field experience to reduce the researcher's subjective prejudice and facilitate replication or verification by other researchers, all of which makes the findings more objective.

## **7 Overview of Research Questions and Instruments**

The results section focuses on the presentation of the results according to each of the research objectives:

(1) To understand how teachers and their students use social software to support students' social and academic integration process in Canada and China (Tinto).

(2) To understand how students and their teachers use social software in students' learning processes in Canada and China.

(3) To analyze how teachers support their students' information literacy in the learning process in Canada and China.

The research method is designed in three parts related to the three research questions; the participants are asked these three questions in the interviews, but the observations are different for the research questions.

For the first research question, I observed students' social software class groups.

For the second research question, I observed teachers' social software course groups.

For the third research question, I just interviewed students and teachers; I did not observe social software groups.

The table of methods is as follows:

**Table 8** *Research instruments for three research questions*

Research question	Methods	Participants
RQ1: How do students use social software in the communication process in Canada and China?  And how are these uses related to the students' social and academic integration processes? (Tinto).	<b>Interviews</b> of students and teachers	6 students, 4 teachers
	<b>Observations</b> of students' social software class groups.	Members of social software groups
RQ2: How do teachers and their students use social software group to promote students' learning in Canada and China?	<b>Interviews</b> of students and teachers.	6 students, 4 teachers
	<b>Observations</b> of teachers' social software course and class groups.	Members of social software groups
RQ3: How do teachers use social software to develop students' information literacy skills in the learning process?	<b>Interviews</b> of students and teachers.	6 students, 4 teachers

There were corresponding interviews and observations for each research question.

**Table 9** *Total number of participants involved in this study investigation*

	Canada	China
Student interviews	3	3
Teacher interviews	2	2
Members of class groups	39 (one Facebook class group)	46 (one QQ class group)
Members of course groups	67 (two Facebook course groups)	121 (one QQ course group)

The number of students interviewed was six; the number of teachers interviewed was four. The number of Facebook class group observed was thirty-nine; the number of the QQ class group observed was forty-six; the number of Facebook course groups observed was sixty-seven and the number of QQ course group observed was one hundred and twenty-one.



## **8 Results: First Research Question**

The first research question was: How do teachers and their students use social software in the communication related to the students' social and academic integration processes?

### **8.1 Context**

Tinto's model reflects social and academic integration at the institutional level, but these processes actually take place largely with classmates, both in class and outside classes. Therefore, for addressing the first research question in this study, the analysis of the interviews and social software uses is based on the class groups, which are at the appropriate level for data collection and analysis.

The first research objective is to explore how students use social software in communication processes in Canada and China and how these are related to the students' social and academic integration processes.

### **8.2 Methodology**

The method used for this objective consisted of interviewing four teachers and six students: two Canadian teachers and three Canadian students; two Chinese teachers and three Chinese students. Their use of social software in the social software class groups was also observed.

#### **8.2.1 Case selection**

Case studies are often used in educational research as a means to evaluate a program, a course or some aspects of an educational intervention (Merriam, 1991). To determine which data need to be collected for the research, the researcher needs to first select the appropriate cases of the phenomenon (Yin, 2009). A case study may consist of one or a small number of cases that are studied in depth (Creswell, 2009), driven by the questions and problems addressed by the study.

This research contrasts two cases studies in two different contexts, one Canadian and one Chinese. This is relevant to the research questions:

(1) How do teachers and their students use social software in the communication process in Canada and China?

(2) How are these uses related to the students' social and academic integration processes?

As was noted above, to better understand teachers' and students' social software uses and experiences, it is necessary to try to see this phenomenon from the perspective of teachers and students, both in Canada and China. Therefore, a multiple case approach was retained.

To have similar cases, the researcher selected participants at the Department of Education at one university in each country.

The teacher interviews included material relevant to the question of the students' social and academic integration. The observation of the teachers' PPA4111 Facebook course group and 2015 educational technology QQ class is relevant to the students' social and academic integration.

## **8.2.2 Interview participants and observations**

Six students and four teachers agreed to be interviewed, half Canadians and half Chinese.

### **8.2.2.1 Interviews of the Canadian participants**

The first Canadian teacher interviews took place with two Canadian teachers who were in charge of the undergraduate courses in the Department of Psychopedagogy and Andragogy, Faculty of Education at the Université de Montréal. The code name of the teacher who taught the course PPA4111 ICT Integration 3 is TCA1; the code name of the other teacher, who taught the course PPA2100T ICT Integration, is TCA2 in this study.

The Canadian student interviews took place with three Canadian students who were registered in the course PPA2100T ICT Integration in the winter session of 2016; their code names are SCA1, SCA2 and SCA3.

### **8.2.2.2 Observations for the Canadian participants**

After the interview, their Facebook use was observed to review their online activities. The observed participants' interactions, activities and dialogues were documented and used as

data for analysis. Screen captures were taken while they were using social software to communicate with each other.

### **8.2.2.3 Interviews of the Chinese participants**

The first part of the Chinese interview was with two teachers who are in charge of the undergraduate courses in the Guangxi Teachers Education University. The teacher who taught Multimedia Courseware in the College of Vocational and Technical Education is code-named in this study as Participant TCH1; the other teacher, who taught Modern Educational Technology as the Faculty of Educational Technology at the College of Computer and Information Engineering, is code-named as Participant TCH2.

The second part of the Chinese interview was with three students, who took the Multimedia Courseware Design and Production course during the spring session of 2017 and are code-named in this study as SCH1, SCH2 and SCH3.

### **8.2.2.4 Observations of the Chinese participants**

After the interview, I also observed their QQ use to review their online activities. The observed interactions, activities and dialogues were documented and used as data for the analysis. I took screen captures while they were using social software to communicate with each other.

## **8.3 The role of course**

The three Canadian students studied in the Teacher Education program at the Université de Montréal with French as a Second Language as a specialization. They were registered in the same required course, PPA2111 Information and Communications Technology Integration, which is mandatory in the Early Childhood Education and Primary Education program (1-820-1-0), also offered at Campus Laval (1-820-1-9). In this course, future teachers learn to plan a preschool learning situation that involves ICT. They have to document and interpret the preschool ICT integration context.

The three Chinese students were registered in the Educational technology program in the Guangxi Teachers Education University. They all studied the same required course, Multimedia

Courseware Design and Production. This course is part of the following programs; undergraduate programs in educational technology; the use of pedagogy; psychology and computer, multimedia and network technology theory; multimedia methods, techniques, designs and productions.

## 8.4 Instruments

This research is mainly based on ten 45-minute semi-structured interviews and the observation of social software groups. During the interviews, the students and teachers were asked about their experience with and use of social software groups, focusing on the factors that influenced their motivation and behaviours from the moment they joined the course.

Describing the stage of data collection, Yin (2009) stated that:

One of the most important sources of case study information is the interview. [...] A type of case study interview is a focused interview, one hour for example, in which a person is interviewed for a short period of time. In such cases, the interviews may still remain open-ended and assume a conversational manner. (pp. 106–107)

However, the researcher can follow a certain set of questions from the case study protocol.

The first research questions were:

1. How do teachers and their students use social software in the communication process in Canada and China?
2. How are these uses related to the students' social and academic integration processes?

Questions based on the background of technology use and supplemental items related to features of social software use were asked. The interview questions for the first research questions were divided into two parts.

The first part was based on open-ended questions in order to understand the basic uses of social software adopted by the participants:

- (1) How do you define social software?
- (2) How do you use social software?

- (3) Who do you communicate with via social software and why?
- (4) Are there people you do not communicate with in your contacts list and why?
- (5) Do you use a real name and real avatar on social software? Why?
- (6) What content do you usually post on social software?
- (7) What feedback do you provide when your students update their status?
- (8) Besides the above-mentioned social software, do you also use other social software?

The second part of the open-ended questions aimed to understand how students and their teachers use social software to support students' social and academic integration process:

- (1) How do you use social software when you communicate with your students?
- (2) Do you create or have some groups on the social software and know how to use it?

Data for this study was collected through manual data crawling (Wilson, Gosling & Graham, 2012).

## **8.5 Data collection and analysis**

All interviews were recorded and transcribed. Initially, they were coded manually, and the coding was moved to the MAX QDA software to analyze the interview data. I used a coding grid to code all the corpus with the MAX QDA software. In the creation of this grid, I identified categories relevant to the research objectives. Then I thermalized and hierarchized the codes, seeking a better fit for the theoretical framework where possible and allowing new categories to emerge.

In the first step of the data analysis, after the interviews were completed, I transcribed the contents of the video interview into text and managed them. The analysis began after reviewing the first interview to examine whether participants were responding to the research question.

In the second step of the data analysis, I followed Tinto's theory of academic and social integration to shape the coding grid and plan the analytical strategies.

Finally, I examined whether the lever is consistent with the use of social software by the teachers in the two counties. Then, I examined how the teachers use social software to communicate with their students.

## 8.5.1 Categories of content analysis

In the following tables, I have presented the main categories used in the content analysis of the first research question. Here, I have adopted a mixed approach, where many of the categories come from the conceptual framework but others emerged from the interviewees' discourse.

**Table 10** *Categories of content analysis – Interview data for research question 1*

Categories	Number of citations	Canadian teachers	Chinese teachers	Canadian students	Chinese students
<b>Engagement</b>	<b>45</b>				
Communication with the teacher	8	2	2	3	1
Individual tutoring	5	2	2		1
Asking the teacher questions	8	2	2	3	1
Teacher's feedback	8	2	2	3	1
Peer-to-peer contacts	16	2	2	4	8
<b>Support</b>	<b>19</b>				
Social support	8			3	5
Academic support	11	4	2	3	2
<b>Communication</b>	<b>23</b>				
One to one	10	2	2	3	3
One to others	3	1	1		1
One to all	10	2	2	1	5
<b>Learning materials</b>	<b>10</b>				
Useful	10	2	2	3	3
Not useful					
<b>Collaboration activities</b>	<b>53</b>				
Sharing and transfer of documents	8	2	2	4	4
Teamwork	12	1	3	5	3
Create posts	8	2	2	1	3
Comments	5	2	1	1	3
Teacher giving guidance	10	2	2	3	3
Teacher explaining to students	10	2	2	3	

The five main coding categories for research question 1 are as follows:

- Engagement
- Support
- Communication
- Learning materials
- Collaboration activities

For data comparison, the researcher divided the codes into four categories: Canadian teachers, Chinese teachers, Canadian students and Chinese students. The meanings of the codes are as follows:

- Engagement: Students communicate with their teacher. The teacher offers individual tutoring for students. Students ask the teacher questions on the social software groups. Students contact their classmates on social software groups.
- Support: Students obtain social and/or academic support from the social software groups.
- Communication: The means of communication used by the teacher include one teacher contacting one student on the social software conversation window, one teacher contacting many students on small social software conversation groups and one teacher contacting all class students on the social software class or course group.
- Learning materials: Members of the group share learning materials.
- Collaboration activities: This code means that students have some sort of collaborative activities. They may share and transfer documents, do teamwork with classmates or create posts or comments on the wall of the group. The teacher gives learning guidance and explains difficult questions to students.

In these above behaviours, the ratio of engagement and collaboration activities are the highest. Second, Chinese students use social software to contact classmates at a higher frequency than Canadian students, and social software groups appear to be the source of their social support in college life. The following pie charts show the differences between the discourse of Canadian and Chinese teachers on social and academic integration (Figure 16) and the differences between Canadian and Chinese students (Figure 17).

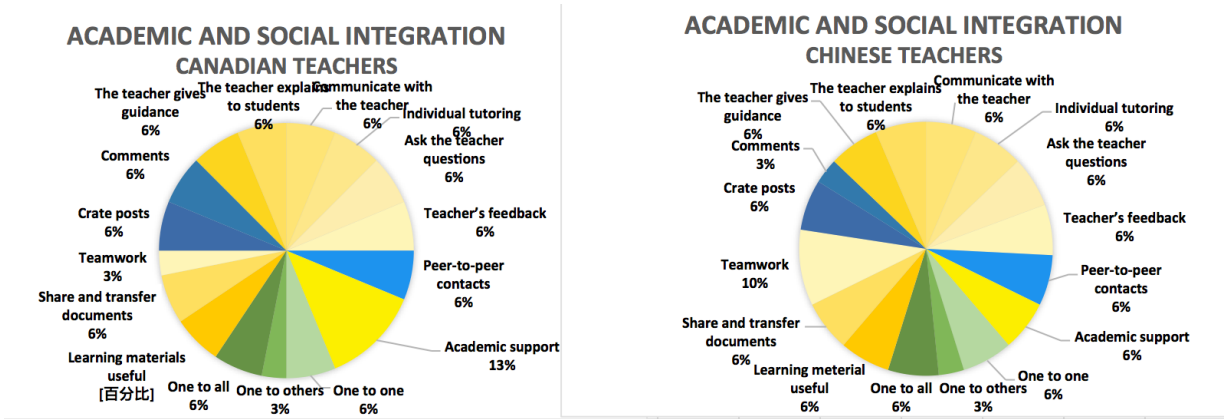


Figure 16. Comparison of academic and social integration categories for teachers.

From the teachers' point of view, there seem to be few differences between the way they use the social software groups. Chinese teachers refer more often to teamwork than Canadian teachers, but Canadian teachers mention academic support activities more frequently.

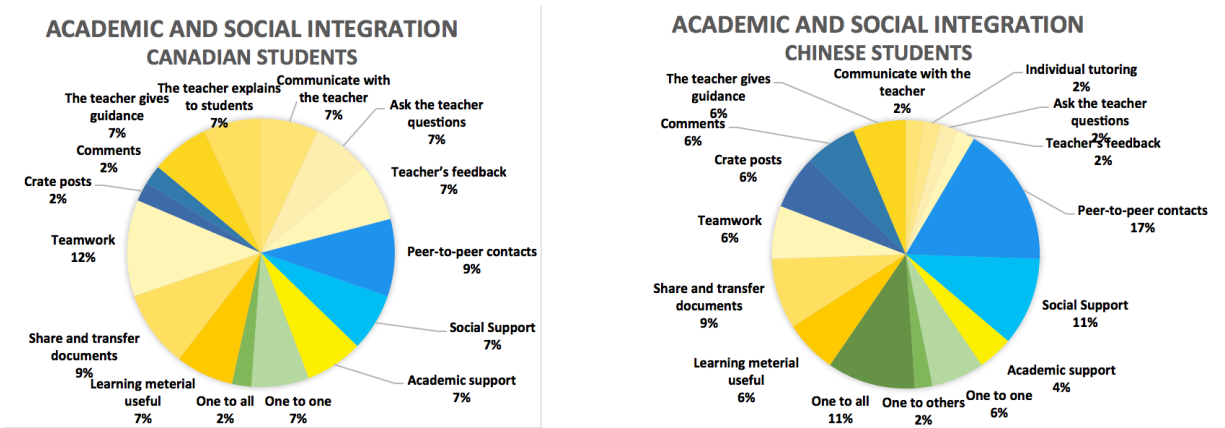


Figure 17. Comparison of academic and social integration categories for students.

From the students' point of view, things look more different. Canadian students refer more often to teamwork, questions asked to teacher, the teacher's feedback and communicating with the teachers, elements that are all related to academic integration. Chinese students more frequently mention activities related to social support, peer-to-peer contacts and social support, categories that are all related to social integration. Hence, from the students' perspective, activities in the social software group are more related to the academic integration process in the Canadian context and more related to the social integration process in the Chinese context.



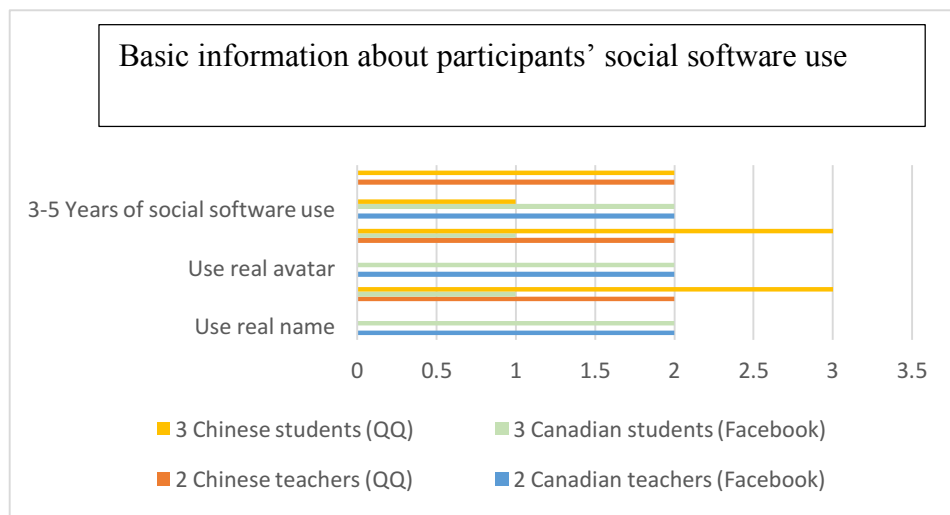
## 8.5.2 Basic information about participant: Knowledge and skills

The data about the identity of the participating students are as follows:

**Table 10** *Social software uses by participants*

	2 Canadian teachers (Facebook)	2 Chinese teachers (QQ)	3 Canadian students (Facebook)	3 Chinese students (QQ)
<b>Use of real name</b>	2		2	
<b>Use of screen name</b>		2	1	3
<b>Use of real avatar</b>	2		2	
<b>Use of fake avatar</b>		2	1	3
<b>3-5 years' use of social software</b>	2		2	1
<b>More than 9 years' use of social software</b>		2		2

This table contains basic information about ten interviewees' social software use. The statistics include the participants' names, avatars and usage history.



*Figure 18.* Bar chart of basic information about the participants' social software use.

The bar chart shows that Canadian teachers and students prefer to use real names and avatars. They had used Facebook for an average of three to five years. Chinese teachers and

students prefer to use a screen name and fake avatar; they have a longer history of using social software (QQ).

Canadian students are accustomed to using their real names or the first capital letters as their screen name on Facebook. They generally use their real avatar or family photo as an avatar. Participant SCA1 (Canadian student) did not feel safe and comfortable as her privacy might be revealed; hence, she used a screen name.

Chinese students are accustomed to using a screen name on QQ, because many friends have encountered online fraud on QQ. They are not willing to use their real name and avatar. When students join the class group or course group on QQ, they modify their screen name to their real name for their teachers and classmates so that they know who they are. Moreover, they use their real names in WeChat (another instant messaging software for the mobile phone), because WeChat users can add friends to WeChat only via phone number.

Since social software plays a major role in the lives of students, the researcher wants to understand the participants' skills in the use of social software.

The six students who were investigated installed the social software application on their devices at the same time, such as a smartphone and computer or tablet. They can engage the class group anytime and anywhere. Social software helps teachers increase efficiency, simplify workflows and amplify student engagement. With the social software application, learning does not have to wait. Students can access assignments, check teachers' comments, view class content and so much more.

On the Canadian side, most Canadian students like Facebook and thus they are already familiar with how it works.

Participant SCA1 (Canadian student) said that:

*Almost all my university classmates are on Facebook, and it's easy to use.*

She joined all the class groups for her professional course opened by teachers on Facebook.

On the Chinese side, participant SCH1 (Chinese student) said that:

*In China, QQ is one of the largest and oldest social software programs; it has become part of the daily diet of many Chinese, particularly in cities and big towns. Many of the*

*university students have used QQ since they were primary school students; they used QQ almost every day.*

Participant SCH2 (Chinese student) stated that:

*In general, in every Chinese student's QQ group list, you can find all of his class groups from his primary school, secondary to his university.*

The use of study groups on social software is a common phenomenon for both Canadian and Chinese students. Teachers in both countries argue that the groups they created for the course on social software were private groups and temporary groups; when the courses end, the teachers will delete the social software groups online. Sometimes, some teachers let the groups live for a short period after the official ending of the course. For example, they keep the group for six months after the course finishes, but eventually close it.

### **8.5.3 Engagement**

The six student interviewees said that they don't turn off Facebook or QQ on their mobile phones.

Six students of both countries replied that they used social software mainly for interacting with personal contacts such as friends and family. Because their friends and classmates are also on Facebook or QQ, their friends recommend it to each other, and thus, all of them end up following the trend. They all mentioned that it is a source of sharing news and announcements from campus and different courses, thus contributing somehow to the academic integration process. In addition, both students and teachers consider social software as a time-saving tool.

Participant SCA1 (Canadian student) said that:

*The communication on Facebook is asynchronous. Once my text is sent, I know I can receive the replies later from my friends or from the group joined, and I do not waste time waiting.*

Participant TCA1 (Canadian teacher) stated that:

*Social software allows us to create communities for learning, so that the students can exchange together. We know that young people like to use social software; therefore, it is a good way to encourage them to see the pedagogical value of social media.*

Participant SCH2's (Chinese student) answer is very representative; she said:

*I think the most common feature of social software is to express your opinions, suggestions or preferences; this is the most common function, and in addition, there are some interesting things to share with friends, such as some meaningful articles or photos and learning resources from teachers.*

On social software, users no longer need to find a common time to communicate. They check the communication information at their own convenience. They can communicate to everyone in a group or to one person.

Participant TCH1 (Chinese teacher) said that:

*Every message I sent in the QQ group was recorded. Sometimes, I check which students did not view my message or receive the file in the QQ group. The QQ software guarantees my operation, since it is not easy to lose files in the QQ group.*

### 8.5.4 Support from social and academic integration

Students receive social support from their behaviour on social software, as shown in the following table:

**Table 11** Basic information about the uses of social software by the students of the two countries

	Canadian students (Facebook)	Chinese students (QQ)
How many hours do you check the information on social software?	SCA1: Under 2 hours, contact anytime by mobile. SCA2: About 3–4 hours, contact anytime by mobile. SCA3: Under 2 hours.	SCH1: About 6–7 hours, contact anytime by mobile. SCH2: About 3–4 hours, contact anytime by mobile. SCH3: About 3–4 hours, contact anytime by mobile.
How many friends do you have?	SCA1: 48 SCA2: 99 SCA3: 45	SCH1: 306 SCH2: 160 SCH3: about 400
How many friends know your real name?	SCA1: All SCA2: Almost all SCA3: All	SCH1: All SCH2: All SCH3: Not all, some strangers just know my screen name.
Your relationship with your friends	SCA1: Good, they are all acquaintances, classmates and families. SCA2: Good, they are all acquaintances, classmates and families. SCA3: Good, they are all acquaintances, classmates and families.	SCH1: Good, they are all acquaintances, classmates and families. SCH2: Good, they are all acquaintances, classmates and families. SCH3: Some are close, while some are distant. There are some strangers.

How many groups have you joined?	SCA1: 5 SCA2: 10 SCA3: 4	SCH1: 70 SCH2: 43 SCH3: 71
Did you create some groups?	SCA1: Yes SCA2: Yes SCA3: No	SCH1: Yes SCH2: Yes SCH3: Yes
Do you have personal contact with academics	SCA1: Yes SCA2: Yes SCA3: Yes	SCH1: Yes SCH2: Yes SCH3: Yes
Do you like to post some information on social software?	SCA1: No SCA2: Yes SCA3: No	SCH1: Yes SCH2: Yes SCH3: Yes
Do you pay attention to the status of your friends?	SCA1: Yes SCA2: Yes SCA3: No	SCH1: Yes SCH2: Yes SCH3: Yes
If your friends post new information, would you leave a like, comment or share?	SCA1: Sometimes SCA2: Yes SCA3: No	SCH1: Yes SCH2: Sometimes SCH3: Yes

The ease of access and the popularity of social software have created opportunities for students to obtain social support. The social software groups increase the interactions among students; they like to click “Like,” “Comment” and “Share” with others in groups. In addition, more private communication is possible using private message and free call.

The month preceding the final exam was chosen as the observation period. The frequency of interactions between Canadian students and Chinese students in the social software class groups can be seen in Table 12.

**Table 12** *The comparison of posts on social software groups*

	Canadian students	Chinese students
Observation period	2017/04/04-2017/05/04 (30 days)	2017/06/12-2017/07/12 (30 days)
Class group name	BEFLS UdeM 2015-2019 on Facebook	2015 Educational technology program on QQ
Number of students in class group	42	45
Number of posts	Posts: 41 Comments: 95 Like: 69	Posts: 848 OK: 73
Total number of posts	205	921
Posts related to social content: Emotional expression or class news	10	745
Posts related to academic content	31	103

QQ groups do not have the “Comment” and “Like” features. Hence, sometimes, Chinese students liked to reply “Ok” to represent “Like.” The two classes had almost the same number

of students; one had 42 students and the other had 45 students. However, the numbers of posts are clearly very inconsistent. Chinese students seem to be more active in the social software group. According to the proportion of posts types, the content of the Canadian students' post is more related to academic information (hence related with academic integration), while the content of the Chinese students' posts is more related to social activities in the university (hence to the social integration).

The information posted by the Chinese students on the QQ class group includes:

- Social and administrative posts: information about campus sports and social activities, expert lectures, campus and class administrative arrangements, student union notifications, information about the booking of train tickets, students' dormitory health check information, summer vacation event notices, funny pictures, funny videos, scholarship application notices, classroom check-in notices, school relocation notices, competition notices and the network security questionnaire.
- Academic posts: information about assignment discussion, course schedules, examination schedules, examination review documents, self-study classroom arrangement notice, normal student qualification examination notices and assignment samples.

In the Canadian context, the teacher's support was rated positively. Participant SCA1 (Canadian student) said that:

*I feel the teacher's support should not be left out. She was always there for us when we had questions. She actively answered our questions. If another student had already answered the question, she would post a comment or give a "like" icon. Her goal was to help us succeed academically.*

The students appreciated the short turnaround time for the teachers' answers to their questions. She also appreciated the quality of the answers.

The interaction in social software study groups is a continuation of classroom experiences. Participant SCH3 (Chinese student) stated how her classmates helped her during the busy and stressful exam season:

*During the last exam period (Juan 2017), unfortunately, I was sick. The computer-based exam was in four days. I was very anxious at that time, and I tried to send a message for*

*help to our QQ class group; I hoped that someone would give me some course review materials. Not long after, my classmates sent me many documents for this course through the QQ's one-to-one window. Finally, I passed this course. I was grateful for their help; otherwise, I think I would have failed this course.*

This shows how a student can use social software to connect with and get support from other students, resulting in a memorable encounter that can contribute to an enduring sense of loyalty to the class.

### **8.5.5 Communication**

The six students all acknowledged that they used social software both in their academic and personal life.

Participant SCA3 (Canadian student) claimed that:

*I am hanging out on Facebook everyday 24/7. I check Facebook messages much more frequently than email.*

For her, the most important feature of social software is communication. It also provides a platform to express personal views and share resources.

The students also said that their classmates were basically on Facebook 24 hours a day, and that if they needed to find a classmate, they would send Facebook messages, which was faster than writing an email.

Participant SCH3 (Chinese student) said that:

*On the mobile phone, I never shut my QQ off; my mobile QQ is always active even when I use my computer. It's just like my other phone number, because the data cost in mobile phones is lower than the telephone charges.*

### **8.5.6 Collaboration activities**

Social software has built-in features to support student's collaboration. Teachers create the social software groups for academic activities. Under the close supervision of teachers, students learn by way of collaborative learning activities. For instance, students collaborate with other classmates, work together in teams, discuss and respect other points of views in the groups. Teachers help to facilitate student interactions and active participation in social software groups. Students have the autonomy to self-select what they need to learn to gain a better understanding of the learning questions.

The data collected showed that Facebook groups and QQ groups can be utilized to enhance student-to-student collaboration. Chinese students liked to get the help of other students in the QQ group. Canadian students liked to work on collaborative documents in the Facebook group, and they were very active in responding to the teachers' or students' comments.

The teacher's support was rated positively in the Canadian social software group. For the first few days of session, the two Canadian teachers gave immediate feedback and responses to the students' questions and assessments in the Facebook groups. Once students got comfortable interacting with each other, teachers reduced participation. This allowed students to collaborate with each other. Additionally, the students could judge whether their posts were useful for their studies, based on the teacher's comments.

## **8.6 Results of first research question**

The results show that Canadian teachers liked to collaborate with students more than Chinese teachers; Chinese teachers liked share learning resources more than Canadian teachers; Canadian students liked to share documents or resources in Facebook course groups more than Chinese students, and Chinese students liked to interact in QQ groups more than Canadian students.

Activities on social software supported both social and academic integration of students, the distinction being sometimes hard to make.

Chinese students and Canadian students preferred to use social software (Facebook and QQ) for learning and communication. For them, it is a timesaving and efficient communication tool. In contrast, in terms of the usage history, the usage time, friends' numbers, and groups' numbers in the social software, Chinese students were more engaged in social activities in the social software class group than Canadian students. In the QQ class group, the peer support for Chinese students let them feel a sense of belonging. A Chinese student believes that the use of social software helped him succeed in an exam. In contrast, Canadian students preferred to discuss academic-related information in class groups. A Canadian student thinks that the teacher's support is ubiquitous. There is less distance between the social software group of teachers and the students than between the students and the teacher in a social software group.



## **8.6.1 Social integration and academic integration**

The data shows that social software is a social tool that may help them settle into university life. At the same time, it can also become a learning tool, as more and more teachers and students use social software for learning purposes.

### **8.6.1.1 Collaboration activities**

The results showed that all students stated that social software groups increased interactions between students. Some students used social software groups to collaborate on classroom activities, such as team projects or school assignments. This is a continuous mode of classroom interactions that supports student learning outside the classroom. Many students appreciated the contact with their classmates and teacher in social software groups and felt that they always had their teachers' support. One instance of this is a Chinese student's experience of falling ill during the last exam period; and if it hadn't been for his classmates' help on the QQ class group, he would have failed his computer-based course exam. In this sense, the use of social software promoted this student's academic success.

### **8.6.1.2 Engagement discussion**

In terms of social integration, Chinese students seemed to be more actively engaged in the discussions in the social software group. They posted to their QQ class groups more frequently than Canadian students did to their class Facebook groups. Based on the proportion of posts, however, Canadian students preferred posting information related to learning content, while in the Chinese student groups, the class teachers' and the management committees' posts were more related to administrative information and activity information. Only a few posts were related to learning content.

### **8.6.1.3 Communication model: One-to-all**

All six interviewees actively used social software for personal, social and academic communication. These students reported that they joined Facebook or QQ as a means of making new friends at university; they also kept in touch with old friends and family at home.

A Chinese student (SCH2) introduced a change. She said that people used to use QQ, where the communication is mostly one-to-one through the QQ dialogue window. After the QQ group became popular, the teacher created special study groups for the course, and the communication model changed to one-to-all. Students got more information feedback in the QQ group. These study groups promote both social and academic integration.

Students thought Facebook or QQ were used for social reasons and for formal teaching purposes. Currently, more and more teachers also use Facebook and QQ groups to contact students.

### **8.6.2 Mobile phones, mobile Apps and the reduction of data charges**

The Canadian and Chinese student interviewees said that every student owned a mobile phone. In China, many mobile phone companies offered a low-cost or discount plan for students before each semester. The advances in technology and the reduction of usage costs increased student use of social software on mobile phones, and uninterrupted connection among students has become a common phenomenon in universities.

Facebook and QQ both have synchronous features as part of their structure. This social software can be installed on the mobile phone (as mobile phone apps) or a desktop computer. Therefore, a user can stay signed in on multiple workspaces, have more control over their messages and stay in sync even when they are on the move. The student interviewees and teachers were not worried that messages would not be sent or received. Whether the message was checked or not is also recorded in the social software.

Students and teachers considered social software as a time-saving tool. Social software increases opportunities to communicate, especially when they use social software on their mobile phones. It is a more pragmatic method than traditional face-to-face meetings; they can maintain a constant dialogue with numerous people in social software groups.

## **8.7 Discussion of first research question**

deVilliers (2010) and Barbour Plough (2009) argue that the use of social software enhanced student satisfaction and engagement and that these factors were strongly related to the

students' retention and academic success. Barczyk and Duncan (2017) support this position when they argued that students with strong feelings of classroom community are more likely to persist in their academic programs than students who feel lonely and helpless.

### **8.7.1 Social and academic integration factors on social software**

Although many researchers (Lampe, Wohn, Vitak, Ellison & Wash, 2011; Vassilakaki & Garoufallou, 2016) consider Facebook as an informal tool that students use to organize their classroom experiences, more and more students and teachers use it as a formal tool for education, as was seen in the Canadian case. They post class notifications, share resources, collaborate on teams, share assignments, ask questions, give feedback and so on in the social software group. These behaviours are the same in traditional classrooms. One Canadian teacher even said that she seldom checked her email. In her opinion, the social software has displaced email as the primary source of communication.

Theories of persistence emphasize the importance of engagement and integration. Kord (2008) argues that online social networking was a negative influence on the college student academic experience, but now we can question this. Due to advances in social technology and the popularity of mobile phones, student living and learning is increasingly difficult to separate from the use of social software. In this study, the four Canadian and Chinese teachers use social software to communicate with students, run collaboration activities with students and encourage students to engage in discussions on the social software groups. The six students in the study obtained the support of teachers and classmates and interacted with them on the social software groups. These may actually help to promote student success.

The future teachers need to adapt to this trend and use this technology to combine their instructional design, teaching processes and class organization.

### **8.7.2 Comparison between Canadian and Chinese teachers and students**

It seems that Chinese students use social software for peer-to-peer contact more frequently than Canadian students. They spend a lot of time on social software every day, and thus, social software has become the main tool for their social activities. For the sake of cyber security, Chinese students and teachers are reluctant to use real names and avatars. Only when

they join a QQ class group or QQ course group do they use their real names. Even then, they do not use their real avatars. This showed that Chinese teachers and students have learned the basic skill of protecting themselves in the insecure network environment. In contrast, teachers and students in Canada seemed less worried about this, and their trust in others seemed to be higher. Both the Canadian and Chinese social software course groups were private, and only students registered in the course were eligible to enter. This social software group environment ensured the safety of resource sharing and membership information.

Due to the popularity of mobile phones and applications, the interviewed teachers and students had installed social software (Facebook or QQ) on their mobile phones and computers at the same time. Normally, they did not quit these apps on their mobile phones. This resulted in asynchronous information on the social software being read quickly. It also laid the foundation for connection between the teacher and the students, making the communication almost ubiquitous.

The content posted by the Canadian students was mostly related to the course, whether it was on the Facebook class group or the Facebook course group. Most of the content posted by Chinese students on the QQ class group was related to campus life. The posts on the QQ class group were relatively scarce, as they liked to passively accept the information shared by the teacher.

One Chinese student fell ill during the exam, and he received help from classmates and passed the final exam of the course. This showed another perspective, in that the relationships among Chinese students seemed to be stronger than those among Canadian students

It appeared that a contradictory phenomenon was reflected when, despite the complex environment of the Chinese network being insecure, the social software class group provided a small platform to make the relationships between members stronger. Moreover, the relationships between acquaintances drove students' academic integration and led them to academic success.

The collective concept in Canadian students' thought was relatively weak. The Canadian students did not have a class advisor or many activities for class members. Universities had their own administrative Facebook pages and displayed campus activities on Facebook pages. The Canadian students were more active than Chinese students on social software course groups for

academic activities. The Canadian teachers played a role in guiding knowledge. For example, after their teachers shared Pinterest resources related to educational technology, the Canadian students took the initiative to continue to dig into this website and share information related to the course on the group. It appeared that the Canadian students' academic integration promoted their academic success.

## **9 Results: Second Research Question**

The second research question was: How do teachers and their students use social software in their academic and social integration processes?

### **9.1 Context**

Bandura (1977) believes that learning is completed through social forms of learning and especially modelling. Bandura suggests that self-efficacy beliefs impact the selection of activities and that individuals will not choose to engage in activities if they believe they will fail.

For Bandura, learning behaviours are related to social learning. As social tools, Facebook and QQ have the ability to show a behaviour and provide the necessary feedback and rewards that encourage the reproduction of this behaviour (Hilscher, 2013). Modelling is thus possible through social software.

The degree to which users use social software depends on their “confidence in their ability to successfully understand, navigate and evaluate content online,” or, more precisely, on their Internet self-efficacy (Daugherty, Eastin & Gangadharbatla, 2005, p. 71). Literature on self-efficacy also suggests that it may refer to a person’s trust in their ability to perform a task, a person’s judgment about a future event or even a belief in their own ability (Gangadharbatla, 2008).

Kim and Glassman (2013) argue that the perception or anticipation of success helps determine the choices of our activities and that this is a self-motivating factor that helps us believe we can overcome any unforeseen obstacles that may come in our way.

### **9.2 Methodology**

For this research question, interviews and observations were used. Observations were important in order to understand the online collaborative learning environment.

#### **9.2.1 Case selection**

The case selection was presented earlier in this document.

## **9.2.2 Instruments**

The research instruments were interviews of six students and four teachers and observations of the four teachers' social software course groups.

Observations were important for this study in order to understand the interaction in the social software environment. I made observations to assess social software uses for learning within the social software groups. Observations helped me contextualize some of the behaviours during the class period. They also allowed me to gain a sense of the interaction dynamics among the students and between the students and teachers.

The two Canadian teachers created Facebook groups named PPA4111, section J and PPA2111. The Chinese teacher created a QQ group account named 2017–13 multimedia courseware.

I joined the social software groups to observe conversations about the students' experiences in the course all week long. I collected information from the social software groups, paying attention to status updates and any further commentary the members made in the threads initiated by the status update.

In the social software platforms, both teachers provided instructions, as well as a description of the group functioning, provided assignments models, tips and suggestions, etc. In the social software groups, the students interacted with their peers and their teacher and wrote some of their assignments. In both platforms, students were given the opportunity to express their opinions and comments. Comments were subsequently provided to students by the teacher and peers in order to help them improve their learning. The students had to write their own individual assignments after their online collaborative learning session.

## **9.2.3 Interview participants and observations**

In order to assess the different types of online interactions through the social software groups, I relied on interviews with Canadian and Chinese teachers and students. These were presented earlier.

### 9.2.3.1 Observations of QQ course groups

For this particular research objective, observation of the social software groups was important. The QQ course group for the course Multimedia Courseware Design and Production was observed. The observation period started on June 15, 2017, and ended on July 15, 2017. The second observation was of the QQ class group for the 2015 Educational Technology Program.

I observed all posts from the groups of teachers and students, which were private groups organized by this program's teachers and students.

### 9.2.4 The role of social software courses groups

Using the observation of social software course groups as the context for my cases reinforced and enriched the data that emerged from the interviews presented in the preceding chapter.

## 9.3 Data analysis

All interviews were taped and transcribed. Initially, they were coded manually and then I used the MAX QDA software to code and analyse the interview data. Some dialogue content of the observed groups was screen-captured to be included in the qualitative corpus to be analysed.

### 9.3.1 Categories of content analysis

In the following tables, I have presented the main categories used in the content analysis of the second research question.

**Table 13** *Categories of content analysis: Interaction (Interview data for research question 2)*

Categories	Number of citations	Canadian teachers	Chinese teachers	Canadian students	Chinese students
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<b>Interaction between the student and social software groups (environment)</b>	<b>39</b>				
SS type groups and numbers		2	3	4	9
Posts or comments on SS		4	7	4	7
<b>Interaction between the teacher and students</b>	<b>22</b>				
Teacher collaborates with students		11	9	1	2
<b>Interaction among students</b>	<b>49</b>				
Students help each other				2	4
Students manage social software class groups			7	1	6
Students discuss with peers		1	1	6	4
Students share documents		1		8	3
Students collaborate with peers		1	1	1	2
<b>Interaction between students and learning content</b>	<b>23</b>				
Teacher and students share and transfer documents with group members		5	8	1	2
Teacher gives feedback to students		3	3	1	

The four main coding categories for research question 2 are as follows:

- Interaction between the student and social software groups
- Interaction between the teacher and students in groups' communication
- Interaction between students in groups
- Interaction between students and learning content

For data comparison, I divided the codes into four categories: Canadian teachers, Chinese teachers, Canadian students and Chinese students. The definitions of the categories were as follows:

**Interactions between the students and the social software groups (environment):**

This category of use pertained to global data about interactions within the group. It included the type of social software groups, the number of groups the participants joined and whether they made frequent posts and comments.

**Interaction between the teacher and students:** This category of use pertained to teacher-student interactions. It included teachers creating social software courses or class groups for students, teachers collaborating with students and discussions between students and teachers.

**Interaction among students:** This category of use pertained to collective or individual student-student interactions within the social software groups. It included students who helped each other, students who managed social software class groups, students who discussed with peers, students who shared documents and students who collaborated with peers.

**Interaction between students and learning content:** This category of use pertains to interactions between students and learning contents. It included the teacher and students sharing and transferring documents among group members and the teacher giving feedback to students about learning materials.

The above behaviours showed that the ratio of interaction among students was the highest in groups. Second, students and teachers used some social software activities frequently, such as posting and replying on social software groups. This showed that social software has become an important communication tool. The following bar charts show the differences between Canadian and Chinese teachers and students.

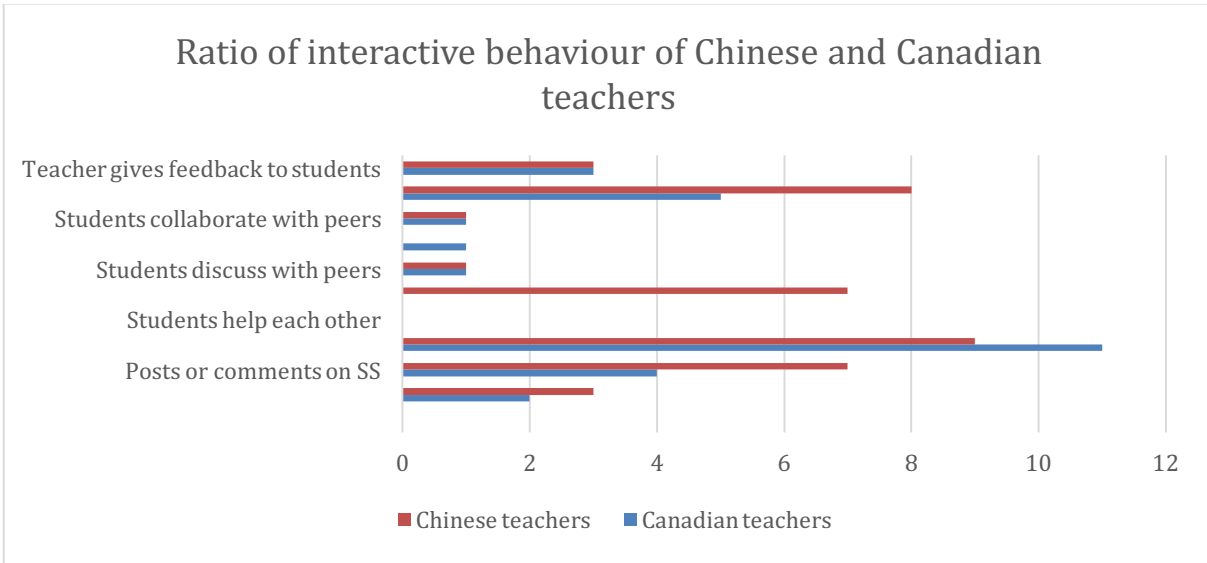


Figure 18. Ratio of interactive behaviour of Chinese and Canadian teachers in social software groups (part 1).

The bar chart shows that Canadian teachers liked to collaborate with students more; Chinese teachers liked to share learning resources more than Canadian teachers.

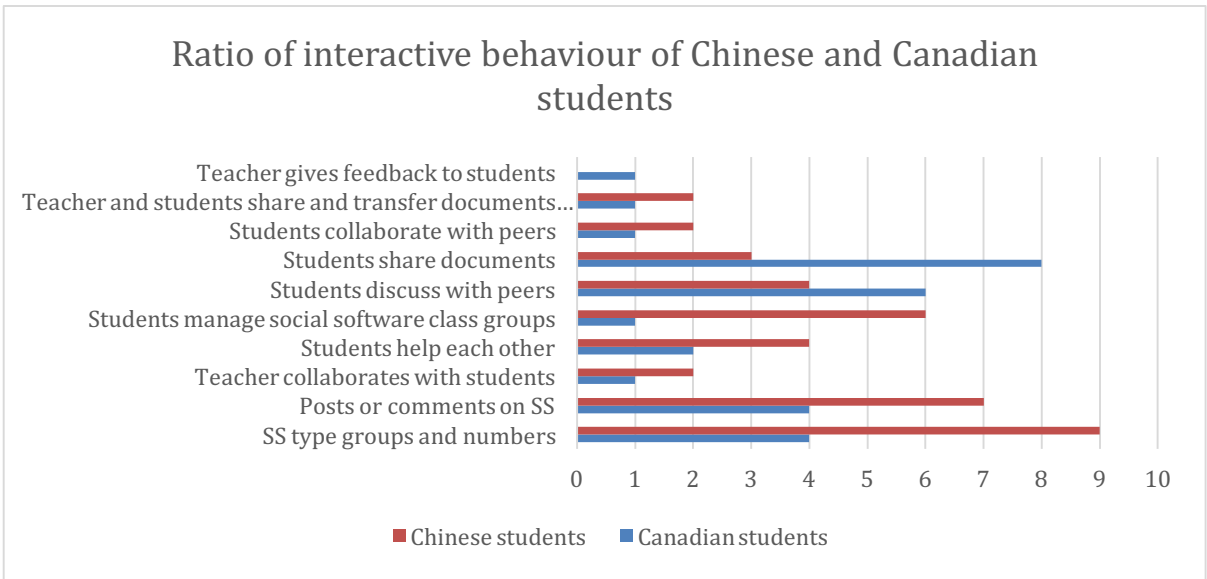


Figure 19. Ratio of interactive behaviour of Chinese and Canadian students in social software groups (part 2).

The bar chart shows that Chinese students liked to interact on social software groups more than Canadian students; Canadian students liked to share documents or resources on social software course groups more, which can be linked to academic integration.

**Table 14** Summary results for research question 2

	Canadian participants	Chinese participants
Teachers	Canadian teachers collaborate with students more than Chinese teachers.	Chinese teachers share learning resources with students more than Canadian teachers.
Students	Canadian students share documents or resources in Facebook course groups more than Chinese students.	Chinese students interact in QQ groups more than Canadian students.

### 9.3.2 Interaction between students and environment

The social software groups provided an environment in which the learners observed and imitated the behaviour of the teachers and of other students.

Participant TCH1 (Chinese teacher) said that:

*All my students have a QQ account. The teacher establishes a QQ course group or project group as an online learning environment before the beginning of course, which has already become habitual for us.*

According to the Canadian interviewees, they used the Facebook group to access or interact with educational content. Only a few students in the courses did not have a Facebook account, and all the interviewees stated that they used the Facebook group. In China, every student also had a QQ account. Students were quick to admit that they checked Facebook or QQ more frequently than the school system or email. This is consistent with Wang, Woo, Quek, Yang and Liu (2012), who found that social software is used as an online learning management system by students and teachers.

### 9.3.2.1.1 Facebook group vs. QQ group platform

Facebook groups let users set up private groups they can control access to and allow other users to invite members and build a conversation. Users who want to join a Facebook group can go to a group and click the “join group” button. They have to wait for a group admin to approve the request. In Facebook groups, students can share information and links and upload and download files. Users can also use links to files located in external cloud storage, such as Google Drive or Dropbox. Facebook groups have three privacy levels: open, closed and secret. In “Closed” groups, only members can post and read. Facebook group features include Group Photos, Group Messages, Group Events, Group Files and Docs. The chart below shows the functions of a Facebook group.



Figure 20. Screenshot of Facebook class group platform: 2015–2019 Bachelor of education in French as a second language class group of the Université de Montréal.

The left section of the Facebook group shows discussions, members, events, video, photos and files.



*Figure 21.* Screenshot of the Facebook group platform: Left section.

QQ users can create Groups or Discussions with their friends. If someone wants to join a QQ group, they have to send a message for permission to the QQ group host (the person who set up the group). This is similar to the group settings in a Facebook private group. Based on the number of group members, QQ groups had three levels: the ordinary group, senior group and super group. The ordinary group is free; the two others require some fee to be paid. The chart below shows the functions of a QQ group.



Figure 22. Screenshot of QQ class group platform: 2015–2019 Educational technology class group of the Guangxi Teachers Education University.

The administrator of the QQ class group shares the examination regulations for the teachers’ qualification certificate.



Figure 23. Screenshot of the QQ group platform: Top section.

The group window is in the upper section, which shows the important applications, such as Chatting, Announcements, Albums, Files, Assignments and Settings.

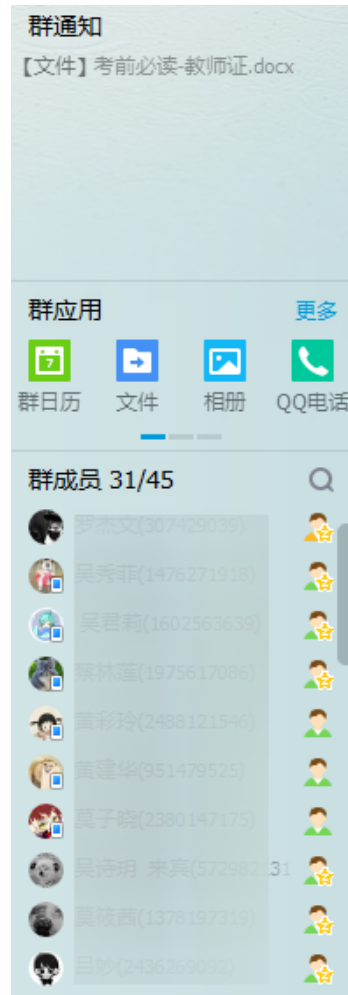


Figure 24. Screenshot of QQ group platform: Right section.

The right side of the group window is divided into Group notifications, Group applications and Group members. Group applications contain the record of sign in, Group activities, Group voting, Files, Group video, Albums, Sharing group, Wall group, Multiplayer discussion group, QQ phone and Group collections.



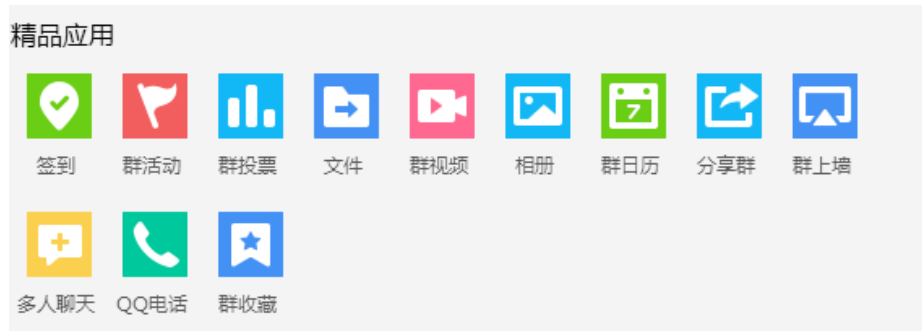


Figure 25. Screenshot of QQ group's application.

The biggest difference between QQ groups and Facebook groups is that QQ groups are Instant messaging groups very similar to Facebook Messenger. The Facebook platform is a web page, and users open it using the browser in a computer, but if we compare the mobile phone applications, there are few differences between QQ and Facebook.

### 9.3.3 Interaction between teacher and students

Wang and her researchers (2012, p. 429) argue that using the Facebook group for teaching and learning may enable teachers to change the focus from content-based learning to process-based learning and transform student learning from passive to active learning. Social software also has the potential to increase student engagement and promote interaction between students and teachers. Lamb (2016) argues that the social software platform could offer an opportunity for teachers to engage students in their courses outside the classroom.

#### 9.3.3.1.1 Canadian teachers created the Facebook course groups

The Facebook group PPA2111 and the Facebook group PPA4111 were used in the Integration of ICT course at the Department of Psychopedagogy and Andragogy, in the Université de Montréal Faculty of Education. The Facebook PPA2111 had 32 students as participants in this major course, and their ages ranged from 21 to 50; there was one student who did not join the Facebook group. The Facebook PPA4111 had 31 students as participants; all the students joined the Facebook group.

The Canadian teachers created Facebook groups before this course started. Then they put a link of the course in Studium, the local Moodle environment at Université de Montréal. The Facebook access mode was first set to "open to public" so that access to the group did not

require participants to be friends. After all the students had joined the Facebook group, this setting was changed to “closed.” The activities carried out in the Facebook group included putting up announcements, sharing course resources, organizing weekly tutorial sessions and conducting online discussions.

The wall in the Facebook group was used to continuously post information and publish announcements, which included hyperlinks, pictures and videos. The wall also allowed members to share resources and get feedback from others.

Another helpful feature of the wall was that whenever a discussion topic or a picture was created in the Facebook group, it would automatically appear on the wall, which made keeping track of the activities that happened in the group convenient.

The first announcement from Participant TCA1 was:

*This Facebook group aims to exchange contexts or practices of integration of ICT in FSL. You can share interesting resources or links. In addition, if you have any questions about the course, you should ask it here.*

#### **9.3.3.1.2 Chinese teachers created the QQ course groups**

Chinese teachers usually created the QQ group before the beginning of the first course. In the first course, the teachers wrote their own QQ account number and the QQ group account number on the blackboard in the classroom. Then the students joined the QQ group. The QQ group was also closed after all the students joined the group.

Participant TCH1 (Chinese teacher) described how he used the QQ group for a project with five students; this was not a course and it was a small extra project:

*I made a briefing about the academic research work, which covered the introduction of our department and the activities our department exchanged with foreign universities. For example, we send students to each other's universities. Before my undergraduate students and I did this project, we first set up the project QQ group; I transferred the relevant information into Pdf or Word documents, and then I sent the files in the QQ group, so that all members of the group could receive the documents. The QQ group recorded which files have been downloaded, the group members who have downloaded the files, and ones who have not... the downloading actions were marked in the group history. In addition, for temporary guidance, for example, we discussed in the QQ group, I would give some suggestions for the division of students. When they had questions, they would ask me in the group. I could see the progress of the teamwork, as well as the current problems encountered. Finally, our project was completed in the QQ group*

*without any face-to-face meeting. I think that the QQ group improved the efficiency of our work.*

The window of the QQ group was used to post instant messages. This window generally showed five days of discussion, and if the members needed to look over a longer period, they could review the chat history.

The difference between the QQ groups and the Facebook groups was that the students of QQ groups preferred to post expression pictures. These expression pictures not only came from the QQ system, but also from the Internet. They are static images and dynamic gifs. This seems to be a popular practice for Chinese students chatting online.

Participant SCH3 (Chinese student) said that she felt that these funny expression pictures shortened the psychological distance between the students and teacher in the group. Three expression pictures were presented:

	<p>QQ class group of 2015 Educational Technology Program</p> <p>Student A: No need to check the psychological papers, all subjects will be tested</p> <p>Student B : (expression picture: Oh, kid actor)</p> <p>Student C: Do you think you don't need to worry about the exam?</p> <p>Student C: (expression picture: smiling but tired)</p> <p>Student D: I just want the model of the Psychology exam to be changed.</p> <p>Student A: It is an open book test</p> <p>Student C: I do not want test</p> <p>Student A: @ Student C: You are useless</p> <p>Student C: (expression picture: brain is a good thing, I hope you have one too)</p> <p>Student A: (expression picture: what does it mean?)</p> <p>Student E: (expression picture: I think and I am a little bit excited)</p>
--	---

Figure 26. Screenshot of expression pictures on the QQ class group.

Participant TCH 1 (Chinese teacher) described:

*Expression pictures are funny to many young people. These pictures can express different moods in a variety of vivid forms. In the library of QQ and WeChat expression pictures, many static and dynamic pictures (e.g., gif format images) are stored. They make the students' expressions more graphical and more interesting. It is obviously more in line with the demands of young people to express themselves. This has, to a certain extent, enhanced the students' activity in the QQ group.*

The teacher thinks that expression pictures activated the atmosphere on the QQ class group.

### **9.3.3.1.3 Collaborative learning activities**

The collaborative learning activities were positively rated.

Participant TCA1 (Canadian teacher) described that:

*Facebook is an important tool for communication and collaboration for today's students. Most of my students actively use Facebook, and they are much more open to using Facebook for communication and collaboration. In Facebook, we can create course groups to discuss and share resources. My students often posted their teamwork documents in the group; all classmates can see them and make suggestions.*

This teacher considered social software as an opportunity for educators to create a learning community in today's world. This teacher adopted this new medium in her instructional design and teaching processes.

Three Canadian students and two teachers used social software as a medium for sharing notes and used Facebook to arrange their course groups or meetings. The following figure shows a Canadian student sharing a link with classmates about a collaborative assessment.

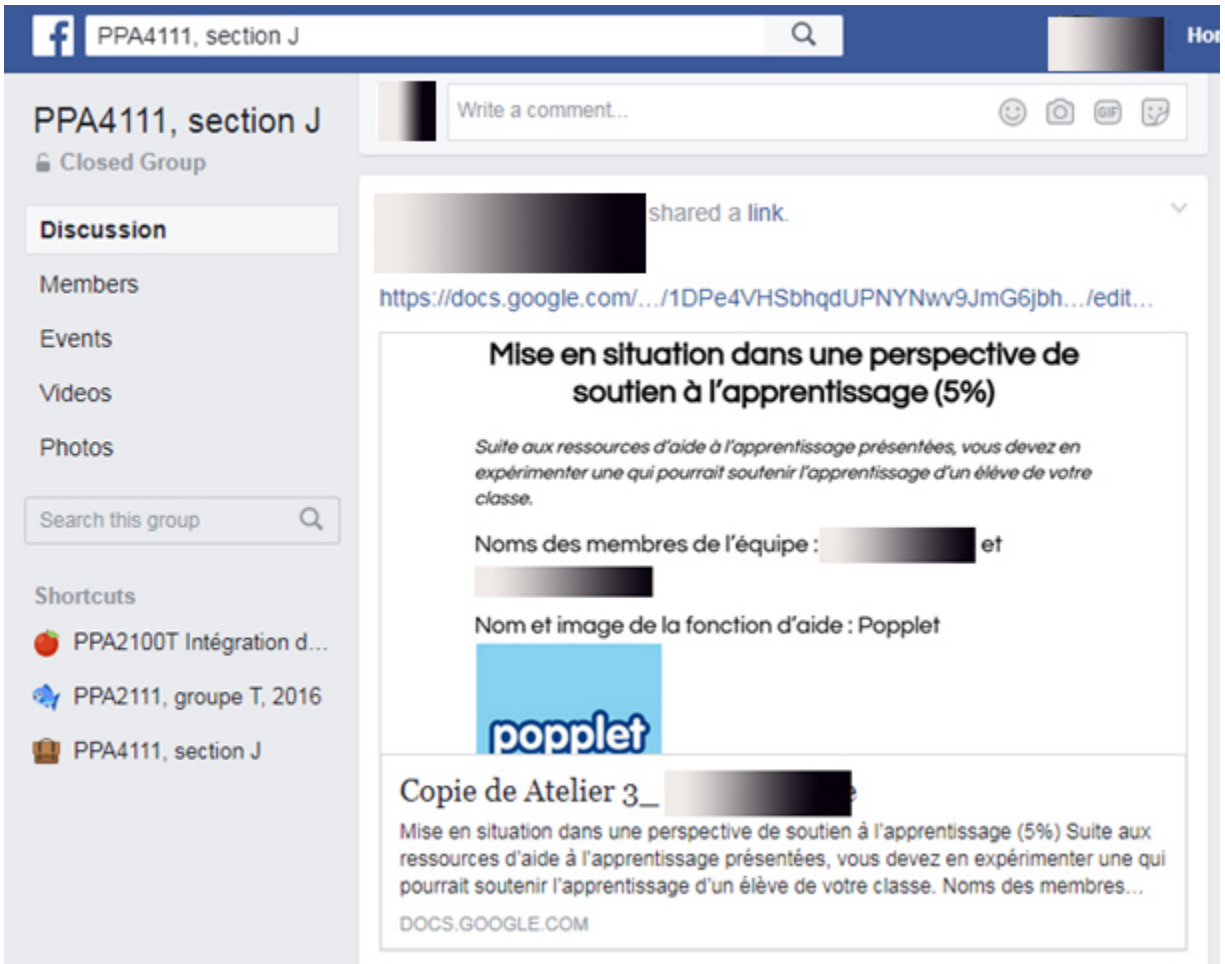


Figure 27. Screenshot of a collaborative assessment on the Facebook course group.

Dormitory roommates are typical in the Chinese university system; usually, about 4–6 students from the same program live together in the university dorms, during the four years of their undergraduate program. Because they spend time together every day, the degree of familiarity among them is much higher than with other students.

Participant SCH2 (Chinese student) stated that:

*Some of our assignments are grouped by dormitory. In our dormitory, generally, there are 4 to 6 students living together. We often discuss the distribution of assignments and share our views about assignments in the dormitory QQ group. Once each team member's work is completed, we upload these documents to our QQ group; every member can check and give suggestions. Then we will merge the documents into one large file and sign our names. Of course, sometimes during teamwork, some members only complete a small part of the assessment, and others do a lot. The score obtained is based on the content of each person. We work together to get the equitable score. I feel that is fair, and I like the model.*

All of them get help from classmates in collaboration and also fair scores. This is the main reason why Chinese students want to participate in collaborative learning activities.

#### **9.3.3.1.4 Discussion between teacher and students**

Normally, Canadian teachers used the feedback space under every activity function, and they also use the default discussion function located on the Facebook group PPA4111, section J, and the Facebook group PPA2100.

The content of discussion in the social software group included:

- The teachers answering students' questions
- The teachers providing help and support
- The teachers providing instructions about the assignments
- The teachers providing feedback on the events posted by students
- The teachers cooperating with students on a project
- The teachers sharing information related to the course. The information included: texts, website links, pictures, videos, audios, documents, applications, free books, New Year greetings, Google Doc and Sheet, project samples, assignment samples, mobile screenshots and timetables.

Participant TCA2 (Canadian teacher) stated that:

*The teacher plays an important role in Facebook group organizing processes. I encourage students to share work socially and facilitate discussions between students.*

The teacher described her leading role in the Facebook group PPA2100.

Participant SCA1 (Canadian student) said that:

*My classmates and I browsed the teachers' and classmates' personal profiles on Facebook; and we added the teachers and students as friends on the social software.*

The student thinks that the relationship between her, the teacher and the other students has become stronger in the Facebook course group PPA2100.

## **9.3.4 Interaction among students**

### **Canadian students**

Unlike Chinese students, Canadian students not only received sources shared by their teacher, but they also found, shared and accessed various sources of information to respond to the shared posts and threads. Their sharing activities were very frequent in the group. The successful experiences of other classmates seemed to motivate some of their actions.

#### **9.3.4.1.1 Observational learning**

Observational learning is not limited to observing and learning the behaviour of others; in some situations, the observer can only learn the behaviour of their peer's experience (Bandura, 1977). The social software group provides an environment in which learners observe and imitate the behaviour of other students.

A phenomenon was recorded in Facebook group PPA4111, section J. One of the students participated in an online programming course, and when she finally obtained her certificate, she showed it in the group (Figure 28). Many of her classmates then clicked the "like" button. A few days later, many students had participated in the online training and obtained the same certificate.





Figure 28. Screenshot of the student’s certificate of completion on the Facebook course group.

#### 9.3.4.1.2 Self-esteem in QQ group discussion

Bandura (2011) argued that anxiety and phobic disorder are the most common modes of human annoyance in social cognitive theory. They were the first phenomena to which self-efficacy theory was applied. Most people often worried about how others looked at them, and thus they suffered the anxiety of social evaluation.

Participant SCA1 (the Canadian student) stated that:

*Asynchronous communication in the Facebook group, I think, is helpful for students. It is not like face-to-face talking to discuss some questions with classmates or collaborators. We have more time to think about how to answer, and we do not need to react immediately.*

When students answered questions raised by other students or teachers, they often needed some time to think. The asynchronous communication in a social software group gave buffer time to allow students to prepare a good answer.

In the QQ groups, teachers often are the sole input providers or problem solvers. Chinese students rarely shared resources they found on their own. Instead, they asked questions to the teacher through the QQ dialogue window.

Participant TCH2 (Chinese teacher) said that:

*During the collaboration in the QQ course group, if a student had some questions for the part of the task he is responsible for or problems related to his personal privacy, I used to contact him through the personal QQ window. I need to consider the psychological factors of these students because some of them feel it shows inferiority to ask questions in a large QQ group as they believe that some other members in the same group might think that 'you cannot even solve such a simple problem.' With the feeling that others will look down upon them, they worry about a bad impression they might give to other members of the collaborative project. From this point of view, I respected the student's choice. For example, in my course, some students may have difficulties dealing with a certain computer program and feel too embarrassed to ask questions in the QQ group. In such cases, I would likely make a short teaching video specifically on the student's problem or find some teaching materials on the Internet to help those students solve their problems.*

Since sometimes the discussion in the course group made students uncomfortable, the teacher used the individual QQ dialogue window to communicate with students, and students could get information and help from the teacher one-on-one. The Chinese teacher believed that such a use of social software provided a way to protect the students' privacy.

Some students liked to ask the teacher questions in the QQ group, and other students liked to open a small conversation group to discuss the study question with their dormitory roommates. A Chinese student said he felt embarrassed to ask questions in the teacher's group, but that he felt more unrestrained and confident with his dormitory roommates.

#### **9.3.4.1.3 Less distance between teachers and students**

Sandry (2014) said that students and teachers could be brought into an ethical proximity by the media they shared and discussed online on Facebook.

In addition to the above Canadian teacher's practice, the Chinese teachers shared registration links for competitions with students. For example, they encouraged students to participate in some online courseware design competitions. Furthermore, they evaluated the design of the course in which they participated through the QQ Group voting survey application.

It is worth mentioning that, in this QQ group, I found that there were some Chinese students who felt that one assignment was too difficult; they asked the teacher whether he could reduce the workload of the assignment. This situation occurs very rarely in a real classroom, but in the QQ group, where the students did not have to interact face to face with the teacher, they found the courage to express these demands. It seems that the communication in the group narrowed the distance between the teacher and students.

A bargaining discussion in the QQ course group of Multimedia Courseware Design and Production went as follows:

***Student A @ teacher asks:*** *Teacher, do we have to record the video of the person in the mini class video? Can we record only the sound?*

***Teacher replies to the student and @ all students:*** *No, you have to do as required or refer to the case sample.*

***Student B @ teacher:*** *Teacher, does the person in the video have to appear throughout the video? Can we just record the person for a dozen seconds of the video in the beginning alone???*

***Student C:*** *Good question.*

***Student A:*** *I wanted to ask the same question.*

***Teacher @ student B:*** *No, the person should also appear during the junction times.*

***Student D @ teacher:*** *Teacher, must we do subtitles?*

***Teacher:*** *Yes, use the software xxx to do so. This is the plus point of the work, there is no subtraction. For a tutorial sent to the group, please see the group files.*

***Student A posted one expression picture of complaint and said:*** *Teacher, this is a lot of work, please let me not do it.*

***Student F:*** *I don't want to do it.*

### **9.3.5 Interaction between the students and learning content in groups**

#### **Canada**

Participant SCA3 (Canadian student) said that:

*The Facebook group is a good social tool that can be used as an additional information channel.*

The students agreed that the Facebook group helped them to get additional resources relevant to the course.

### **China**

After the interview and the observations, I found that using the QQ group to send class-related notices and share information is normal in the Chinese universities. In many universities, the teacher does not create the QQ class group or the QQ course group; the students spontaneously create their own QQ group, and the teachers work with it, because the QQ group makes the transmission of information very convenient. Additionally, due to the fact that every student has a mobile phone in China and that the mobile phone Internet access fees are very low, students can easily receive information through QQ. Every student has the habit of viewing the QQ to get information, so teachers can be certain that every student has seen the information they sent. In fact, even in primary and secondary schools, Chinese students already have their own QQ class group.

This study found some different ways that students are using social software for learning both in Canada and China.

#### **9.3.5.1.1 Organization of learning resources on social software group**

Students keep, save, curate and share course resources through social software. The Canadian students in the course PPA4111 use Google Drive to gather study materials and they use Google Docs and Google Sheets for team projects and sharing notes.



Figure 29. Screenshot the teacher shared of a Google sheet for teamwork.



Figure 30. Screenshot of Facebook group PPA4111 of the Université de Montréal: students post the resource Pinterest.com.

The Chinese teacher of the 2015 Educational Technology program used the QQ group files to upload his assignment requirements.



Figure 31. Screenshot of the QQ class group for the 2015 Educational technology program at the Guangxi Teachers Education University.

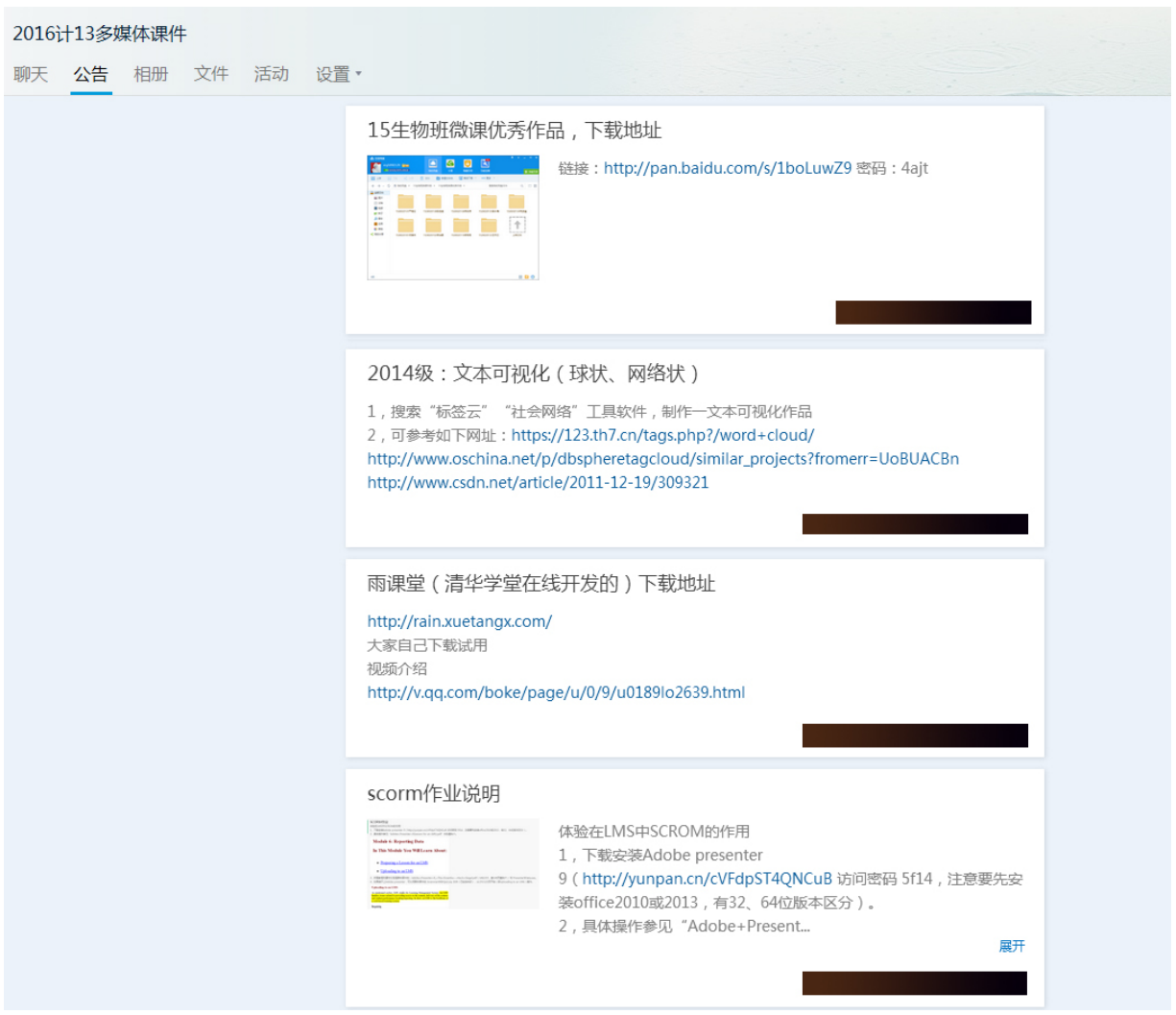


Figure 32. Screenshot of the QQ course group’s announcement (Multimedia Courseware Design and Production course).

The Chinese teacher also shared students’ work deemed excellent, previous grades and corrections of student assignments and assignment instructions on the QQ course group.

**9.3.5.1.2 Social software resources as supplemental materials**

Social software can help identify additional content to reinforce or extend learning. Teachers from both countries share website links with their students. These website links are shown in Table 15.



**Table 15** Teachers share website links on Facebook and QQ course groups

Website links that Canadian teachers share on Facebook groups	Website links that Chinese teachers share on QQ groups
<a href="http://www.crifpe.ca/">http://www.crifpe.ca/</a> Training and the teaching profession	<a href="http://pan.baidu.com/s/1boLuwZ9">http://pan.baidu.com/s/1boLuwZ9</a> Excellent works about micro lessons
<a href="http://csdm.ca/">http://csdm.ca/</a> Montreal school board  <a href="https://ecolebranchee.com/">https://ecolebranchee.com/</a> Magazine about teaching in the digital era	<a href="http://guangxi.xuetangx.com/">http://guangxi.xuetangx.com/</a> Online School - Branch of Guangxi Center  <a href="https://ispring-free.en.softonic.com/">https://ispring-free.en.softonic.com/</a> Download of Spring address software.
<a href="https://twitter.com/MathPourVrai">https://twitter.com/MathPourVrai</a> The #MathPourVrai project is really stimulating and meaningful for elementary students.	<a href="https://www.baidu.com/link?url=v17A3IDrLX5VNxiHOcIUUV5eAV3r53viarpQPmOVfLvuCBMFph0QIUdPjQiNb5vRwgDNsv2IP-1Sotn7FU6LwKBbTxMXwLP4RZi-YFsqyau7&amp;wd=&amp;eqid=be73569f0000451c00000004598a1e6">https://www.baidu.com/link?url=v17A3IDrLX5VNxiHOcIUUV5eAV3r53viarpQPmOVfLvuCBMFph0QIUdPjQiNb5vRwgDNsv2IP-1Sotn7FU6LwKBbTxMXwLP4RZi-YFsqyau7&amp;wd=&amp;eqid=be73569f0000451c00000004598a1e6</a> Camtasia 9 Chinese language version description
<a href="http://fse.umontreal.ca">http://fse.umontreal.ca</a> News from the DGTIC about iPad loans at the Université de Montréal	<a href="http://mp.weixin.qq.com/s?biz=MzA5NjU0NjQ2Mw==&amp;mid=2650240602&amp;idx=1&amp;sn=21bde5e8f9aad149a33c154bc3a39ae5&amp;chksm=88adadaabfda24bc84fe75b4e785fdc95b89fcf546e97200907d492aedad316038583a1f4dc8&amp;mpshare=1&amp;scene=23&amp;srcid=0706ojUNgYbgZfoJPnvad7lr#rd">http://mp.weixin.qq.com/s?biz=MzA5NjU0NjQ2Mw==&amp;mid=2650240602&amp;idx=1&amp;sn=21bde5e8f9aad149a33c154bc3a39ae5&amp;chksm=88adadaabfda24bc84fe75b4e785fdc95b89fcf546e97200907d492aedad316038583a1f4dc8&amp;mpshare=1&amp;scene=23&amp;srcid=0706ojUNgYbgZfoJPnvad7lr#rd</a> “Body Parts” Micro Lesson Appreciation
<a href="http://clair2017.wikispaces.com/">http://clair2017.wikispaces.com/</a> Create interactive lessons using any digital content including wikis with free product.	<a href="http://www.xuetangx.com/">http://www.xuetangx.com/</a> A Chinese MOOC website.
<a href="https://education.smarttech.com">https://education.smarttech.com</a> SMART Notebook is now only available as part of the SMART educational suite.	<a href="http://www.edu.cn/xxh/media/zcjd/fmbd/201704/t20170412_1506208.shtml">http://www.edu.cn/xxh/media/zcjd/fmbd/201704/t20170412_1506208.shtml</a> The Education INFO Web site News: MOOC + SPOC + flip classroom can change teaching
<a href="http://www.rcinet.ca">http://www.rcinet.ca</a> Radio Canada international news	<a href="http://www.360doc.com/content/17/0114/21/38637110_622490030.shtml">http://www.360doc.com/content/17/0114/21/38637110_622490030.shtml</a> The 360 Website News: phone images projected onto the computer.
<a href="https://www.canva.com/">https://www.canva.com/</a> Easily create beautiful designs + documents.	<a href="http://www.sohu.com/a/136783955_260517">http://www.sohu.com/a/136783955_260517</a> The Sohu Web site News: Do you know where to look for useful PPT templates?

<p><a href="https://pixabay.com">https://pixabay.com</a> Free images and videos</p>	<p><a href="http://www.jianshu.com/p/5c3c3fd96a8a">http://www.jianshu.com/p/5c3c3fd96a8a</a> Introduction to Office Mix, a Microsoft program for Online Education Services</p>
<p><a href="https://www.apple.com/itunes/download/">https://www.apple.com/itunes/download/</a> Apple Apps <a href="http://www.super-julie.fr/apps/pango-gratuit/">http://www.super-julie.fr/apps/pango-gratuit/</a> Free app-book for toddlers</p>	<p><a href="http://d.wanfangdata.com.cn/Periodical/xxjsjy201624025">http://d.wanfangdata.com.cn/Periodical/xxjsjy201624025</a> China Information Technology Education Journal: Micro class production tools (3) – the method of screen recording</p>
<p><a href="http://quebecissime.net/fr/accueil">http://quebecissime.net/fr/accueil</a> Information about the Québec Issime troupe.</p>	<p><a href="http://www.vccoo.com/v/av620o">http://www.vccoo.com/v/av620o</a> [Resource sharing]: “Designed micro-class” with book resources and voice broadcast courseware.</p>
<p><a href="https://fr.padlet.com/kimberlyfoley55/xcmrmfolmvpy">https://fr.padlet.com/kimberlyfoley55/xcmrmfolmvpy</a> A wall to share information.</p>	<p><a href="http://mp.weixin.qq.com/s/IoRP5U7gHPju3kMHV9ulrA">http://mp.weixin.qq.com/s/IoRP5U7gHPju3kMHV9ulrA</a> WeChat article: Micro-class + two-dimensional code to help the art appreciation class “Chinese masterpiece”</p>
<p><a href="https://evelyneviret.wordpress.com/">https://evelyneviret.wordpress.com/</a> Some ideas on the use of ICST in class</p>	<p><a href="http://mp.weixin.qq.com/s/chKylW7Z5qGE95yqwhROeA">http://mp.weixin.qq.com/s/chKylW7Z5qGE95yqwhROeA</a> WeChat article: MOOC: Constructing New Ecology of Teaching</p>
<p><a href="http://www.pearltrees.com/marc.guerin/usages-pedagogiques-ipad/id6385712">http://www.pearltrees.com/marc.guerin/usages-pedagogiques-ipad/id6385712</a> iPad pedagogy uses</p>	<p>WeChat Public Platform account: wksjzz. Wang Yu’s Design and Production of Micro course</p>
<p><a href="http://www.pouvoirdelire.com/">http://www.pouvoirdelire.com/</a> This site includes web resources related to reading.</p>	<p>WeChat Public Platform account: hxy-haoxingyun. Educational Technology Informatization.</p>
<p><a href="http://sosflsqc.wixsite.com/sosfls">http://sosflsqc.wixsite.com/sosfls</a> A site for creating websites</p>	<p>WeChat Public Platform account: sjtumoooc. The Reconstruction of Education under the Background of Mooc</p>
<p><a href="http://www.symbaloo.com/mix/csmbtic-francais1">http://www.symbaloo.com/mix/csmbtic-francais1</a> Webmix of CSMB Resources on ICT and French</p>	<p><a href="https://mp.weixin.qq.com/s?src=3&amp;timestamp=1502301813&amp;ver=1&amp;signature=SIEmwFcgpPb64An4l2O31h72hjN9Ld4aXSJTbZcgno-Sp-IF4BS3xFh2HKozkarhkK3QzOfzT9b0vhZa9GFs2UlsYsDah8UzWygHD-2NxdHFG4c8fNmflY0CjCUCpG0FtCPxX-tKPE4jUZIXZ6DInQ==">https://mp.weixin.qq.com/s?src=3&amp;timestamp=1502301813&amp;ver=1&amp;signature=SIEmwFcgpPb64An4l2O31h72hjN9Ld4aXSJTbZcgno-Sp-IF4BS3xFh2HKozkarhkK3QzOfzT9b0vhZa9GFs2UlsYsDah8UzWygHD-2NxdHFG4c8fNmflY0CjCUCpG0FtCPxX-tKPE4jUZIXZ6DInQ==</a> WeChat article: Intel-project-bridge, the future classroom.</p>
<p><a href="https://www.learnboost.com/">https://www.learnboost.com/</a></p>	<p><a href="http://c.blwt.com/h.3dLLYw?cv=EsBOaDz92&amp;sm=e4ad94">http://c.blwt.com/h.3dLLYw?cv=EsBOaDz92&amp;sm=e4ad94</a></p>

All the software to manage the classroom and school.	Taobao (an online shopping site): blue bans M2200 computer camera and price
<a href="http://fr.wikihow.com">http://fr.wikihow.com</a> A wiki website.	<a href="https://mp.weixin.qq.com/s?src=3&amp;timestamp=1502301955&amp;ver=1&amp;signature=s8NI2*kaMjH2rR2bac5CbXxnZwofL1kyIx2gerUcHzQVdnj94onEp2t-iHNqg5dPVnmCOYddNWotiQPC-kOfzpNKT0uAZsLT9nUGoT*IJfg5dE5cGQOxkFt1wcBJ9cJ0O2IWd16SVcbD1cWlnLIMIGcvzVCm*5MZTo11Fkimblw=">https://mp.weixin.qq.com/s?src=3&amp;timestamp=1502301955&amp;ver=1&amp;signature=s8NI2*kaMjH2rR2bac5CbXxnZwofL1kyIx2gerUcHzQVdnj94onEp2t-iHNqg5dPVnmCOYddNWotiQPC-kOfzpNKT0uAZsLT9nUGoT*IJfg5dE5cGQOxkFt1wcBJ9cJ0O2IWd16SVcbD1cWlnLIMIGcvzVCm*5MZTo11Fkimblw=</a> WeChat article: UAV night light painting photography tutorial!
<a href="http://slideplayer.fr/">http://slideplayer.fr/</a> Place slide presentations on the user's site.	
<a href="https://soundcloud.com/">https://soundcloud.com/</a> Save tracks, follow artists and build playlists.	
<a href="https://play.kahoot.it/#/">https://play.kahoot.it/#/</a> Kahoot quiz.	
<a href="https://www.emaze.com">https://www.emaze.com</a> Create, share and e-maze presentation website	
<a href="https://classedeaudrey.jimdo.com/">https://classedeaudrey.jimdo.com/</a> This site is intended for the educational community of the École Saint-Noël-Chabanel in Toronto. Parents, teachers, management, teacher assistants and educators will be able to find a wealth of resources for the class in order to diversify learning and teaching.	
<a href="http://www.acelf.ca/">http://www.acelf.ca/</a> Canadian Language Education Association	
<a href="https://www.powtoon.com/">https://www.powtoon.com/</a> Create Animated Videos & Presentations	
<a href="http://www.ecoleplurielle.ca/">http://www.ecoleplurielle.ca/</a> Portal for the Integration of Students of Immigration in Quebec and Intercultural Education <a href="https://www.washingtonpost.com/news">https://www.washingtonpost.com/news</a> The Washington Post	

<a href="https://www.facebook.com/groups/lesticeneducation/?refer=mentions">https://www.facebook.com/groups/lesticeneducation/?refer=mentions</a> A Facebook group about ICT education	
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Rich online resources become supplemental materials for courses; teachers from both countries seek the latest and most useful information related to the course and share it with their students in the social software groups.

It is worth noting that the emergence of new mobile phone applications facilitates and increases access to network resources.

Canadian teachers and students also like to use the collection-building tool Pinterest (<https://www.pinterest.com>) to search for information and then share it with the group. “Pinterest is a web and mobile application start up that operates a software system designed to discover information on the World Wide Web” (Wikipedia, n.d.-a).

Chinese teachers posted many resources from WeChat articles or from the WeChat office account. WeChat is a mobile application. WeChat office account “supports users who wish to register as an official account, which enables them to push feeds to subscribers, interact with subscribers and provide them with services” (Wikipedia, 2014).

Table 16 shows how teachers share documents in social software groups for student learning.

**Table 16** *Teachers share documents on Facebook and QQ course groups*

Canadian teachers share documents on Facebook group	Chinese teachers share documents on QQ group
Google Drive, Google Docs, Google Sheets.	QQ group file, QQ group announcement
<a href="https://spark.adobe.com/video/47L5FipYz6tQb?v=582">https://spark.adobe.com/video/47L5FipYz6tQb?v=582</a> ICT programming videos	Baiduyun
<a href="http://www.elodil.umontreal.ca/videos/">http://www.elodil.umontreal.ca/videos/</a> Videos from the website of the Université de Montréal	

Canadian participants are accustomed to using the cloud (e.g., Google docs) as a platform to submit assignments, share documents and so on. Only a few students submit their assignments by email.

Table 17 shows the platforms used by teachers to share videos and playlists in social software groups for student learning.

**Table 17** *Teachers share videos and playlists on Facebook and QQ course groups*

Canadian teachers share video sites and playlists on Facebook group	Chinese teachers share video sites and playlists on QQ group
YouTube	Youku
Videos from other Facebook groups: <a href="http://www.facebook.com/groups/581370895401978/">www.facebook.com/groups/581370895401978/</a>	Toudu
	Videos from the QQ video website: <a href="https://v.qq.com/x/page/u0189lo2639.html">https://v.qq.com/x/page/u0189lo2639.html</a>
	Videos from the Sohu website: <a href="http://my.tv.sohu.com/pl/5806773/index.shtml">http://my.tv.sohu.com/pl/5806773/index.shtml</a>
	Videos from mobile phone app: WeChat

Video resources can help students visualize difficult-to-understand concepts and be linked to the teaching content. Therefore, the video links are also an important part of the resources shared by teachers.

The student interviewees in both countries joined many groups on social software.

SCA1 (Canadian student) said that she had joined five Facebook groups since she entered the Université de Montréal. There are three course groups—one for academic articles, one for professional work and one for professional teachers.

In contrast, the Chinese students joined more groups than the Canadian students.

In surveying the QQ group’s list of three Chinese student interviewees, I found that they joined dozens of groups. Seeking and joining QQ groups are common when students enter a class or a school in China. They and their peers have had their own QQ accounts since their

entry into primary schools. The groups they joined include QQ class groups, QQ course groups, QQ school community groups, QQ interest groups, part-time job groups and so on. As they grow older, changes are revealed in the various characteristics of their grouping preferences.

Participant SCH3 (Chinese student) showed me the QQ groups he created and joined since his entrance into junior high school. He had joined 71 groups, including school groups, class groups, course groups, university dormitory groups, live groups (e.g., driver’s license study group), hobby groups (e.g., reading group and computer game group), part time job groups and so on.

### 9.3.6 Categories of content analysis: Self-efficacy and social software groups

The following table shows the data obtained from six student interviewees. It shows the relationship between the students’ self-efficacy and their social software groups.

**Table 18** *Categories of content analysis: The relationship between self-efficacy and social software groups (Interview data for research question 2)*

Relationship between self-efficacy and social software groups	3 Canadian students	3 Chinese students
<p><b>Online learning environment</b></p> <p>Interaction in social software course groups resulted in gaining access to excellent notes.</p> <p>Positive:</p>	2	3
Negative:	1	
<p>Interaction on social software class groups resulted in gaining access to excellent notes.</p> <p>Positive:</p>	3	3
Negative:		
<p><b>Interaction between teacher and students in social software groups</b></p> <p>Teacher’s support is helpful to understand basic concepts of course.</p> <p>Positive:</p>	3	2

Negative:		1
Classmates' support is helpful to complete collaborative project and course examinations. Positive:	3	3
Negative:		1
Trust in teachers and classmates. Positive:	3	3
Negative:		
<b>Interaction between student and learning content</b> I am confident that I can understand the most difficult points of the course through the resources of the group. Positive:	3	1
Negative:		2
<b>Interaction between student and learning behaviours</b> Observing the learning patterns of others in the group contributed to my learning outcomes. Positive:	3	2
Negative:		1
Private conversations (one-to-one Facebook messenger or QQ dialogue window) protect my self-esteem. Positive:	2	3
Negative:	1	
The interaction in the social software group gives me a sense of belonging. Positive:	3	3
Negative:		

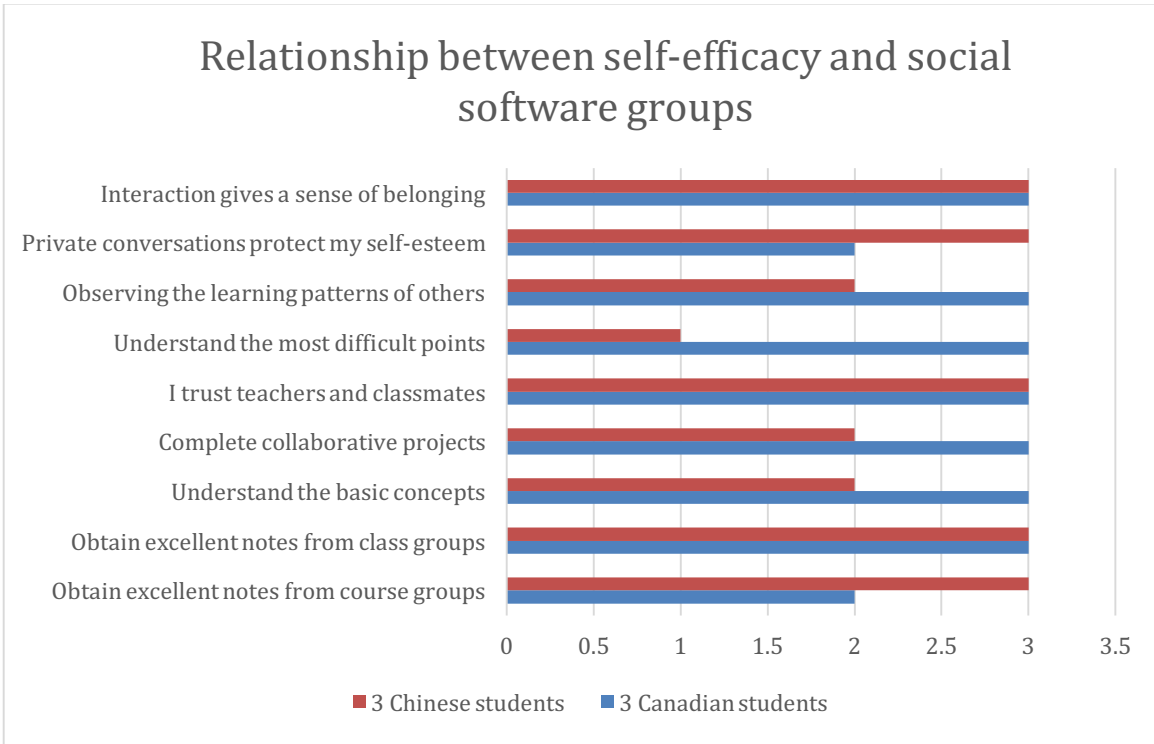


Figure 33. The bar chart of relationship between self-efficacy and social software groups.

Figure 33, which shows the most obvious difference between the Canadian and Chinese students, includes:

(1) Private conversations (one-to-one Facebook messenger or QQ dialogue window) protect my self-esteem.

(2) Observing the learning patterns of others in the group has contributed to my learning outcomes.

(3) I am confident that I can understand the most difficult points of the course through the resources available on the group.

Canadian and Chinese students admitted that they joined class groups to get access to excellent course notes. Two Canadian and Chinese students admitted that the teacher’s support helped them to understand the basic concepts of the course.

Participant SCA3 (Canadian student) said that:

*I believe that students from the Facebook course group take the same course in a different class. Therefore, we do not have much discussion. This is not relevant to getting*



*good grades. We discuss the learning questions in the Facebook class group more than in the Facebook course group.*

Participant SCH1 (Chinese student) did not agree and said that:

*Personally, I would prefer for the teacher to explain the knowledge in the classroom. I think face-to-face explanation of the basic concepts of the course would make it clearer to understand.*

This student feels that she is more willing to ask the teacher face to face about the concepts that are difficult to understand or when she faces problems in learning.

Three Canadian students believed that support from their classmates was helpful to complete the collaborative project and course examinations. Participant SCH3 (Chinese student) said that:

*I don't like to ask the teacher questions in the QQ class group or in the QQ course group. I think if I ask the question before everybody, they might look down upon me and say, 'this guy doesn't understand this simple question.' I prefer asking my best friends in the QQ window one-to-one, rather than in the QQ group.*

Both countries' students argued that classmates' support was helpful to complete the collaborative project and course examinations; they also all trusted their teacher.

The Canadian students felt that they were confident that they could understand the most difficult points of the course through the resources made available to the group. Just one Chinese student felt the same. The other two students preferred discussions with classmates. Participant SCH1 (Chinese student) said that:

*Even after getting the resources in the QQ class group, I don't think that I am able to independently understand the most difficult points of the course. I become more confident when we discuss to solve the problem and understand the most difficult points after the teacher or students post or share resources.*

The Canadian students admitted that observing the learning patterns of others in the group helped them attain some learning goals. One student had taken an online programming diploma course and displayed the diploma picture on her Facebook course group. Seeing the picture, many classmates also signed up for the online program "an hour of code" too.

Chinese students rarely contributed to the sharing of resources in social software groups. They accepted the teacher's shared files, and they discussed these resources in the group, but

they rarely took the initiative to find resources associated with the course and share them with the group.

Participant SCH2 (Chinese student) said that:

*We are accustomed to accepting the files sent by the teacher. We then follow the teacher's requirements for the assessments.*

Two Canadian students and three Chinese students believed that private conversations (one-to-one Facebook messenger or QQ dialogue window) protected their self-esteem.

Participant SCA1 (Canadian student) said that:

*Some students ask questions in the group. If I can answer a question, I post the answer in the group, such as a question on French grammar, and so on. If I cannot answer and I want to know the answer, I ask students and teachers privately using Facebook messenger.*

All the interviewees said that the interaction in the social software group gave them a sense of belonging.

## **9.4 Results of the second research question**

The results seem to indicate that collaborative activities in the social software group positively influence the students' observational learning and self-esteem, contribute to their sense of belonging and possibly develop their self-efficacy.

### **9.4.1 Social software group offers a virtual learning environment**

Social software was not initially created as a learning tool, but the functions it offers can support learning in numerous ways. The popularity of Facebook and QQ among university students allows educators to use it along with their teaching. Social software can be used outside the classroom by students and teachers; its reach extends beyond the physical walls of the classroom. Students interact with other students almost instantly, but they have enough time to reflect on the learning tasks, review and accept new learning materials and information and get feedback from the teacher and their classmates. The results point to a possible positive relationship between the effect of Internet self-efficacy, the need to belong and collective self-esteem due to the engagement and interaction in the social software groups.

### **9.4.2 Social software group as a formal tool for education**

The Canadian student and teacher interviewees admit that, in the past, connections on Facebook were considered informal, but agree that it has become a formal channel to obtain learning resources.

In China, the teacher interviewees were early adopters of QQ. This generation has been using QQ for nearly 20 years, and they are very familiar with its various functions. After they became teachers, they continued to use QQ groups and adopted it as a supplement for classroom teaching. In Chinese universities, QQ class groups are generally responsible for the social and administrative notices, and QQ course groups are responsible for course learning materials.

In short, social software allows students and teachers to connect beyond the boundaries of the classroom and the restrictions of time and space. It can extend the learning outside the class to create dynamic situations. Even if the teaching has been given in a classroom, the learning and interaction can continue outside the classroom, on social software.

With the development of mobile phone apps, social software has become very popular among university students and teachers. From my interviews and observations, I found that social software has become a part of educational tools. It gives students the opportunity to collaborate, discuss, build communities and improve their information and communications technology skills.

### **9.4.3 Learning behaviour and observational learning in groups**

Bandura (1997) demonstrated that people's behaviour could be determined by their environment. People can observe others' negative and positive behaviours to gain experiences which contribute to their perceived self-efficacy.

After observing the social software groups, I noticed that the main student behaviours in the groups were:

- Creating or joining groups to obtain the course information
- Engaging in group conversations or joining chats
- Collaborating and sharing study sources
- Organizing learning resources
- Interacting with peers and teachers

Thus, the students' involvement in the social software groups is not only for academic purposes, but also for socialization, which brings us back to the observations made about social integration in chapter 8.

### **9.4.4 Sharing learning resources**

In the contexts studied, social software class groups become the main channel that students use to access their class and university information. Social software course groups become the main channel that students use to access and share course resources.

The social software group becomes the repository for online information. The teacher creates a dynamic educational environment where students can interact, share and discover

learning resources, communicate and collaborate in various ways. The support of rich learning materials may allow students to understand the learning content and concepts better.

In contrast to their previous practice of classroom teaching without a social software course group, the interviewed teachers said that they were more likely to share videos with students and give students online guidance. For example, a Chinese teacher (his course is Courseware Design and Production) mentioned that, for the operation of video capture technology, there were too many online videos related to tutorials. He shared these videos with his students so they could watch them at their own pace. They then could watch them slowly, pause and watch again as needed. This made it easier to understand the procedure.



Figure 34. Information resources for the Facebook course group.

The Canadian students get access to learning resources in Facebook course groups. These include discussions on Facebook group, Google docs, Google drive, videos on YouTube, Apps on iTunes, websites, Wikipedia, conversations on Skype, information from Pinterest and news and academic information on Twitter.

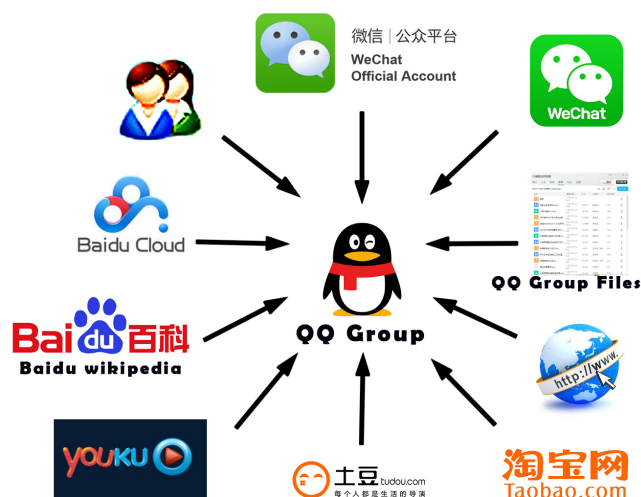


Figure 35. Information resources for the QQ course group.

The Chinese students get access to learning resources on their QQ course group. These include discussions in the QQ group, QQ files, the storage of Baiduyun, videos on Youku or Tudou, articles from WeChat, content from WeChat’s official account, websites, Baidu-Baike and Taobao (teaching supply prices).

It is interesting to note that, by observing the course resources shared by the Canadian students and teachers on Pinterest and the course resources shared by Chinese students and teachers on the WeChat official account, I found that the two mobile phone applications (Pinterest and WeChat) served more as an aggregation of network content for gathering specific and professional information. People used to seek information using web search engines, but mobile phones apps have expanded the conventional search model.

#### 9.4.5 Self-efficacy and social software group

The results show that Canadian students agreed with these different statements:

(1) Interaction in social software class groups resulted in gaining access to excellent notes.

(2) The teacher’s support was helpful to understand the basic concepts of the course.

(3) I am confident that I can understand the most difficult points of the course through the resources of the group.

(4) I trust the teacher and my classmates.

(5) My classmates' support is helpful to complete collaborative projects and course examinations.

(6) Observing the learning patterns of others in the group contributed to my learning outcomes.

(7) The interaction in the social software group gives me a sense of belonging.

The Canadian students think that they are likely to discuss study questions on the Facebook course group. They are actively involved in discussions and collaborations and they seem to become confident about mastering difficult points of the course.

The Chinese students agreed with the following statements:

(1) Private conversations (one-to-one QQ dialogue window) protect my self-esteem.

(2) Interaction in social software class groups resulted in gaining access to excellent notes.

(3) Interaction in social software course groups resulted in getting access to excellent notes.

(4) I trust the teachers and my classmates.

(5) My classmates' support is helpful to complete collaborative projects and course examinations.

The Chinese students are more likely to discuss study questions on the QQ class group than the QQ course group. They pay more attention to the protection of self-esteem in group communication. Compared to Canadian students, they seem more eager to get the support of teachers and classmates in the learning process. Their confidence in their own capacities seems relatively weak.

#### **9.4.6 Self-esteem and sense of belonging**

Self-esteem affects the kinds of emotions that students express. Some Chinese students with low self-esteem are often uncomfortable sharing with the whole group during class

discussions, but QQ features a one-to-one window and a small conversation meeting group, which allow interactions between students and teachers or among students to become a private activity. Students with low self-esteem were more likely to use these features to connect with other students or the teacher. They perceived it as a safe place that reduces the risk of awkwardness and anxiety in face of the whole group.

Social software groups offer a space in which students can feel like they belong because of the communication and information exchange with others. They can get the social and academic support of teachers and classmates, express their opinions and influence others. Therefore, it seems that social software can be a channel for acquiring or at least sustaining the students' sense of belonging, which, in turn, supports the social integration process.

## **9.5 Discussion of the second question**

Kim and Glassman (2013) suggest that self-efficacy influences our selection of activities; we do not choose to engage in activities if we believe they will end up in failure.

### **9.5.1 Effects of interaction in social software group: Self-efficacy**

The second research question was: How do teachers and their students use social software groups to promote student learning in Canada and China? I tried to answer this question by examining ways that teachers and students collaborate and learn, but also through a social learning theory lens that invokes the concept of self-efficacy.

Interactions in social software take many forms that include interactions between students and the social software environment, interactions between teacher and students, interactions among students, interactions between students and the learning content and interactions between students and the learning behaviour. Social software groups allow for many types of observational learning behaviour. Participation in collaborative activities and interactions in the social software groups seem to be positively related to self-efficacy.

Social learning theory (Bandura, 1977) states that self-efficacy is a form of self-evaluation and depends on the context. It reflects what individuals believe about what they can do. Daugherty, Eastin and Gangadharbatla (2005, p. 71) defined Internet self-efficacy as



people's capability to use and adopt web technologies, such as social software. It depends on their "confidence in their ability to successfully understand, navigate, and evaluate content online."

The Chinese student interviewees in this study seemed to interact easily with teachers and other students; they were more willing to participate in group discussions for their academic purpose. However, more real collaborative activities were taking place in the Canadian context. The differences between the Chinese and Canadian contexts are essentially qualitative.

During the group's collaboration, the students feel the teacher's and peers' constant support. Mature social software technology provides students with an efficient asynchronous collaboration system. This makes students more willing to engage in discussions with others and better able to gain a sense of belonging to the class and the university. In this context, learning takes place outside the usual class and also comes from resources shared in the social software groups by the teachers and students. All these actions seem to enhance student self-efficacy.

### **9.5.2 Comparison between Canadian and Chinese teachers and students**

The study questions found some differences in self-efficacy between the Canadian students and Chinese students. First, the Chinese students pay more attention to the protection of personal privacy in the acquisition of self-esteem in the group discussions, which is not the case for the Canadian students. This seems to suggest that the Chinese students do not like to take part in course group discussions and they are afraid that asking questions in this group could show weaknesses in front of their classmates. When they encounter more difficult questions, they prefer to ask the teacher or students in a more private way. This might explain why the activity level of the Chinese students is very low in the QQ course group. On the other hand, their activity is very high in the QQ class group, because there, the posts do not require them to expose much specialized course knowledge, which makes them feel freer to express their own ideas and needs. Though the Canadian students do not emphasize it, they also ask teachers questions privately, but they are more active in the Facebook course group.

The Canadian students emphasize that observing others' learning can help them acquire knowledge and eventually improve their academic performance. The Chinese students are also

concerned about questions raised by other students in the group and the teacher's replies, but they post far less often in the QQ course group than in the QQ class group. Finally, the Canadian students are confident that they understand the most difficult points in the course, while the Chinese students think they need to discuss these difficult points with their classmates and teachers.

The Canadian and Chinese teachers both promote student collaboration activities in the creation and management of the social software course groups. They show very little difference in this respect. The interviewed Canadian and Chinese teachers all have experience using social software in their course design. They provide and share a wealth of learning resources with their students to help them understand academic concepts and difficulties and encourage their students to interact and collaborate in various ways. They hope to promote academic success with these different uses of social software group.

## 10 Results: Third Research Question

The third research question is: How do teachers use social software to develop the students’ information literacy skills in the learning process?

### 10.1 Context

In an environment where information sources can be unreliable and social software users are increasingly social in their online behaviours, social software users’ level of trust in an information source is critical to their evaluation of the information (Hocevar, Flanagin & Metzger, 2014).

### 10.2 Methodology

#### 10.2.1 Instruments

The research instruments used for this research question are interviews with six students and four teachers. The interview questions were designed based on the “Literacy Competency: Standards for Higher Education.”

My interview questions for the third research question were divided into two parts:

**Table 19** *Interview questions for teachers for research question 3*

For teachers’ open questions
(1) Define information literacy. How do you define information literacy?
(2) How do you encourage students to develop their reflection and critical thinking skills through the use of social software? You can expand your description.

**Table 20** *Interview questions for students for research question 3*

For students’ question	For students’ open question
(1) How do you articulate and evaluate online information and its sources?	(1) Suppose you read a research article online that suggests your

(2) How do you retrieve information online or in person using a variety of methods?	graduate degree will not readily lead to a job in the job market. How do you judge whether the information is believable?
(3) How do you extract, record and manage the information and its sources?	
(4) How do you validate your understanding and interpretation of the information through discourse with other individuals, subject-area experts or practitioners?	
(5) How do you follow laws, regulations, institutional policies and etiquette related to the access and use of information resources?	

## 10.2.2 Participants

Four teachers and six undergraduate students were involved in the interviews.

## 10.3 Data collection and analysis

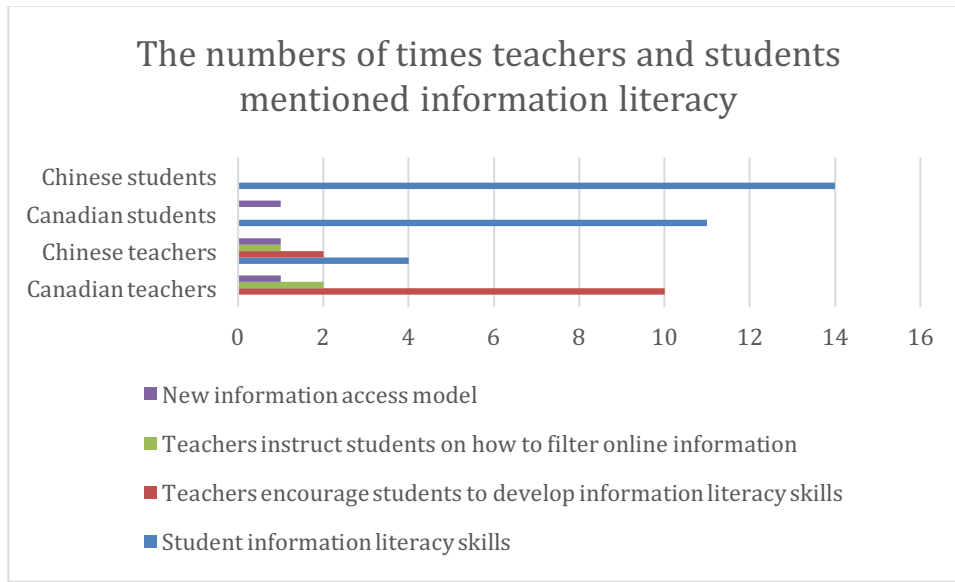
This part of the interviews is primarily based on open-ended questions.

### 10.3.1 Categories of content analysis

In Table 21, I present the main categories used in the content analysis of the third research question.

**Table 21** *Categories of content analysis – Interview data for research question 3*

Categories	Number of citations	Canadian teachers	Chinese teachers	Canadian students	Chinese students
<b>Student information literacy skills</b>	<b>29</b>		4	11	14
<b>Teachers encourage students to develop information literacy skills</b>	<b>12</b>	10	2		
<b>Teachers instruct students on how to filter online information</b>	<b>3</b>	2	1		
<b>New information access model</b>	<b>3</b>	1	1	1	



*Figure 36.* The bar chart shows the number of times teachers and students mentioned information literacy in the interviews.

The most obvious differences are these:

The category “Teachers encourage students to develop information literacy skills” is mentioned ten times by Canadian teachers compared to two times by Chinese teachers. The Canadian teachers seem more inclined to act on the development of their students’ information literacy skills. In contrast, Chinese teachers are not very active in promoting student information literacy skills.

The category “Student information literacy skills” was mentioned 14 times by Chinese students and 12 times by Canadian students. It was also mentioned 4 times by Chinese teachers.

Hence, although Chinese teachers are not prone to engage in information literacy development interventions, information literacy is a concern for both Chinese teachers and students. Based on the interviews, their discussions seem mainly focused on the students’ information literacy skills in the social software and Internet environment. The descriptions of how the teachers instructed the students to filter the information were repeated.

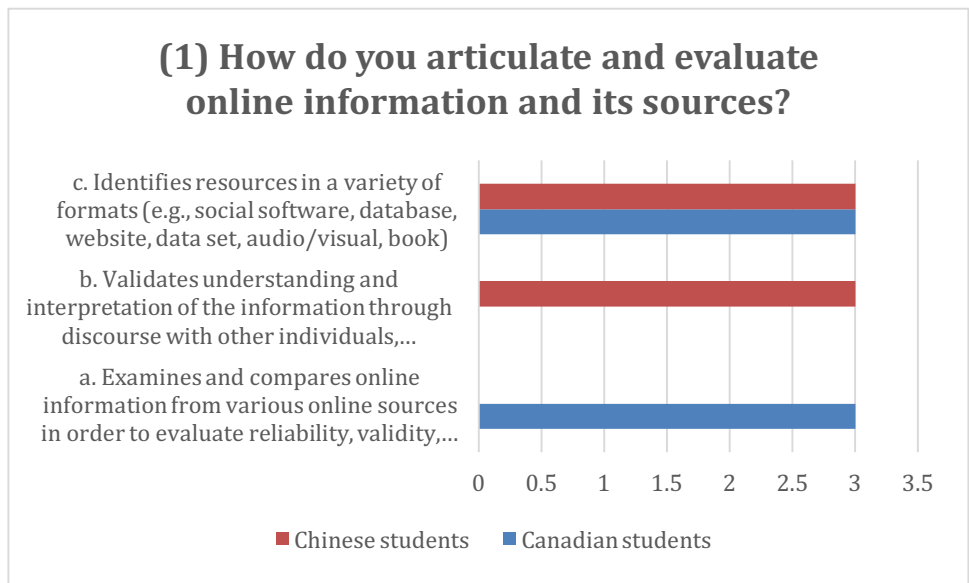
### 10.3.2 Students' information literacy skills

Using the American Library Association's Information Literacy Competency Standards for Higher Education, I categorized the information literacy skills of the six student interviewees as follows:

**Table 22** *Canadian and Chinese students' information literacy skills*

<b>(1) How do you articulate and evaluate online information and its sources?</b>	<b>Canadian students</b>	<b>Chinese students</b>
a. Examines and compares online information from various online sources in order to evaluate reliability, validity, accuracy, authority, timeliness and point of view or bias.	3	
b. Validates understanding and interpretation of the information through discourse with other individuals, subject-area experts or practitioners (e.g., teacher, peer or experienced person).		3
c. Identifies resources in a variety of formats (e.g., social software, database, website, data set, audio/visual and book).	3	3
<b>(2) How do you retrieve information online or in person using a variety of methods?</b>	<b>Canadian students</b>	<b>Chinese students</b>
a. Uses various online search engine systems.	3	3
b. Uses specialized online or in-person services (e.g., library, professional associations, institutional research offices, community resources, experts and practitioners).	1	
<b>(3) How do you extract, record and manage the information and its sources?</b>	<b>Canadian students</b>	<b>Chinese students</b>
a. Uses copy-and-paste software functions, photocopier, scanner and audio or visual equipment.	3	3
b. Uses technologies to manage and organize the information selected.	2	
<b>(4) How do you validate your understanding and interpretation of the information through discourse with other individuals, subject-area experts or practitioners?</b>	<b>Canadian students</b>	<b>Chinese students</b>
a. Participates in classroom and other discussions in social software course groups designed to encourage discourse on the topic.	3	1
<b>(5) How do you follow laws, regulations, institutional policies and etiquette related to the access and use of information resources?</b>	<b>Canadian students</b>	<b>Chinese students</b>

a. Uses approved passwords and other forms of ID to access information resources.	3	3
b. Preserves the integrity of information resources, equipment, systems and facilities.	3	2
c. Legally obtains, stores and disseminates text, data, images or sounds.	3	1
d. Demonstrates an understanding of what constitutes plagiarism and does not represent work attributable to others as his/her own.	3	1



*Figure 37.* Chinese and Canadian students articulate and evaluate online information and its sources.

The Figure 37 examines and compares how students articulate and evaluate online information from various online sources in order to appraise its reliability, validity, accuracy, authority, timeliness and possible bias. The Canadian students and Chinese do not seem to differ in this matter, but while the Chinese students tend to gather information from social software group friends, the Canadian students prefer to get information from various online sources by themselves.

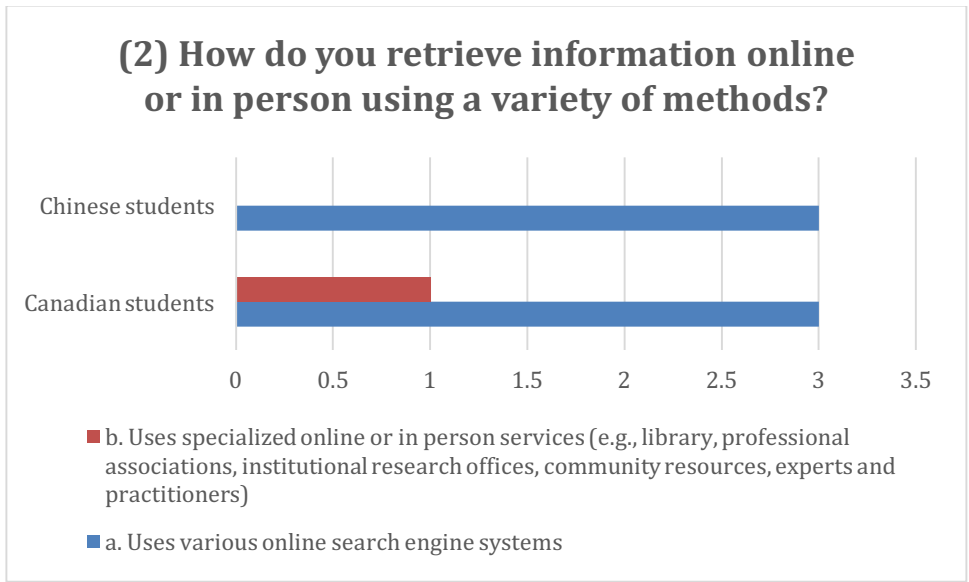


Figure 38. Retrieval methods used by Chinese and Canadian students.

The Figure 38 shows that Chinese and Canadian students use various online search engine systems. One Canadian student mentioned using specialized or in-person services.

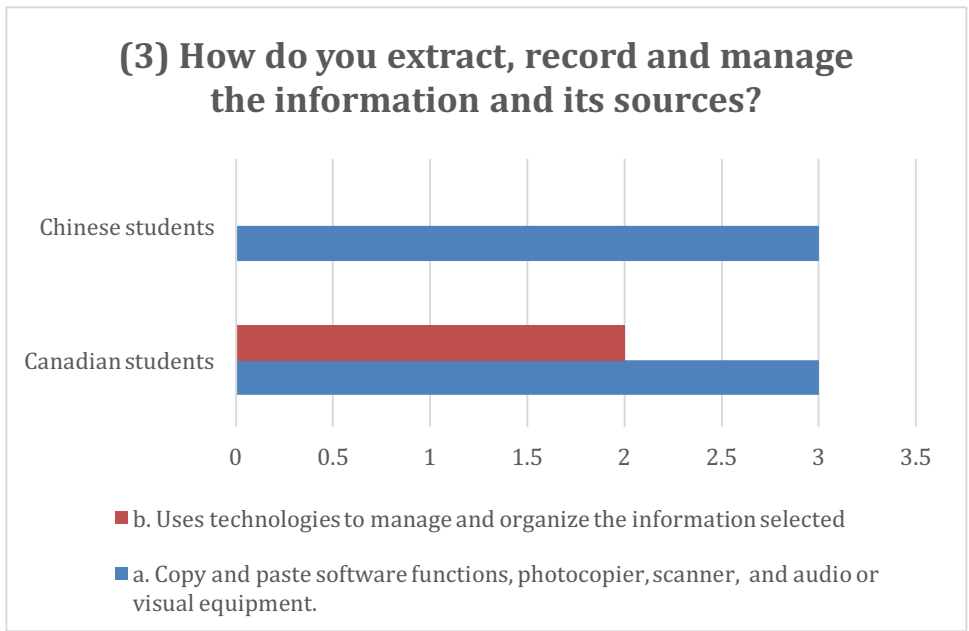
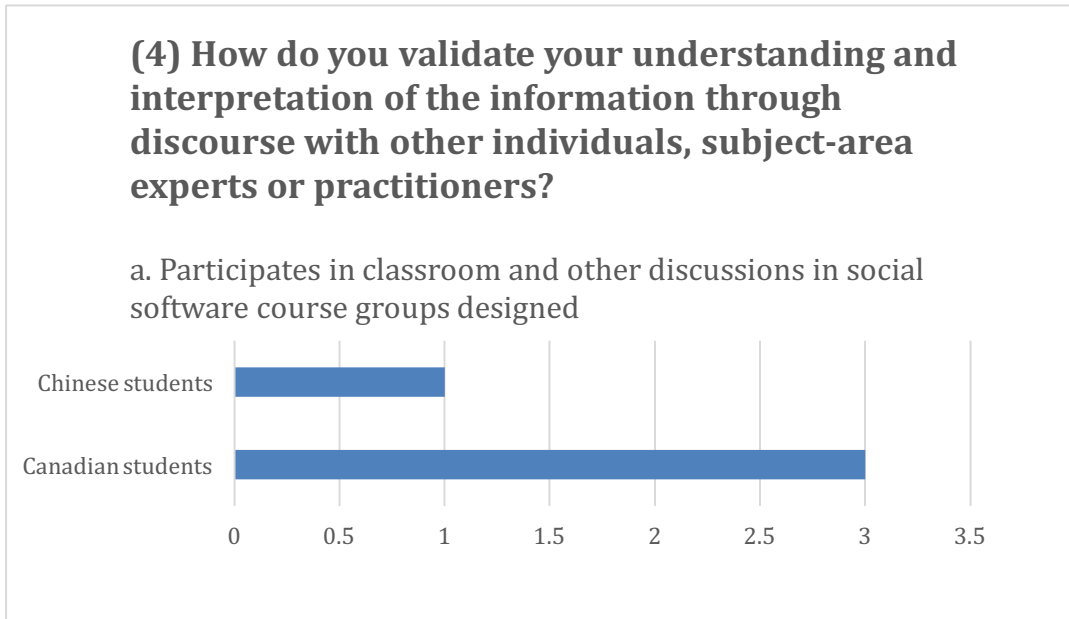


Figure 39. Chinese and Canadian student practices for extracting, recording and managing information.

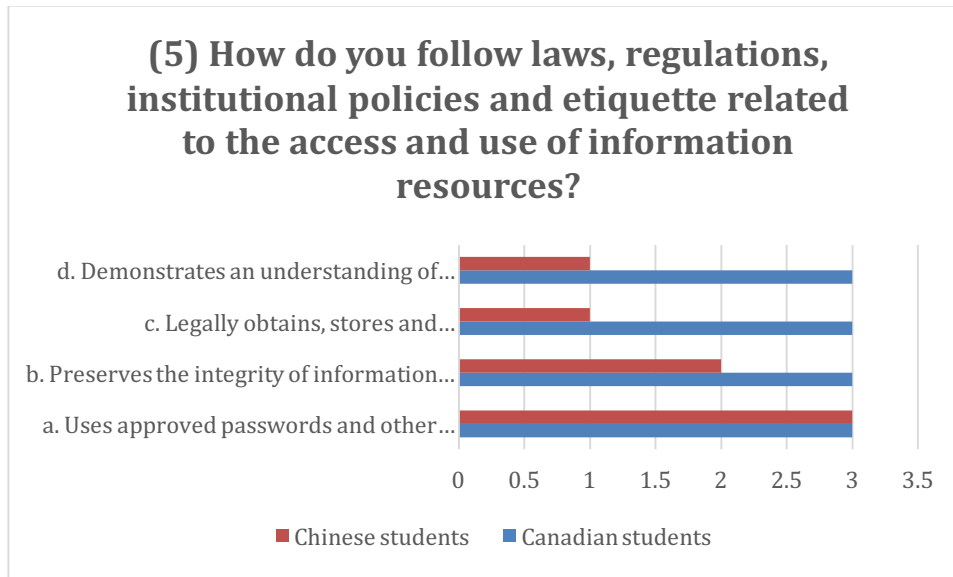


Figure 39 shows that students in both countries use the copy-paste method to extract, record and manage information from sources. The Canadian students also use specialized tools (e.g., Evernote) to save and manage information.



*Figure 40.* Chinese and Canadian students validate their understanding and interpretation of the information.

Figure 40 shows that the Canadian students are more active than the Chinese students in participating in discussions aimed at understanding, validating or interpreting information, particularly in the social software groups.



*Figure 41.* Chinese and Canadian students follow laws, regulations, guidelines and etiquette related to the access and use of information resources.

Figure 41 shows that the Canadian students seem to understand the concept of plagiarism. They seem more concerned about how to legally obtain, store and disseminate text, images and sounds. They seem to understand how to give credit to the sources they use. The Chinese students’ understanding of these matters seems weaker.

The Canadian students seem to prefer to use their own personal ways to assess and verify the reliability of information. The Chinese students prefer to ask the teacher, classmates or experienced people. They especially like to post questions in the social software group. Students from both countries frequently use search engines; the Canadian students use Google and the Chinese students use Baidu. They use the copy-and-paste function to save the search information. The Canadian students use the online library, but the Chinese students said they rarely use it. Unlike the Chinese students, the Canadian students use specialized software (e.g., Evernote) to manage and save information. The Canadian students are quite clear about the concept of intellectual property, whereas the Chinese students’ approach to this concept seems a bit fuzzy.

### **10.3.3 Teachers encourage students to develop skills**

Participant TCA1 (Canadian teacher) said that:

*Learning social technology is important because we live in the 21st century; this is what I tell my students. They have to integrate social technology into classroom activities as a part of our young students' lives now, since they are actually going to become teachers. Therefore, these students really have to be up-to-date and able to use the technologies for everyday classroom activities. It is important for me and for future teachers to master these technologies. Therefore, as future secondary school teachers, they cannot be illiterate. They must be able to use tablets, interactive whiteboards and computers, both personally and professionally with their students. Students must have a positive attitude towards technology even if they are young; some are very trendy, but there are some students who never use social technology.*

Participant TCA2 (Canadian teacher) stated that:

*Information literacy is the capacity to seek effective information, right information and consistent information. I feel that the websites and news sites I share with them on social networks are reliable. I think that I contribute indirectly to the development of their digital literacy and their information skills. I also share research articles with them. In short, it should not be the very large articles, abstracts, sites or professional sites that would be effective for them to easily get information. So, I think that via social networks, I contribute to their development even though this is not a part of my primary teaching objectives. I think the model of teaching I use with my students is good.*

The Canadian teachers seem quite concerned about the development of student information literacy skills; they emphasize the use of tablets, and they share a lot of reliable websites and cell phone apps with their students.

Participant TCH1 (Chinese teacher) explained that:

*It is meaningless to emphasize the use of technology to current college students. Students don't have much trouble finding online information. Most of them have already taken a course on information search in high school. I am more concerned about how students filter and use information after they access it. Some students who lack guidance or have insufficient ability to identify it will mistakenly believe some of the misinformation online, and this can cause serious consequences to their studies; so in this sense, the college student's information literacy should be emphasized so students gain a stronger ability to identify information.*

Participant TCH2 (Chinese teacher) explained that:

*I think information literacy is the ability to evaluate, analyse and filter resources. This is also a process of re-screening and re-organizing texts or pictures. As a teacher, I hope that, at first, students have a search ability and then the ability to evaluate and re-assemble information. Students in our program must also have software development capability. The renewal rate for computer software technologies is very fast. How students find useful and highly reliable software information is a manifestation of their information literacy skills. In our educational technology program, some courses promote student information literacy skills, for example, information technology and*

*educational applications, multimedia computer technology and education applications. In these courses, the teacher teaches some information literacy skills related to the program.*

The Chinese teachers emphasize a combination of specific curriculum content and information literacy skills; they think the course arrangement is targeted to develop the student's information literacy skills. However, even though they say they find information literacy skills quite important for students, they think that students ought to have developed these skills in previous courses in the curriculum.

#### **10.3.4 Teachers instruct students on how to filter online information**

Participant TCA1 (Canadian teacher) said that:

*I invite students to subscribe to and follow the teachers' resource posts. We need to be vigilant because they are not official sources of information. I have also given some examples of a lack of professional judgment equivalent to a lack of ethics.*

The Canadian teacher gave some tips on relevant information sources and particularly Facebook groups.

Participant TCA2 (Canadian teacher) said that:

*On Facebook, I also give students some groups that are interesting to follow. For examples, ICT in EDUCATION is a group I often give them. It is a big group. There are several thousand people on this group, who talk about technology, and so I make suggestions to them. They are not obliged to become members, but I am able to pre-select groups for them. I find it more reliable. This is on Facebook.*

Participant TCH1 (Chinese teacher) said that:

*I encourage my students to pay attention to the legitimacy of the sources of information and the identification of false information. China's network information environment is complex. In fact, top-ranking for sites or information may be obtained by economic capacity from a commercial operation, that is, whichever hospital pays the highest to Baidu will be ranked first on the search results column. This environment requires students to have a stronger ability to distinguish information; if they make the mistake of believing fake information, sometimes there are serious consequences for the network environment in China. Especially in networks that conduct too much fraud. Therefore, information literacy is also reflected in the ability to identify information, for which a certain level of personal social experience is needed. It is not only a technical skill: students have to integrate their personal social experience with their information literacy skills, so that their information literacy is deepened and improved.*

The Chinese teachers believe that the search engine technology has become very popular, but that it can be skewed, so students need information literacy skills to be able to filter information.

### 10.3.5 New information access model

Participant TCH1 (Chinese teacher) stated that a Chinese student's approach toward seeking information is as follows:

*Undergraduate students have little ability to access information. They seek the help of their teachers, seniors or QQ class groups to get their questions about everyday life and job searches answered. If undergraduate students want to get academic information, they will visit CNKI (China National Knowledge Infrastructure). Undergraduate students rarely use language data resources while writing their thesis; they use Chinese resource library information, which they believe is enough. Students search for information mostly on Baidu, because Baidu's information is more complete and its speed is relatively fast, but the credibility of this site is uncertain. There are also some small search engine companies, such as Sogou, which can search for less content, but the speed of this site is slow. The Baidu search engine has some competitors, but now it seems difficult for them to form a threat to Baidu. I observed that the current trend of information searches has begun to change; the students who used to get information from website query information have transitioned to QQ and WeChat. WeChat is a mobile phone application. It updates news and information faster when using the WeChat official public account. Its information dissemination speed is also the fastest. In addition, students access the QQ group to ask questions, and they get more feedback.*

Participant SCH3 (Chinese student) also stated that Chinese students frequently use the social software group to verify the credibility of online information.

Participant TCA1 (Canadian teacher) said that:

*Facebook is a communicating tool for me to connect with others, and Twitter is my tool for getting professional information. I come to Twitter to learn about news related to in my profession, for example, some of the latest information on academic conferences or education technology news. Sometimes I share information instantly and spread the messages to my students.*

The popularity of mobile phones makes it easy to search for information quickly. In this context, many users use social software as a way to query information and conduct their information searches.

The students were asked one open inference question:

*Suppose you read a research article online that suggests your graduate degree will not readily lead to a job in the job market. How do you judge whether the information is believable?*

The first reaction of the Chinese students was to ask their teachers and seniors, especially their class teacher. They consider the information provided by the people around them as more direct, reliable and effective. The Canadian students said that they would maintain a skeptical attitude at first and then examine the source of the information and inquire about the relevant academic literature (if available). They rarely ask similar questions in social software groups.

### **10.3.6 Language barrier and political restrictions for Chinese students**

A phenomenon that did not appear in the Canadian students discourse but to which the Chinese students repeatedly referred during the interviews was the language barrier and the Chinese government's Internet censorship, which seldom allowed the Chinese students' information searches to reach outside the country.

When the Chinese student participants were asked whether they wanted to log in to foreign websites to search for information, Participant SCH1 (Chinese student) replied that:

*I seldom search information on websites outside of China because I think my English is not good. I think this requires a very high level of English comprehension; otherwise, it will cause me much headache. In addition, we are not allowed to log into many foreign websites, for example, many of our students want to see what Facebook and Twitter look like; we heard they were even used in the US presidential election. We can only use some applications to avoid internet blocking, which makes the network speed very slow, and therefore, we easily drop it.*

Participant SCH2 (Chinese student) replied that:

*To browse websites outside of China, I have to use a translation software, which is troublesome. Some sites cannot be logged into directly, because many sites are forbidden, and therefore, I have to use some tools for avoiding internet blocking. By this point, I have to give up trying to log into foreign websites.*

## **10.4 Results of the third research question**

The students in both the countries have access to information literacy courses in the library when they enter the university. Their information literacy training includes searching databases, keyword searching, website evaluation and identifying source types.

The Canadian teachers pointed out that the combination of information literacy and integrative learning actively enhances the students' communication and collaboration skills and employability. The use of tablets and short online teaching planning and development were also integrated into the classroom activities.

The Chinese teachers believe that there is no relationship between information literacy and technical operations because China's Internet environment is full of fraud and the information on Baidu may be twisted. The Chinese teachers are more inclined to promote the accumulation of search experience, which can help students avoid unreliable information online. Furthermore, the Chinese students point out that it is difficult to access reliable sites outside the country.

The Canadian students prefer to use their own ways to verify the credibility of information. The Chinese students prefer to ask friends, teachers or people who they think are experienced, a behaviour that is easily understandable in the light of the last paragraph. The Canadian students understand how to use references and reuse information ethically. The Chinese students seem to be confused about these concepts. In addition, the Chinese students' English language barrier and their government's Internet censorship makes information searches on websites outside the country more difficult. Globally, the context seems to render the development of information literacy skills more difficult in China.

## **10.5 Discussion of the third question**

### **10.5.1 Confidence in information literacy skills**

Social technology allows students and teachers to use the social software group services remotely. The Canadian teachers argue that access to social technology is key in the students'

ability to develop media literacy skills, because information is more and more frequently available on social software such as Facebook, Twitter, Pinterest, etc.

The insecurity of the Chinese network, the Chinese government's Internet censorship and the students' English language barrier have dampened their confidence in finding effective information through information searches on the Internet or social software. If their doubts relate to emerging information or personal interests, such as job information, they are more likely to get information directly from the people around them, for example, their teachers and peers. In addition, Chinese students accept professional knowledge from WeChat public accounts recommended by their teachers and social software information obtained at the university's official library (Xu, Kang, Song & Peter, 2015).



## 11 General Discussion

This study is an international research project that investigates how students and their teachers collaborate and use social software and literacy skills in academic and social integration processes, in Canada and China. The first research question was: How do teachers and their students use social software in the communication related to the students' social and academic integration processes? The second research question was: How do teachers and their students use social software in their academic and social integration processes? The third research question was: How do teachers use social software to develop the students' information literacy skills in the learning process?

The results of the first two research questions have overlapping parts, especially in collaborative learning activities, which contribute to both academic integration and social integration, according to Tinto's model (1975).

Regarding the link between collaboration activities, engagement discussions, observational learning, self-efficacy and the need to belong, the results seem to show that engagement in collaboration and communication activities permits observational learning and promoted self-efficacy and a sense of belonging. This might eventually help with the students' academic success.

Hong et al. (2016) argue that self-efficacy and learning interest are positively correlated with learning satisfaction and social software learning. In their study, the social software course groups seemed to attract more students to favourable academic activities, as evidenced by an examination of success and teamwork in courses and positive self-efficacy. For these students, joining social software course groups may have been a way to develop a relationship with their teacher and classmates, obtain their assistance and support and get more learning materials for the course. Lampe, et al. (2011) also declare that there are some links between Facebook use and class-organizing behaviour, self-efficacy and perceived motivation.

The widespread use of mobile phones makes it easier and faster for students to communicate with others and share information. Communication between students and the teacher has changed gradually from the past patterns of one-to-one to one-to-all. One-to-one pattern is maintained when there is a special situation. Kim (2016) suggests that student motivation to communicate with others depends on the regularity of their mobile phone use.

## **11.1 Comparison between Canadian students and Chinese students: Indirect success and immediate success**

The Chinese students seem more inclined at first to establish good social integration with others. For example, they need to socialize frequently with peers or teachers, so that they can gain eventually academic support. The Canadian students are more directly geared towards academic integration activities. For example, they are willing to share learning experiences with peers in the social software group; they gain confidence by observing the successful experiences of other students in social groups, thus contributing to their own academic success.

A similar study (Ma & Au, 2014) confirms our results and shows that the Chinese students' have a positive attitude concerning the use of social software (QQ) for networking and relationship building (two aspects of social integration) in the learning process. For Chinese students, the path towards academic integration seems to have more twists and turns. Chinese students receive social and academic support and help from the interaction with peers in class groups. Chinese students spend more time interacting with their classmates, and they seem to prefer asking teachers and classmates' questions on the QQ class group. Posts on the QQ class group are more related to administration and activity information. The number of posts and replies on the Canadian students' Facebook class group is much lower.

If Chinese students have to complete collaborative team projects, they actively discuss and share resources in small conversation groups. These small discussion group members are usually composed of students in the same dormitory, who are very familiar with each other; they can talk about anything in their dormitory groups. In addition, Chinese students like to interact with classmates and the class advisor in the QQ class group. The class advisor and the learning committee regularly remind the group about the deadline for the submission of assessments and share information about campus life and various safety precautions. In this context, social and academic integration are blended. As Chinese university students basically live in university dormitories during the four years of an undergraduate degree, the help of the QQ class group for student social and academic interaction is indispensable for university life.

Canadian students develop their self-efficacy towards difficulties in the course by observing the learning behaviour of other students in the course group.

Additional analysis shows differences in the academic environments of the Canadian and Chinese students. Canadian students seem to have better information literacy skills than Chinese students. In the Facebook course group discussions, the Canadian students exhibited enhanced awareness of new network aggregators, such as Pinterest. One Canadian student commented that an aggregator could help learners acquire knowledge related to her ICT in Education course. Other researchers also found that information literacy skills enable Canadian students to think collectively and critically in a social software environment (Zhang, Li, Liu & Miao, 2016).

Overall, the frequency of interaction and collaboration is important in social software groups. Chinese social software class groups are used more for student-student communication than for teacher-student interaction. The social software course group is used for teacher-students interaction, but less often than in the Canadian context. The collaborative learning condition becomes more of an enhanced-tutoring and peer-interaction condition. Qualitative data analysis reveals that peer interaction and teacher support takes place in this condition and is appreciated by most students.

## **11.2 Comparison between Canadian teachers and Chinese teachers**

Both Canadian and Chinese teachers are trying to use social software to improve their courses and promote student academic success. They create social groups to share learning resources, encourage student collaboration in learning activities and guide students to filter network information. Some other studies have also found that social software groups can be used as an effective learning platform by teachers and students (Choi, 2013; Lamb, 2016; Sandry, 2014; Wang et al., 2012).

The Canadian teachers are more likely to lead student learning in social software course groups. One Canadian teacher says that she does not answer a student's question immediately after it is posted on the Facebook course group. Instead, she waits a moment, hoping other students in the group will answer. If no one responds after a while, she replies. She reiterates that social software group is not only a space to get answers very easily, but also a space for students to observe and think, a social learning process *par excellence*. In addition, Canadian

students are able to dig deeper and share more resources in social software classes based on the links shared by teachers. Canadian teachers think that Facebook groups are an easy way to reach students. They think that they offer a practical and popular environment where teachers can add various types of files, facilitate asynchronous sharing and place and create archives. Other researchers have also found that social software groups develop a high level of awareness of communication, task sharing and responsibility (Karsak, 2016).

Technology use has become increasingly popular in Chinese education. Most teachers have been able to successfully integrate social software technology into their curriculum and instruction techniques (Spires, 2017). According to the current findings, Chinese teachers are more likely to share learning resources in social software course groups. Chinese students rarely contribute to the resources in the course groups; they like to ask the teacher some very specific questions, particularly about assessments.

Canadian and Chinese students take courses to develop their information literacy skills in the university library during the first year in university. For example, they learn how to search online literature and databases using the university's search tools. However, the two Chinese teachers interviewed did not receive this type of course at their own university. Simard and Karsenti (2016) suggest that ICT is constantly presented in Canadian classrooms. Although Canadian teachers receive formal ICT training as part of their program, their information literacy skills do not seem to meet the expected requirements. In order to develop the students' information literacy skills, they propose that "it would be worthwhile to consider revising teacher training programs to focus more on library research tools and sharing information on the web" (p. 1). I agree but I think that this is even more crucial for Chinese students.

### **11.3 Social software affects student motivation**

As a communication technology, social software can affect student motivation. In the meeting of the first edition of the Rendez-vous Pédago Numérique in the Saint-Hyacinthe School Board (2016), Karsenti presents effective strategies for increasing student success and academic motivation through the use of technology. He also identifies four factors that affect motivation in relation to the information and communications technology:

- (1) Feeling of control

- (2) Sense of competence
- (3) Feeling of belonging
- (4) Attractiveness of the educational activity

In my research, I found that social software seems to promote some aspects of student learning motivation in both countries. First, the interaction in a social group makes it easier for students to request and receive information from teachers and classmates, and this, in turn, makes them show more initiative. Second, social software activities seem to help students develop their self-efficacy (sense of competence) and their sense of belonging. Third, they can always contact teachers and classmates, and they do not have to feel lonely. Fourth, social software groups provide more dynamic learning information than the original text in paper format and are therefore more likely to draw the students' attention.

## **11.4 Advances and deficiencies in China's technological education**

Zheng (2006) explores the differences between Canada and China. He states that in Canada, teachers use diversified teaching methods in class, such as group work. In China, the students are usually busy taking notes while the teachers lecture. Canadian teachers give their students many handouts, which makes it easier for students to take notes in class. Assignments in China are examination-oriented and objectively based on facts, focusing on the students' memorization skills. Although the state Zheng described was that of high schools in the past, I think that this is still the state of today's universities.

This comparative survey has shown that, although there are still differences in the ways Chinese and Canadian students and teachers use social software, there are also many similarities. China seems to be approaching Canadian standards, considering the progress of educational technology in China. For example, advances in technology increase opportunities for student-teacher interactions. Current research supports this point of view. Social software provides a convenient space for group members to communicate and collaborate; students gain more opportunities to exchange information, participate in collaborative activities, reflect and debate with peers and teachers (Zhang & Xue, 2015). "Social networking media provides the opportunity to take the social interaction to deeper levels as well as address learning styles rooted in digital technologies" (Baird & Fisher, 2005, p. 8). The learning resources provided by

university teachers at different levels tend to be more equal. For example, the learning resources from WeChat public account articles shared by teachers span geographical locations and break through the restrictions of Chinese universities. According to the Chinese government's plan, regular Chinese higher education institutions are divided along many different levels. For example, MOE (Ministry of Education of the People's Republic of China, 2017) released a list of selected universities and first-class disciplines. There is a considerable difference in the educational and financial resources allocated by the government to universities on and not on the list.

In China, enrolment in a prestigious or general university depends on the scores obtained by the student in the National Higher Education Entrance Examination (Wikipedia, n.d.-b). Students receive unequal educational resources at universities of different levels. These educational resources include the qualification of teachers, teaching equipment, learning resources and so on. However, the advent of the Internet and social software have broken through the local restrictions on learning resources provided by prestigious university teachers and non-prestigious university teachers and evened out the field somewhat. To improve the quality of educational outcomes, Chinese teachers can use and share the latest technology or professional information available on social software for education. The development of educational technology has improved the availability of educational resources in Chinese universities. However, Chinese students are reluctant to share resources, and Chinese teachers still occupy a dominant position rather than a leading position in the social software class group.

## **11.5 The reason Chinese students interact with peers in social software groups**

Based on the findings of other research, I attempted to explore why Chinese students interact with their peers in social software groups and are more geared towards social integration activities than academic integration activities. There might be cultural variations in using social software. According to Guo (2015), Chinese collectivistic culture is rooted in the historical and philosophical foundation of Confucianism, Buddhism and Taoism. In collectivism, people think that they can derive the greatest benefits from their families, friends and groups, rather than themselves. Moreover, they tend to maintain harmonious interpersonal relationships and avoid

conflicts among their groups. He also discusses “how people in China perform and interact with each other every day in real life, and even in social media, where people present themselves under the constraints of social norms” (Guo, 2015, p. 28). Chinese society is not highly appreciative of individual uniqueness, and an individual is often considered as a member of the collective rather than an independent entity. When individuals become part of a group, then they are accepted by other members of the group, and they feel a sense of belonging and safety.

The behaviour of Chinese students in this study clearly demonstrates this. On one hand, young people want to show their personal characteristics and express their opinions on social software. On the other hand, they worry that if they show off their ability, others may judge them and not help them if needed at some other time. Collectivism emphasizes modesty rather than pride, and this may explain why Chinese students like to interact with other members, such as chatting or talking but do not want to provide or share the meaningful learning resources they find in a QQ class group.

The advances in educational technology reflect the progress of democracy in the society. The development of technology has provided more means of communication. I do not deny that it has a positive impact on social progress. For example, on social software, such as QQ or WeChat, we can see the unfurling of democracy and freedom of speech. From never knowing to knowing, from never daring to say to saying, people have begun to talk about the issues in Chinese society and stopped blindly believing the ruling party. These changes are the result of the rapid availability of information by Internet. In the meantime, this indeed shows that the degree of democratization in China is rising. However, I think the key factor behind the technical controls is the invisible political power. Despite the progress of technology, the ideology formed under the collectivist cultural background has hardly changed. There is still a long way to go if people are going to be able to use the social technology of the Internet rationally. The online information available in China is monitored by the government, and many news stories and hot topics appear to be very biased. At the same time, many Internet users express their feelings on social software, and their dialogues cannot be sublimated to the level of democracy. People are driven by the stimulation of images and words, but they lack independent thinking. Therefore, they are easily used by the regime or in the interest of safeguarding their own interests, they do not dare voice their opinions and ask for democratic processes. The Chinese students

interviewed in this study sought shelter from others using small groups or one-on-one assistance. They do not want to make their own contributions in large groups. This is relevant to the issue of moving toward democracy. It involves too many things. I can only see this as a tip of the iceberg from the perspective of an educational technology researcher. Social software may be useful for the democratic process in China. What is important is not that it directly changes the government but that it enlightens the people and awakens the apolitical. This is the beginning.



## **12 Conclusions**

Although the results are specific only to six undergraduate students and four teachers at two universities in Canada and China, they still revealed some new information about social software use in the field of education.

### **12.1 Major findings**

The Canadian and Chinese students viewed social software class groups and course groups as useful spaces, where they can access and share a lot of learning resources. Social software is used for academic and social integration both in China and Canada.

For the Canadian students, I found that the social software class group could directly promote student academic integration, because in addition to the teacher's shared content, the students also shared the successful experience of learning together, which motivated the class members to be more confident in dealing with the difficulties of learning in unfamiliar areas.

For the Chinese students, I found that the social software class group could play a catalytic role in social integration, which indirectly promotes their academic success. Chinese students consider the group as a resource sharing space rather than as a space for in-depth discussions (Zhang & Xue, 2015), which they would prefer to carry out in a small social software group, such as in dormitory groups or project groups.

The Canadian teachers guide students to develop and learn from their original knowledge and experiences; they encourage students to gain and share their own experience through practising on social software class groups. Meanwhile, the Chinese teachers still focus on instilling the latest and comprehensive professional knowledge to students through social software class groups.

Canadian students have more control in academic activities and academic activities, and the Chinese groups are more teacher-led or teacher-centred. In Canadian student groups, activities are more geared toward the development of information literacy skills while this does not seem important for Chinese teachers.

This comparative study of Canada and China shows that the use of social software by students and teachers has a positive effect on the students' social integration, academic integration and self-efficacy, which are factors that ultimately lead undergraduate students to academic success.

## **12.2 Concrete value of research**

During a mission to China, Université de Montréal Rector Guy Breton confirmed its role as the leading French-speaking university in China (Université de Montréal, 2018). On January 22, Guy Lefebvre, vice-rector for International Affairs and Francophonie at the Université de Montréal, announced the opening of an office in Beijing that will deal with all aspects of the university's mission, from teaching in continuing education and international cooperation to research and relations with graduates. At the same time, several agreements were signed with the Economics and Law of Zhongnan University (Wuhan, China) to pave the way for collaboration on a new doctoral program in innovation, science, technology and law, as well as with Beihang University and China University of Political Science and Law, Beijing, for co-supervisors.

Students from China are very present at the Université de Montréal and their numbers are growing. Since fall 2014, 1,811 Chinese students have enrolled in science, humanities, law and medical school programs, not counting permanent residents. Chinese immigration is important in Montreal: China, whose nationals accounted for 5.6% of newcomers in 2016, is among the top five countries of origin for recent immigrants living in Montréal.

My comparative research can fill this gap of knowledge concerning social software uses patterns by Canadian and Chinese university students and teachers. It also offers some useful suggestions for the Canadian educators. It could have a positive impact on Chinese international student recruitment strategies, as many other universities in Canada have been attracting an increasing number of Chinese students in recent years.

For most Chinese students, Canada is a foreign environment. They are unfamiliar with the way Canadian teachers use social software to communicate with students. Canadian university admissions officers can use this study to understand the context of international

students from China and how Chinese students use social software. In addition, university professors can use this study to understand the Chinese student use of social software. This may improve communication with Chinese students and lead to a smoother integration into campus life and, by extension, to greater academic success. Concretely, my results point out the importance of social integration activities for international students from China and the need to develop their information literacy skills.

Through this research, I found Chinese students are confident in establishing small social software groups. They are not used to speaking with teachers in the classroom. The software groups make them feel safe (particularly the class groups). These points are worth consideration by Canadian universities.

The interaction through Facebook groups and QQ groups promoted both student-student and teacher-student collaboration. The students were most active in social software groups. They preferred to share learning resources and were more likely to access learning materials in social software groups. The student satisfaction is evident in their very positive comments concerning their experience during the semester. Academia can benefit greatly by leveraging this preferred method of communication and promoting social software groups to enhance student collaboration.

### **12.3 Strengths and limitations**

Through this research, I wanted to understand the way social and academic integration and the interaction between the two in social software groups affect student self-efficacy and eventual academic success. A qualitative approach was used to examine the effects of observational learning, collaborative learning and the students' self-efficacy and need to belong. By allowing interaction in the virtual learning environment, social software study groups enhance many aspects of student learning. From a qualitative point of view, the Canadian student-teacher and student-student interactions stimulated the students' self-efficacy. The qualitative approach combining teacher interviews, student interviews and social software group observations shed complementary lights on the phenomenon I studied.

The qualitative approach of merging interviews and observations is rarely employed but has the advantage of including social software group activity information. Because it is exploratory in nature, this study also presents some limitations.

The particular context of this study and the low number of interviewees limit the reliability of the research data. To reinforce the methodological design of the study, a larger number of participants in social software groups would be needed, because the description of a small number of participants cannot represent the overall situation.

### **12.3.1 Demography**

The study's interviews and observations were conducted in two cities – Nanning and Montreal. The participants represent a very small proportion of university students in these two countries, so while the findings can be approximate the overall results, they cannot represent them.

### **12.3.2 Subject differences**

Although the subjects who were interviewed and observed belong to the faculty of education at both the universities, their course content and objectives were not equivalent and thus not perfectly comparable.

The Canadian teachers teach the courses Integration of ICT 3 and Integration of ICT 2 (ICT: Information and Communications Technology). The Canadian students are registered in the 2015 Education in French as a Second Language program.

The Chinese teachers teach the courses Multimedia Courseware Design and Production and Modern Educational Technology. The Chinese students are registered in the 2015 Educational Technology program.

### **12.3.3 Social software differences**

The different social software features lead to different population divisions. Although most features are similar, the use patterns and habits of the subjects are different and the particular interfaces are quite different. Facebook is a social networking site while QQ is categorized as an instant messaging software, which incorporates the functionality of instant

messaging, social networking sites, social online storage and microblogging. These features have not yet all appeared on Facebook.

### **12.3.4 Development of technology**

The development of social software and the updates in mobile-phone technology have been very quick. Therefore, any study based on a given Internet technology is vulnerable (Scialdone, 2014). For example, an interviewee teacher is quoted as saying: “A few years ago when Sina Weibo had just emerged, many university teachers liked to use it to post the example of students’ assessment or teaching information, but now the focus is news and entertainment gossip.” During the process of my research, Facebook and QQ added some new features and changed some settings. Taking the rapid pace of these changes into account is a challenge research-wise. I conducted a detailed analysis of the current social software available at the time of my study.

## **12.4 Recommendations**

Development of social software promotes the commutation model from one-to-one to one-to-all. Many research results show negative results from the academic use of social software, but this is not what my research found.

This research shows the potential of social software groups not only for individual social use, but also for academic student-teacher or student-student interactions. While teachers are accustomed to relying essentially on individual social use, they can advantageously use these collective interactions to enhance the teaching experience. Social software groups can be used effectively to promote collaborative learning and different types of interactions. It seems to be a very effective channel to foster communication at the group level.

I hope that these recommendations will help convince teachers of the value of creating a virtual learning environment using social software groups.

## **12.5 Future research**

This exploratory research could be taken further by portraying the different uses of social software in both countries at a larger scale. National surveys could be planned. A large-scale

survey complemented by interviews would clarify understanding. A questionnaire can be used to obtain more specific information about activities in the social software group, and it is more conducive to data analysis.

Research that would design and evaluate interventions geared towards better social and academic integration of Chinese international students in Canada would also be helpful.

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# Appendix A: Flyer for Academic Paper Interviews for Teacher and Students

(English version and Chinese version)

Hello!

My name is Qian Zhang and I am a doctoral candidate at the Université de Montréal. Mr. Bruno Poellhuber is the director of my research paper entitled How Students Use Social Software for Learning: A Comparative Study of Chinese and Canadian Universities. The certificate of ethics number is CPER-16-063-D. The research will focus on how Chinese and Canadian university students use social software for learning. I am looking for two university teachers and three undergraduate students as participants of this study.

Requirements:

- The student participants must be full-time undergraduates in the faculty of Education at the subject universities;
- The teacher participants must work in the faculty of Education at the selected universities;
- The participants should be familiar with these social software features and spend more time on using the social software. Specifically speaking, selected participants are required to use such social software as Facebook and Skype for at least three hours per week)

Interviews will last from 45 minutes and will cover the subjects' use of social software for personal and academic purposes. If you are interested in participating in my research or would like to know more information, please contact me by email at [xxx@umontreal.ca](mailto:xxx@umontreal.ca); via Skype account xxx via QQ account xxx or via telephone xxx-xxx-xxx-xxxx.

Thank you for your participation!

Qian Zhang

## 学术论文采访招聘广告

大家好！

我的名字是张茜。我是加拿大蒙特利尔大学的博士生，我的博士论文导师是 Poellhuber Bruno。我的道德规范的证书号码是：我的研究课题是大学生如何使用的社会性软件学习：一项中国和加拿大大学生的比较研究。这项研究将关注中国和加拿大大学生如何使用社交软件进行学习。

我寻求在教育系的 2 个大学老师和 3 名在读的大学本科作为本次研究的采访对象。

要求：

- 本次被采访的学生必须是教育专业的本科阶段的学生；
- 本次被采访的老师必须是在职的大学老师；
- 老师和学生必须熟练使用社交软件（每周至少 3 个小时），例如：QQ、微信或者新浪微博等等。

采访将会需要占用您 45 分钟的时间，采访将会围绕您的学业或者教学方面使用社交软件的相关问题展开。

如果您有兴趣参与我的研究项目并想了解更多信息，[请通过电子邮件 xxx@gmail.com](mailto:xxx@gmail.com)；QQ 账号 xxx 或者电话 xxx-xxx-xxx-xxxx 与我联系。

感谢您的合作！  
张茜



# **Appendix B: Notice for Observation of the Concerned Facebook Group of the Université de Montréal and the QQ Group of the Guangxi Teachers Education University**

(English version and Chinese version)

Dear Madam or Sir (social software group's members),

My name is Qian Zhang and I am a doctoral candidate at the Université de Montréal. Mr. Bruno Poellhuber is the director of my research paper entitled PERCEIVED ACADEMIC ACHIEVEMENT AND SOCIAL INTEGRATION IN THE CONTEXT OF SOCIAL SOFTWARE: A COMPARATIVE STUDY ON CANADIAN AND CHINESE UNIVERSITY STUDENTS. The research will focus on how Chinese and Canadian university students use social software for learning.

Specifically, I would like to conduct an observation of this Facebook group chat in this spring session 2017. The observation period is from April 15 to August 15, 2017. During the process, shared folder and contents, including bulletin boards in the group will be screenshots as pictures. In addition, student members' interactions, activities, and dialogues will be documented and used as the data for analysis.

For students who are unwilling to be observed, their chatting contents, interactions with other members, and other activities such as document sharing will not be collected.

Please rest assured I will keep participants' identities confidential. All personal information will be destroyed seven years after the conclusion of the project. Data of all types (pictures and texts recordings) will be kept for the same period.

If you like to participate in or have questions, please feel free to contact me by email at xxx@umontreal.ca; via phone at xxx-xxx-xxx-xxxx; via Facebook username is xxx; via Skype account xxx or via QQ account xxx Thank you very much in advance for your time and attention.

Sincerely,

Qian Zhang

## **关于观察广西师范学院的班级 QQ 群的通知**

尊敬的女士或先生（社会软件 QQ 群的成员们），

我的名字张茜，我是蒙特利尔大学的博士生。我的博士论文的导师是 Bruno Poellhuber。

我的研究课题是在社会软件背景下的学术成就与社会整合：加拿大与中国大学生的比较研究。这项研究将专注于研究中国和加拿大的大学生如何使用社交软件进行学习。

我将会在 2017 年春季学期对你们 QQ 班级的群进行观察。观察期将从 4 月 15 日开始到 2017 年 8 月 15 日结束。在观察过程中，QQ 班级群里的共享文件夹、公告板内容和群组里的其他活动内容将被截图；学生成员之间的互动、活动和对话将被记录在案并用作分析数据。

对于不愿意参与被我观察的学生，他们的聊天内容、与其他成员的互动、分享文档和在 QQ 班级群中的其他活动数据将不会被收集。

请放心，我会为参与者的身份保密。被观察者的个人信息将在研究项目结束后第七年销毁。所有类型（图片和文字记录）的所有数据将在同一时期保存和销毁。

如果您愿意参加我的研究或您有任何问题，请通过电子邮件 [xxx@umontreal.ca](mailto:xxx@umontreal.ca)、通过电话 xxx-xxx-xxxx 或通过 QQ 帐号 xxx 和我联系，非常感谢您的支持。

真诚的，

张茜

# Appendix C: Information and Consent Form for Teacher's Interview

(English version and Chinese version)

## INFORMATION AND CONSENT FORM

### PERCEIVED ACADEMIC ACHIEVEMENT AND SOCIAL INTEGRATION IN THE CONTEXT OF SOCIAL SOFTWARE: A COMPARATIVE STUDY ON CANADIAN AND CHINESE UNIVERSITY STUDENTS

Student researcher: Qian Zhang, Ph.D., Department of psychopedagogy and andragogy, Faculty of educational sciences.  
Research director: Bruno Poellhuber, Associate professor, Department of psychopedagogy and andragogy, Faculty of educational sciences.

You are invited to participate in a research project. Before accepting, please take the time to read this document setting the conditions for participation in the project.  
Do not hesitate to ask any questions you consider useful to the person who presents the document.

#### A) INFORMATION FOR PARTICIPANTS

---

##### 1. Study objectives

This project will establish a comparative portrait of the use of social software by a sample of university undergraduate students and professors in China and Canada. The general objective is to understand how students and teachers use social software to promote the students' academic success.

##### 2. Participation in the study

The four participants I will interview are full-time teachers from faculties of education at Canadian and Chinese universities. Two of the participants are based in Canada and the other two in China.

The interview will take 45 minutes and will focus on the use of social software for teaching, cooperating, communicating with students and helping students to develop their ability of information literacy. The interviews will be conducted in the online social software video mode such as on Skype or QQ. Videos of the interview process will be recorded with the software Quick Time Player. During the online interviews, participants will be asked to share their computer screen with me. I will screenshot the steps they take while using social software.

Moreover, after the interview, I will ask participants if they have a Facebook group or QQ group and if participants are willing to be observed by me. I also plan to observe the Facebook group or QQ group members' chats to review participant's online activities. The observed participants' interactions, activities, and dialogues will be documented and used as data for analysis. I will screenshot the steps they take while using social software.

##### 3. Risks and disadvantages

Except the time needed for the interview, there is no particular risk involved in participating in this study.

#### 4. Advantages and benefits

By taking part in this study, you will help me document teachers' use of social software. This information will be used to help make a description and recommendations on how teachers use social software in the classroom and teaching.

#### 5. Confidentiality

1. The information you provide to me will remain absolutely confidential. Each study participant will be given a number, and only I will have access to the list of participants and their assigned numbers. No information that can be used to identify you in any way will be published. This personal information will be destroyed almost seven years after the end of the project. All data of all types (audio, video and picture recordings) will be kept for the same period in my computer in Toronto, Canada.

2. The results may be disseminated in scientific journals and congresses, such as CRIFPE (Centre de recherche interuniversitaire sur la formation et la profession enseignante) or the Journal of Educational Technology Development and Exchange.

#### 6. Compensation

Your participation is entirely voluntary.

#### 7. Right of withdrawal

You are free to withdraw at any time by sending an email or calling me. The interview or observation data about you will then be destroyed, and this data will not be used in the data analysis of the study.

At the end of the collection and analysis of the data, I will make share the main results with the participants by email.

### B) CONSENT

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#### Participant's declaration

- I understand that I can take time to think before deciding whether to take part in the study.
- I can ask questions to the research team and demand satisfactory answers.
- I understand that by participating in this study, I am not renouncing any right or releasing the researchers from their responsibilities.
- I have read this information and consent form and I agree to take part in the study.

Participant's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Last name: \_\_\_\_\_ First name: \_\_\_\_\_

#### Researcher's undertaking

I have explained the terms for participation in the study to the participant. I have answered questions asked to the best of my ability and I have ascertained the participant's understanding. I undertake, with the research team, to respect the agreement set out in this information and consent form.

Researcher's (or representative's) signature: \_\_\_\_\_ Date: \_\_\_\_\_

Last name: \_\_\_\_\_ First name: \_\_\_\_\_

**For any questions about the study or to withdraw from the study**, please contact Qian Zhang at xxx-xxx-xxx-xxxx or xxx@umontreal.ca.

For concerns about your rights or the responsibilities of the researchers with regard to your participation in this study, please contact the research ethics committee at [cper@umontreal.ca](mailto:cper@umontreal.ca) or xxx-xxx-xxx-xxxx or go to <http://recherche.umontreal.ca/participants>.

Any complaint about your participation in this study can be submitted to the Université de Montréal ombudsman by calling xxx-xxx-xxx-xxxx or writing to ombudsman@umontreal.ca (**the ombudsman accepts collect calls**).

**A signed copy of this form has been given to me.**

## 学术论文采访同意书

### « 学生如何使用社交软件学习：一项中国和加拿大高校的比较研究 »

博士生研究者：  
博士生导师：

张茜，蒙特利尔大学教育学院教育心理学和成人教育系博士生。  
Bruno Poellhuber, 蒙特利尔大学教育学院心理学和成人教育系副教授。

您会被邀请参与一个研究项目。在接受此项目之前，请花一些时间阅读这个文件里关于参与此项研究的条款。如果您有任何疑问，请不要犹豫向研究者联系。

#### A) 参与者的信息

##### 1. 此项研究的目的

这项研究的目的是审查中国和加拿大的大学生和教师之间的使用社会软件的有什么显著不同。主要的研究问题是在社会软件背景下的学术成就与社会整合：加拿大与中国大学生的比较研究。

##### 2. 参与研究

我计划采访在中国和加拿大的大学的教育系专业工作的四名老师。两位被采访者在加拿大，另外两位在中国。

我将在四十五分钟的时间内向被采访者提问关于出于教学、与学生的合作和联系方面以及教师是如何使用社交软件的。采访将会在社交软件的在线视频进行，例如在 Skype 或者 QQ 上。采访的视频过程将会被 Quick Time Player 软件录制。被采访者使用社交软件的方式将被截屏保存照片。这些与参与者的互动、活动和对话的信息将被记录并用作分析的数据。

此外，除了采访您的特定的社会软件的在线活动，如果您有与学生一起的 QQ 专业课群并且愿意被研究者观察，研究者将进一步观察您的 QQ 专业课群的活动。QQ 专业课群里成员的活动也将会被截屏保存成图片作为分析数据。

##### 3. 风险和不便之处

除了采访和观察群组聊天需要的时间，参与这个研究没有特别的危险。

##### 4. 参与研究的优点和好处

您的参与会帮我记录学生和老师如何使用社交软件。这些信息将被用于帮助就如何在课堂上使用的软件的说明和备注。

##### 5. 保密

1. 您提供给我的信息将会被绝对保密。每个研究的参加者将给出一个号码，只有研究者可使用参与者及其分配的号码的列表。没有任何信息会被用于公共发布。这些参与者的个人信息将在研究项目结束大概七年之后被摧毁。所有类型的数据（音频和视频录制）将同一时期被保存在加拿大多伦多研究人员的电脑里。
2. 研究结果将会被发表在一些学术期刊或者会议上，例如 CRIFPE (Centre de recherche interuniversitaire sur la formation et la profession enseignante) 或者教育技术发展和交换杂志 (the Journal of Educational Technology Development and Exchange)。

## 6. 报酬

您的参与是完全自愿的，此项研究没有报酬。

## 7. 退出的权利

您可以随时通过发送电子邮件或致电研究员退出研究。关于你的访谈或观察的数据将被销毁，这些数据将不会作为研究中的数据分析的部分使用。

## B) 同意授权

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### 参与者的声明

- 在给出我的同意或者不同意之前，我确实用了时间来考虑是否参与。
- 我可以向研究者提问并获取满意的答案。
- 我知道参与此项研究，我没有放弃我的权利，也没有解除研究者的责任。
- 我已阅读这些信息和知情同意书，并同意参加该研究项目。

采访参与者签字：\_\_\_\_\_ 日期：\_\_\_\_\_

姓氏：\_\_\_\_\_ 名字：\_\_\_\_\_

### 研究者的参与

我已经向参与者解释参与此项研究的条件。我根据我的知识很好的回答了提出的问题，我保证会对参与者的各种行为的理解。我与参与此项研究研究团队，尊重此项同意书的各项决议。

研究者的签名：\_\_\_\_\_ 日期：\_\_\_\_\_

(ou de son représentant)

姓氏：\_\_\_\_\_ 名字：\_\_\_\_\_

**对于此项研究的的所有的相关疑问，或者您退出此项研究，请联系张茜的电话xxx-xxx-xxx-xxxx；QQ 账号xxx或者通过电子邮件xxx@umontreal.ca与研究者取得联系。**

有关您对您的参与这个项目的权利或研究人员的责任有任何疑问，您可以在cper@umontreal.ca或致电514343-1896通过电子邮件联系多教师研究的伦理委员会或访问网站<http://recherche.umontreal.ca/participants>。

如果您要投诉参与这项研究，可拨打电话xxx-xxx-xxx-xxxx，或通过电子邮件发送ombudsman@umontreal.ca（可向蒙特利尔大学的监察员申请接受对方付费电话）。

这份附带签署表格的副本会留在我处。

# **Appendix D: Information and Consent Form for Student's Interview**

(English version and Chinese version)

## **INFORMATION AND CONSENT FORM**

### **PERCEIVED ACADEMIC ACHIEVEMENT AND SOCIAL INTEGRATION IN THE CONTEXT OF SOCIAL SOFTWARE: A COMPARATIVE STUDY ON CANADIAN AND CHINESE UNIVERSITY STUDENTS**

Student researcher: Qian Zhang, Ph.D., Department of psychopedagogy and andragogy, Faculty of educational sciences.

Research director: Bruno Poellhuber, Associate professor, Department of psychopedagogy and andragogy, Faculty of educational sciences.

You are invited to participate in a research project. Before accepting, please take the time to read this document setting the conditions for participation in the project.

Do not hesitate to ask any questions you consider useful to the person who presents the document.

#### **A) INFORMATION FOR THE PARTICIPANTS**

---

##### **1. Study objectives**

This project will establish a comparative portrait of the use of social software by a sample of university undergraduate students and professors in China and Canada. The general objective is to understand how students and teachers use social software promotes the students' academic success.

##### **2. Participation in the study**

The six participants I will interview are full-time students from faculties of education at Canadian and Chinese universities. Three of the participants are based in Canada and the other three are in China.

The interview will take 45 minutes and will focus on the use of social software for learning, cooperating, communicating with other students and their information literacy level. The interviews will be conducted in the online social software mode such as on Skype or QQ. Videos of the interview process will be recorded with the

software Quick Time Player. During the online interviews, participants will be asked to share their computer or mobile phone screen with the researcher. The researcher will screenshot the steps they take while using social software.

### **3. Risks and disadvantages**

Except the time needed for the interview, there is no particular risk involved in participating in this study.

### **4. Advantages and benefits**

By taking part in this study, you will help me document student use of social software. This information will be used to help make a description and recommendations on how students use social software for their interactions, social integration, academic success and information literacy.

### **5. Confidentiality**

1. The information you provide to me will remain absolutely confidential. Each study participant will be given a number, and only the researcher will have access to the list of participants and their assigned numbers. No information that can be used to identify you in any way will be published. This personal information will be destroyed almost seven years after the end of the project. All data of all types (audios, videos and pictures recordings) will be kept for the same period in researcher's computer in Toronto, Canada.

2. The results may be disseminated in scientific journals and congresses, such as CRIFPE (Centre de recherche interuniversitaire sur la formation et la profession enseignante) or the Journal of Educational Technology Development and Exchange.

### **6. Compensation**

Your participation is entirely voluntary.

### **7. Right of withdrawal**

You are free to withdraw at any time by sending an email or calling the researcher. The interview or observation data about you will then be destroyed, and this data will not be used in the data analysis of the study.

At the end of the collection and analysis of the data, the researcher will share the main results with the participants by email.

## **B) CONSENT**

---

### **Participant's declaration**

- I understand that I can take time to think before deciding whether to take part in the study.
- I can ask questions to the research team and demand satisfactory answers.
- I understand that by participating in this study, I am not renouncing any right or releasing the researchers from their responsibilities.
- I have read this information and consent form and I agree to take part in the study.



Participant's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Last name: \_\_\_\_\_ First name: \_\_\_\_\_

### Researcher's undertaking

I have explained the terms for participation in the study to the participant. I have answered questions asked to the best of my ability and I have ascertained the participant's understanding. I undertake, with the research team, to respect the agreement set out in this information and consent form.

Researcher's (or representative's) signature: \_\_\_\_\_ Date: \_\_\_\_\_

Last name: \_\_\_\_\_ First name: \_\_\_\_\_

**For any questions about the study or to withdraw from the study**, please contact Qian Zhang at xxx-xxx-xxx-xxxx or xxx@umontreal.ca.

For concerns about your rights or the responsibilities of the researchers with regard to your participation in this study, please contact the research ethics committee at [cper@umontreal.ca](mailto:cper@umontreal.ca) or xxx-xxx-xxx-xxxx or go to <http://recherche.umontreal.ca/participants>.

Any complaint about your participation in this study can be submitted to the Université de Montréal ombudsman by calling xxx-xxx-xxx-xxxx or writing to ombudsman@umontreal.ca (**the ombudsman accepts collect calls**).

**A signed copy of this form has been given to me.**

## 学术采访同意书

### « 在社会软件背景下的学术成就与社会整合: 加拿大与中国大学生的比较研究 »

博士学生研究者: 张茜, 蒙特利尔大学教育学院教育心理学和成人教育系博士生。  
博士生导师: Bruno Poellhuber, 蒙特利尔大学教育学院心理学和成人教育系副教授。

您会被邀请参与一个研究项目。在接受此项目之前, 请花一些时间阅读这个文件里关于参与此项研究的条款。如果您有任何疑问, 请不要犹豫向研究者联系。

#### A) 参与者的信息

---

##### 1. 此项研究的目的

这项研究的目的是审查中国和加拿大大学的大学生和教师之间的使用社会软件的有什么显著不同以及了解大学生的学习习惯。主要的研究问题是中国和加拿大的大学生和教师如何使用社交软件来促进学生的学业成功。

##### 2. 参与研究

我计划采访在中国和加拿大的大学的教育系专业的八名本科学生。四位被采访者在加拿大另外四位在中国。

我将在一个小时到一个小时十五分钟的时间内向被采访者提问关于出于自己和学业的目的，学生是如何使用社交软件的。

采访将会在社交软件的在线视频进行，例如在 Skype 或者 QQ 上。采访的视频过程将会被 Quick Time Player 软件录制。被采访者使用社交软件的方式将被截屏保存照片。这些与参与者的互动、活动和对话的信息将被记录并用作分析的数据。

此外，除了采访您的特定的社会软件的在线活动，如果您有与老师一起的 QQ 班级群或者其他 QQ 群并且愿意被研究者观察，研究者将进一步观察您的 QQ 班级群组的活动。QQ 群组里成员的活动也将会被截屏保存成图片作为分析数据。

### 3. 风险和不便之处

除了采访时间和观察群组聊天，参与这个研究没有特别的风险。

### 4. 参与研究的优点和好处

您的参与会帮我记录学生和老师如何使用社交软件。这些信息将被用于帮助就如何在课堂上使用的软件的说明和备注。

### 5. 保密

1)您提供给我的信息将会被绝对保密。每个研究的参加者将给出一个号码，只有研究者可使用参与者及其分配的号码的列表。没有任何信息会被用于公开发布。这些参与者的个人信息将在研究项目结束大概七年之后被摧毁。所有类型的数据（音频和视频录制）将同一时期被保存在加拿大多伦多研究人员的电脑里。

2) 研究结果将会被发表在一些学术期刊或者会议上，例如 CRIFPE (Centre de recherche interuniversitaire sur la formation et la profession enseignante) 或者教育技术发展和交换杂志 (the Journal of Educational Technology Development and Exchange).

### 6. 报酬

您的参与是完全自愿的，此项研究没有报酬。

### 7. 退出的权利

您可以随时通过发送电子邮件或致电研究员退出研究。关于你的访谈或观察的数据将被销毁，这些数据将不会在研究中的数据分析部分使用。

## B) 同意授权

---

### 参与者的声明

- 在给出我的同意或者不同意之前，我确实用了时间来考虑是否参与。
- 我可以向研究者提问并获取满意的答案。
- 我知道参与此项研究，我没有放弃我的权利，也没有解除研究者的责任。
- 我已阅读这些信息和知情同意书，并同意参加该研究项目。

采访参与者签字：\_\_\_\_\_

日期：\_\_\_\_\_

姓氏：\_\_\_\_\_

名字：\_\_\_\_\_

### 研究者的参与

我已经向参与者解释参与此项研究的条件。我根据我的知识很好的回答了提出的问题，我保证会对参与者的各种行为的理解。我与参与此项研究研究团队，尊重此项同意书的各项决议。

研究者的签名：\_\_\_\_\_

日期：\_\_\_\_\_

(ou de son représentant)

姓氏：\_\_\_\_\_

名字：\_\_\_\_\_

对于此项研究的所有的相关疑问，或者您退出此项研究，请联系张茜的电话xxx-xxx-xxx-xxxx；QQ 账号xxx或者通过电子邮件xxx@umontreal.ca与研究者取得联系。

有关您对您的参与这个项目的权利或研究人员的责任有任何疑问，您可以在cper@umontreal.ca或致电xxx-xxx-xxx-xxxx 通过电子邮件联系多教师研究的伦理委员会或访问网站<http://recherche.umontreal.ca/participants>。

如果您要投诉参与这项研究，可拨打电话xxx-xxx-xxx-xxxx，或通过电子邮件发送ombudsman@umontreal.ca（可向蒙特利尔大学的监察员申请接受对方付费电话）。

这份附带签署表格的副本会留在我处。

# Appendix E: Information and Consent Form for Social Software Member Observation

(English version and Chinese version)

## INFORMATION AND CONSENT FORM

### PERCEIVED ACADEMIC ACHIEVEMENT AND SOCIAL INTEGRATION IN THE CONTEXT OF SOCIAL SOFTWARE: A COMPARATIVE STUDY ON CANADIAN AND CHINESE UNIVERSITY STUDENTS

Student researcher: Qian Zhang, Ph.D., Department of psychopedagogy and andragogy, Faculty of educational sciences.  
Research director: Bruno Poellhuber, Associate professor, Department of psychopedagogy and andragogy, Faculty of educational sciences.

You are invited to participate in a research project. Before accepting, please take the time to read this document setting the conditions for participation in the project.  
Do not hesitate to ask any questions you consider useful to the person who presents the document.

#### A) INFORMATION FOR THE PARTICIPANTS

---

##### 1. Study objectives

This project will establish a comparative portrait of the use of social software by a sample of university undergraduate students and professors in China and Canada. The general objective is to understand how students and teachers use social software to promote the students' academic success.

##### 2. Participation in the study

I plan to observe the Facebook group or QQ group members' chats to review participant's online activities on social software. The observed participants' interactions, activities and dialogues will be documented and used as data for analysis. I will screenshot the steps they take while using social software. Observation period is from April 1 and to the end of August 15, 2017.

##### 3. Risks and disadvantages

There is no particular risk involved in participating in this study.

##### 4. Advantages and benefits

By taking part in this study, you will help me document student use of social software. This information will be used to help make a description and recommendations on how the social software group members use social software to promote student interactions, social integration, academic success and the ability of information literacy.

##### 5. Confidentiality

1. The information you provide to me will remain absolutely confidential. Each study participant will be given a number, and only I will have access to the list of participants and their assigned numbers. No information that can be used to identify you in any way will be published. This personal information will be destroyed seven years after the end of the project. All data of all types (audio, video and picture recordings) will be kept for the same period in researcher's computer in Toronto, Canada.

2. The results may be disseminated in scientific journals and congresses, such as CRIFPE (Centre de recherche interuniversitaire sur la formation et la profession enseignante) or the Journal of Educational Technology Development and Exchange.

## 6. Compensation

Your participation is entirely voluntary.

## 7. Right of withdrawal

You are free to withdraw at any time by sending an email or calling me. The interview or observation data about you will then be destroyed, and this data will not be used in the data analysis of the study.

At the end of the collection and analysis of the data, I will share the main results with the participants by email.

## B) CONSENT

---

### Participant's declaration

- I understand that I can take time to think before deciding whether to take part in the study.
- I can ask questions to the research team and demand satisfactory answers.
- I understand that by participating in this study, I am not renouncing any right or releasing the researchers from their responsibilities.
- I have read this information and consent form and I agree to take part in the study.

Participant's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Last name: \_\_\_\_\_ First name: \_\_\_\_\_

### Researcher's undertaking

I have explained the terms for participation in the study to the participant. I have answered questions asked to the best of my ability and I have ascertained the participant's understanding. I undertake, with the research team, to respect the agreement set out in this information and consent form.

Researcher's (or representative's) signature: \_\_\_\_\_ Date: \_\_\_\_\_

Last name: \_\_\_\_\_ First name: \_\_\_\_\_

**For any questions about the study or to withdraw from the study**, please contact Qian Zhang at xxx-xxx-xxx-xxxx or xxx@umontreal.ca.

For concerns about your rights or the responsibilities of the researchers with regard to your participation in this study, please contact the research ethics committee at [cper@umontreal.ca](mailto:cper@umontreal.ca) or xxx-xxx-xxx-xxxx or go to <http://recherche.umontreal.ca/participants>.

Any complaint about your participation in this study can be submitted to the Université de Montréal ombudsman by calling xxx-xxx-xxx-xxxx or writing to [ombudsman@umontreal.ca](mailto:ombudsman@umontreal.ca) (**the ombudsman accepts collect calls**).

**A signed copy of this form has been given to me.**

## 学术观察同意书

### « 在社会软件背景下的学术成就与社会整合: 加拿大与中国大学生的比较研究 »

博士生研究者:  
博士生导师:

张茜, 蒙特利尔大学教育学院教育心理学和成人教育系博士生。  
Bruno Poellhuber, 蒙特利尔大学教育学院心理学和成人教育系副教授。

您会被邀请参与一个研究项目。在接受此项目之前, 请花一些时间阅读这个文件里关于参与此项研究的条款。如果您有任何疑问, 请不要犹豫向研究者联系。
---

## A) 参与者的信息

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### 1. 此项研究的目的

这项研究的目的是审查中国和加拿大大学的大学生和教师之间的使用社交软件的有什么显著不同。该研究还旨在了解大学生的学习习惯，在不同的体制背景下的学习习惯和方式在他们的社会和教育环境中使用社交软件的感知。主要的研究问题是中国和加拿大大学的学生和教师如何使用社交软件，从而促进学生的学业成功。

### 2. 参与研究

我想打算观察一个本科生班级的 QQ 群的聊天。观察过程中群组里成员的共享文件夹、告示板的内容和其他群里的内容，以及群组成员使用社交软件的互动、活动和对话将会被记录和被用于数据分析。

我向您保证受访者的身份将会被严格保密。他们个人信息将在研究项目结束七年之后被销毁，所有类型（音频和视频录制）的所有数据将被保存在此前的同一时期。群组里的活动也将会被截屏保存成图片。

### 3. 风险和不便之处

除了观察群组成员的聊天和发布的文件，参与这个研究没有特别的风险。

### 4. 参与研究的优点和好处

您的参与会帮我记录学生和教师如何使用社交软件。这些信息将被用于帮助就如何在课堂上使用的软件的说明和备注。

### 5. 保密

1)您提供给我的信息将会被绝对保密。每个研究的参加者将给出一个号码，只有研究者可使用参与者及其分配的号码的列表。没有任何信息会被用于公共发布。这些参与者的个人信息将在研究项目结束七年之后的2024年12月被摧毁。所有类型的数据（音频和视频录制）将同一时期被保存在加拿大多伦多研究人员的电脑里。

2)研究结果将会被发表在一些学术期刊或者会议上，例如CRIFPE(Centre de recherche interuniversitaire sur la formation et la profession enseignante)或者教育技术发展和交换杂志 (the Journal of Educational Technology Development and Exchange).

### 6. 报酬

您的参与是完全自愿的，此项研究没有报酬。

### 7. 退出的权利

您可以随时通过发送电子邮件或致电研究员退出研究。关于你的访谈或观察的数据将被销毁，这些数据将不会在研究中的数据分析部分使用。

在收集材料和研究材料的最后阶段，研究者会通过电子邮件给参与者发布主要研究结果的发布会。

## B) 同意授权

---

### 参与者的声明

- 在给出我的同意或者不同意之前，我确实用了时间来考虑是否参与。
- 我可以向研究者提问并获取满意的答案。
- 我知道参与此项研究，我没有放弃我的权利，也没有解除研究者的责任。
- 我已阅读这些信息和知情同意书，并同意参加该研究项目。

参与者签字：\_\_\_\_\_

日期：\_\_\_\_\_

姓氏：\_\_\_\_\_

名字：\_\_\_\_\_

### 研究者的参与

我已经向参与者解释参与此项研究的条件。我根据我的知识很好的回答了提出的问题，我保证会对参与者的各种行为的理解。我与参与此项研究研究团队，尊重此项同意书的各项决议。

研究者的签名：\_\_\_\_\_  
(ou de son représentant)

日期：\_\_\_\_\_

姓氏：\_\_\_\_\_

名字：\_\_\_\_\_

**对于此项研究的的所有的相关疑问，或者您退出此项研究，请联系张茜的电话xxx-xxx-xxx-xxxx；QQ 账号xxx或者通过电子邮件xxx@umontreal.ca与研究者取得联系。**

有关您对您的参与这个项目的权利或研究人员的责任有任何疑问，您可以在cper@umontreal.ca或致电xxx-xxx-xxx-xxxx 通过电子邮件联系多教师研究的伦理委员会或访问网站<http://recherche.umontreal.ca/participants>。

如果您要投诉参与这项研究，可拨打电话xxx-xxx-xxx-xxxx，或通过电子邮件发送ombudsman@umontreal.ca（可向蒙特利尔大学的监察员申请接受对方付费电话）。

这份附带签署表格的副本会留在我处。

# **Appendix F: Request Letter for Authorization from the Deans at Concerned Departments of the Guangxi Teachers Education University**

(English version and Chinese version)

Purpose:

This project will establish a comparative portrait of the use of social software by a sample of university undergraduate students and professors in China and Canada. The general objective is to understand how students and teachers use social software to promote the students' academic success, by means of an exploratory case study.

Dear Madam or Sir,

My name is Qian Zhang and I am a doctoral candidate at the Université de Montréal. Mr. Bruno Poellhuber is the director of my research paper entitled PERCEIVED ACADEMIC ACHIEVEMENT AND SOCIAL INTEGRATION IN THE CONTEXT OF SOCIAL SOFTWARE: A COMPARATIVE STUDY ON CANADIAN AND CHINESE UNIVERSITY STUDENTS. The certificate of ethics number is CPER-16-063-D. The research will focus on how Chinese and Canadian university students use social software for learning. I am looking for two university teachers and four undergraduate students as participants in this study.

Specifically, I would like to conduct an interview with two professors at your Department in this spring session 2017. I also plan to observe the QQ group chats among the students from one class at your faculty. These students' interactions, activities, and dialogues will be documented and used as the data for analysis. In addition to reviewing their online activities on specific social software, I will further ask them to participate in a 45-minute interview with regard to their use of social software for personal and academic purposes.

Please rest assured I would keep their identities confidential. The personal information will be destroyed seven years after the end of the project. All data of all types (audio, video and picture recordings) will be kept for the same period.

If you could be kind enough to authorize me to carry out the above-described study in your department, I would greatly appreciate your completing the following information and returning to me before May 30, 2017.

Name of the Department (Official Seal):

Legal Representative's Name:

Legal Representative's Signature:

Date:

Please feel free to contact me by email at [xxx@umontreal.ca](mailto:xxx@umontreal.ca); via phone at xxx-xxx-xxx-xxxx; via QQ account xxx or via Skype account xxx should you have additional concerns or questions.

Thank you very much in advance for your time and attention.

Sincerely,

Qian Zhang

April 26, 2017



## 给广西师范学院相关院系的采访授权信

目的：

此研究的目的是通过使用一个探索性案例研究设计，从中国和加拿大大学本科学生和教师使用社交软件的角度，探讨大学本科学生和教师的学习和教学经验。

敬爱的学院领导：

我是张茜，是一名加拿大的蒙特利尔大学的博士研究生。我的博士指导老师是 Bruno Poellhuber 教授。我的研究课题是：在社会软件背景下的学术成就与社会整合：加拿大与中国大学生的比较研究。我获得的数据采集的道德评审证书号码为 CPER-16-063-D。

我的博士论文研究将重点研究社交软件如何被中国和加拿大的大学生用于他们的学习。这个案例研究预计在加拿大大学和中国大学中的教育学院的本科生中进行，我寻求获得您的授权来展开我的研究。

我想在今年秋天采访你们系的两名大学老师。此外，我还打算观察一个本科生班级的 QQ 群的聊天。

采访中他们使用社交软件的互动、活动和对话将会被记录和被用于数据分析。除了查看他们的在线活动，我会要求他们参与一个关于他们个人使用和学术使用社交软件的四十五分钟的个案研究的采访。

我向您保证受访者的身份将会被严格保密。他们个人信息将在研究项目结束七年之后的 2024 年 12 月被销毁，所有类型（音频和视频录制）的所有数据将被保存在此前的同一时期。

如果您愿意授权我在您的部门开展上述研究，我将不胜感激您的帮助，并希望您能填写以下的信息，并请您在 2017 年 05 月 30 日之前返回给我。

**大学的系部名称（盖章）：**

**授权人名字：**

**授权人签名：**

**日期：**

如果您想和我讨论与这个个案研究相关的问题，您可以通过电子邮件 [xxx@umontreal.ca](mailto:xxx@umontreal.ca) 联系我；或者拨打我的电话：xxx-xxx-xxx-xxxx；或者通过 QQ 账号 xxx 和 Skype 账号 xxx 和我联系。

非常感谢您为此付出的时间和精力。

真诚的，

张茜

2017 年 04 月 26 日

# **Appendix G: Request Letter for Authorization from the Professor for the Observation of the Concerned the QQ Class Group of the Guangxi Teachers Education University**

(English version and Chinese version)

Purpose:

This project will establish a comparative portrait of the use of social software by a sample of university undergraduate students and professors in China and Canada. The general objective is to understand how students and teachers use social software to promote the students' academic success, by means of an exploratory case study.

Dear Madam or Sir,

My name is Qian Zhang and I am a doctoral candidate at the Université de Montréal. Mr. Bruno Poellhuber is the director of my research paper entitled PERCEIVED ACADEMIC ACHIEVEMENT AND SOCIAL INTEGRATION IN THE CONTEXT OF SOCIAL SOFTWARE: A COMPARATIVE STUDY ON CANADIAN AND CHINESE UNIVERSITY STUDENTS. The certificate of ethics number is CPER-16-063-D. The research will focus on how Chinese and Canadian university students use social software for learning. I am looking for two university teachers and four undergraduate students as participants in this study.

Specifically, I would like to conduct an observation of the QQ class group chats among the students from one class at your faculty in this spring session 2017. In the observation process, the shared folder, bulletin board content and other group content will be captured as pictures, the student members' interactions, activities and dialogues will be documented and used as the data for analysis.

Please rest assured I would keep their identities confidential. The personal information will be destroyed seven years after the end of the project. All data of all types (audio and video recordings) will be kept for the same period.

If you could be kind enough to authorize me to carry out the above-described study in your department, I would greatly appreciate your completing the following information and returning to me before May 30, 2017.

Name of the Department:

Legal Representative's Name:

Legal Representative's Signature:

Date:

Please feel free to contact me by email at xxx@umontreal.ca; via phone at xxx-xxx-xxx-xxxx; via QQ account xxx or via Skype account xxx should you have additional concerns or questions.

Thank you very much in advance for your time and attention.

Sincerely,

Qian Zhang

April 1, 2017

## 给广西师范学院相关院系的观察 QQ 班级群的授权信

目的：此研究的目的是通过使用一个探索性案例研究设计，从中国和加拿大大学本科学生和教师使用社交软件的角度，探讨大学本科学生和教师的学习和教学经验。

敬爱的学院领导：

我是张茜，是一名加拿大的蒙特利尔大学的博士研究生。我的博士指导老师是 Bruno Poellhuber 教授。我的研究课题是：在社会软件背景下的学术成就与社会整合：加拿大与中国大学生的比较研究。我获得的数据采集的道德评审证书号码为 CPER-16-063-D。

我的博士论文研究将重点研究社交软件如何被中国和加拿大的大学生用于他们的学习。这个案例研究预计在加拿大大学和中国大学中的教育学院的本科学士中进行，我寻求获得您的授权来展开我的研究。

我想打算观察一个本科生班级的 QQ 群的聊天。观察过程中群组里的共享文件夹、告示板的内容和其他群里的内容，以及群组成员使用社交软件的互动、活动和对话将会被记录和用于数据分析。

我向您保证受访者的身份将会被严格保密。他们个人信息将在研究项目结束七年之后的 2024 年 12 月被销毁，所有类型（音频和视频录制）的所有数据将被保存在此前的同一时期。

如果您愿意授权我在您的部门开展上述研究，我将不胜感激您的帮助，并希望您能填写以下的信息，并请您在 2017 年 5 月 30 日之前返回给我。

**大学的系部名称：**

**授权人名字：**

**授权人签名：**

**日期：**

如果您想和我讨论与这个个案研究相关的问题，您可以通过电子邮件 xxx@umontreal.ca 联系我；或者拨打我的电话：xxx-xxx-xxx-xxxx；或者通过 QQ 账号 xxx 和 Skype 账号 xxx 和我联系。

非常感谢您为此付出的时间和精力。

真诚的，

张茜

2017 年 04 月 01 日

# **Appendix H 1: Request Letter for Authorization from the Professor for the Observation of Concerned the Facebook Class Group of the Université de Montréal**

(English version and French version)

Purpose:

This project will establish a comparative portrait of the use of social software by a sample of university undergraduate students and professors in China and Canada. The general objective is to understand how students and teachers use social software to promote the students' academic success, by means of an exploratory case study.

Dear Sir,

My name is Qian Zhang and I am a doctoral candidate at the Université de Montréal. Mr. Bruno Poellhuber is the director of my research paper PERCEIVED ACADEMIC ACHIEVEMENT AND SOCIAL INTEGRATION IN THE CONTEXT OF SOCIAL SOFTWARE: A COMPARATIVE STUDY ON CANADIAN AND CHINESE UNIVERSITY STUDENTS. The certificate of ethics number is CPER-16-063-D. The research will focus on how Chinese and Canadian university students use social software for learning. I am looking for two university teachers and four undergraduate students as participants in this study.

Specifically, I would like to conduct an observation of Facebook class groups chat among the students from one class at your faculty in this spring session 2017. In the observation process, the shared folder, bulletin board content and other group content will be captured as pictures, the student members' interactions, activities, and dialogues will be documented and used as the data for analysis.

Please rest assured I would keep their identities confidential. The personal information will be destroyed seven years after the end of the project. All data of all types (audio and video recordings) will be kept for the same period. If you could be kind enough to authorize me to carry out the above-described study in your department, I would greatly appreciate your completing the following information and returning to me before May 30, 2017.

Please feel free to contact me by email at xxx@umontreal.ca; via phone at xxx-xxx-xxx-xxxx; via QQ account xxx or via Skype account xxx should you have additional concerns or questions.

Thank you very much in advance for your time and attention.

Sincerely,

Qian Zhang

April 1, 2017

## **Appendix H 2: Request for authorization from the director of the psychopedagogy and andragogy department**

Dear Sir:

My name is Qian Zhang and I am a Ph.D. candidate working with Bruno Poellhuber at the Université de Montréal. I am asking for your authorization to solicit the participation of students in our department for my research. My research ethics certificate number is CPER-16-063-D.

My topic is PERCEIVED ACADEMIC ACHIEVEMENT AND SOCIAL INTEGRATION IN THE CONTEXT OF SOCIAL SOFTWARE: A COMPARATIVE STUDY ON CANADIAN AND CHINESE UNIVERSITY STUDENTS.

The research will focus on how Chinese and Canadian university students use social software for learning. I am looking for two university teachers and four undergraduate students as participants in this study. La recherche se concentrera sur la façon dont les étudiants universitaires chinois et canadiens utilisent des logiciels sociaux pour l'apprentissage.

More specifically, I am looking for two university teachers and four undergraduate students from our department in the spring and summer 2017 sessions. I also plan to observe Facebook discussions among the students (there is probably a Facebook group initiated by the students).

The interactions, activities and dialogues of these students will be documented and used as data for the analysis. In addition to examining their online activities on specific social software programs, I will ask them to take part in a 75-minute interview about their use of social software for personal and academic purposes.

Please rest assured that their identities will remain confidential. Their personal information will be destroyed seven years after the end of the study, in December 2024. All data of all kinds (audio and video recordings) will be kept for the same period of time.

If you could be kind enough to authorize me to carry out the above-described study in your department, I would greatly appreciate your response by May 30, 2017.

If you have any additional concerns or question, please contact me at [xxx@umontreal.ca](mailto:xxx@umontreal.ca), xxx-xxx-xxx-xxxx or by Skype at xxx.

Thank you in advance for your time and consideration.

Sincerely,

Qian Zhang

April 1, 2017

# **Appendix I: Request Letter for Authorization from the Group Admin for Observation of Concerned Facebook Class Group from the Université de Montréal**

(French version)

Objet : Demande d'autorisation auprès de l'administrateur de Facebook groupe du BEFLS UdeM 2015-2019 (Baccalauréat en enseignement du français langue seconde)

Monsieur,

Je m'appelle Qian Zhang. Je suis candidate au doctorat de M. Bruno Pollhuber à l'Université de Montréal. Je demande votre autorisation pour solliciter la participation à ma recherche auprès d'étudiants de notre département. Mon numéro du certificat de l'éthique de la recherche est CPER-16-063-D.

Mon sujet de recherche est PERCEPTION ACADÉMIQUE ET INTÉGRATION SOCIALE DANS LE CONTEXTE DU LOGICIEL SOCIAL: UNE ÉTUDE COMPARATIVE SUR LES ÉTUDIANTS UNIVERSITAIRES CANADIENS ET CHINOIS.

La recherche se concentrera sur la façon dont les étudiants universitaires chinois et canadiens utilisent des logiciels sociaux pour l'apprentissage.

Plus précisément, je voudrais observer les discussions de votre groupe Facebook BEFLS UdeM 2015-2019 parmi les étudiants. Cette observation se terminera avant le 30 Août 2017.

Les interactions, les activités et les dialogues de ces étudiants seront documentés et utilisés comme données pour l'analyse. En plus d'examiner leurs activités en ligne sur les logiciels sociaux spécifiques.

S'il vous plaît, soyez assurés que leur identité sera gardée confidentielle. Les renseignements personnels seront détruits sept ans après la fin du projet, en décembre 2024. Toutes les données de tous types (enregistrements audio et vidéo) seront conservées pendant la même période.

Si vous pouviez être assez aimable pour m'autoriser à réaliser l'étude décrite ci-dessus à votre département, je vous serais très reconnaissant de me répondre avant le 30 août 2017.

**Nom de la personne autorisée et titre et Signature:**

**Date:**

Si vous avez des préoccupations ou des questions supplémentaires, s'il vous plaît à me contacter par courriel à [xxx@umontreal.ca](mailto:xxx@umontreal.ca) ou [xxx@gmail.com](mailto:xxx@gmail.com); par téléphone au xxx-xxx-xxx-xxxx; ou via Skype compte xxx.

Je vous remercie d'avance pour votre temps et d'attention.

Bien cordialement,

Qian Zhang

Le 01 avril 2017

# Appendix J: Teacher Interview Questions

(Presented in English, French and Chinese Versions)

## Qualitative Instrument

These questions will investigate how student and teacher use of social software promotes the students' academic success and student and teacher attitudes towards and perceptions of media literacy and the role of gate-keeping in regards to information and knowledge. Questions should be as open-ended as possible in order to allow the subjects to choose the aspects of the question they want to answer. The aspects they choose are an important source of data because they reveal part of the individual's belief structure (Bowden & Walsh, 2000).

**Part 1:** Describe the basic information on social software using. 描述使用社交软件的基本信息。

1. How do you define social software? What do you think social software is for? Which social software do you use frequently? (For example: Facebook or Skype) What is your understanding of social software features? (As a teacher in Canada and in China)

您是如何定义社交软件的？您认为社交软件是干什么的？您经常使用的社交软件有哪些？以 QQ 或者 Skype 为例，您了解的社交软件的功能有什么？（对于中国的老师）

Comment définissez-vous les logiciels sociaux? Que pensez-vous des logiciels sociaux ? Quels sont les logiciels sociaux que vous utilisez souvent? (Par exemple: Facebook ou Skype?) Quelle est votre compréhension des fonctions liées au logiciel social? (En tant qu'enseignant au Canada)

2. How do you use social software such as Facebook, Skype and Twitter? Do you use Skype's video feature to give classes to students or communicate with students? (As a teacher in Canada)

Comment utilisez-vous les logiciels sociaux? Comme Facebook, Skype et Twitter. Utilisez-vous la fonction vidéo de skype pour donner des cours aux étudiants ou communiquer avec les étudiants? (En tant qu'enseignant au Canada)

3. How do you use QQ, WeChat and Sina Weibo? Do you use your QQ space or We Chat friends' circle? Do you use QQ's video feature to give classes to students? (As a teacher in China)

您是怎么使用 QQ、微信和新浪微博的？您是否使用您的 QQ 空间或者微信朋友圈？您是否使用 QQ 视频和学生上课？（对于中国的老师）

4. With whom do you communicate via the social software and why? Do you think that communication with students on social software is formal or informal? (As a teacher in Canada and China)

您通过使用社交软件和谁沟通，为什么？您认为在社交软件上和学生的交流是正式的还是非正式的？（对于中国的老师）

Avec qui communiquez-vous via le logiciel social et pourquoi? Pensez-vous que la communication avec les étudiants dans le logiciel social est formel ou informel? Pensez-vous que le contact par email avec les étudiants est plus formels que par les logiciels sociaux? (En tant qu'enseignant au Canada)

5. Are there people in the contact list you do not communicate with on Facebook or QQ and why? Do you delete their names in the contact list? (As a teacher in Canada and China)

在您的社交软件里的联系人名单中有不沟通的人吗？您是否会删除联系人名单中不联系的人？为什么？（对于加拿大和中国的老师）

Y a-t-il des gens que vous ne communiquez pas sur la liste de contacts avec des logiciels sociaux et pourquoi? Supprimez-vous le nom de la personne sur la liste des contacts des logiciels sociaux lorsque vous ne la recontactez pas? (En tant qu'enseignant au Canada)

6. Do you use real name or nicknames on social software? Why? (As a teacher in Canada and China)  
在社交软件上您使用真实名字吗? (对于中国的老师)  
Utilisez-vous le vrai nom ou le surnom sur les logiciels sociaux? Pourquoi? (En tant qu'enseignant au Canada)
7. What content do you usually post on social software? (As a teacher in Canada and China)  
您通常会发布什么内容在社交软件上? (对于中国的老师)  
Quels contenus vous affichez habituellement sur les logiciels sociaux? (En tant qu'enseignant au Canada)
8. What feedback do you provide when your students update their status? (As a teacher in Canada and China)  
当学生在社交软件上的状态更新的时候, 您会提供什么样的反馈? (对于中国的老师)  
Pouvez-vous parcourir les contenus du posté par votre étudiants sur Facebook? Quels commentaires vous fournissez lorsque vos élèves mettent à jour leur statut? (En tant qu'enseignant au Canada)
9. Besides the above-mentioned social software, do you also use other social software? If your answer is "Yes," please specify which social software you use. (As a teacher in Canada and China)  
除了以上提到的社交软件, 您还使用别的社交软件吗? 如果回答是肯定的, 请告知您使用的是哪些社交软件。 (对于中国的老师)  
En plus du logiciel social mentionné ci-dessus, utilisez-vous également d'autres logiciels sociaux?  
Si votre réponse est « Oui », s'il vous plaît parler les logiciels sociaux que vous utilisez. (En tant qu'enseignant au Canada)

**Part 2:** To understand how students and their teachers use social software to support the students' social and academic integration process in Canada vs. China. 为了了解学生和他们的老师如何使用社交软件来支持学生社交和学业融合的过程。

10. How do you use Facebook and Twitter or QQ and Sina Weibo when you communicate with your students? Do you create or have some groups on a social software? Please give a concrete example. Do you recommend to students the latest academic website, articles or information? Expand description if you wish. (As a teacher in Canada and China)  
在和学生交流过程中, 您怎么用 QQ 和新浪微博? 您会在社交网站上建立或者拥有一些群吗? 请给我一个具体的例子。例如您是否推荐给最新学术网站、文章或者信息。您可以展开您的描述。 (对于中国的老师)  
Comment utilisez-vous Facebook et Twitter lors de la communication avec vos étudiants? Avez-vous créé ou avoir des groupes sur le logiciel social? S'il vous plaît me donner un exemple concret. Est-ce que vous recommandez aux étudiants les sites webs académiques, les articles ou les informations les plus récents? Vous pouvez élargir votre description. (En tant qu'enseignant au Canada)

**Part 3:** To understand how students and their teachers use social software in students' learning processes in Canada vs. China. 为了了解学生和他们的老师如何在他们的学习过程中使用社交软件。

11. How do you use Facebook and Twitter (or QQ and Sina Weibo) for teaching purposes? Do you create a guidance group on a social software? Please give a concrete example. What opinions have you formed on the relationship between social software and teaching? Expand on your opinions if you wish. (As a teacher in Canada and China)



为了教学目的，您是怎么使用 QQ 或者新浪微博) 的？您会在社交网站上建立一个指导群吗？请举出一个具体的例子。对于社交软件和教学之间的关系您的观点是什么？您可以展开您的描述。（对于中国的老师）

Comment utilisez-vous Facebook et Twitter pour des fins d'enseignement? Est-ce que vous créez un groupe d'orientation sur un logiciel social? S'il vous plaît me donner un exemple concret. Par exemple, lorsque vous dirigez les étudiants pour compléter une thèse ou travail du projet? Pour la relation entre les logiciels sociaux et de l'enseignement, que penseriez-vous d'autre? Vous pouvez élargir votre description. (En tant qu'enseignant au Canada)

**Part 4:** To analyze the means deployed by students in order to evaluate the information literacy of social software and how their teachers intervene to support them in this process in Canada vs. China. (Information literacy). 分析学生使用的手段来评估社交软件的信息素养，以及他们的老师如何在加拿大和中国的这个过程中支持他们（信息素养）。

12. How do you define information literacy? (As a teacher in Canada and China)

您是怎么定义媒介素养的？（对于中国的老师）

Comment définissez-vous l'alphabétisation de l'information? (En tant qu'enseignant au Canada)

13. How do you encourage students to develop their reflection and critical thinking skills in the process of using social software? Explain further if you wish. (As a teacher in Canada and China)

在您的学生使用社交软件的过程中，您是怎么带动学生发展他们的反思和批判思维的技能？您可以展开您的描述。（对于中国的老师）

Comment encouragez-vous les étudiants à développer leur réflexion et la pensée critique dans le processus d'utilisation des logiciels sociaux? Vous pouvez élargir votre description. (En tant qu'enseignant au Canada)

## Appendix K: Students Interview Questions

(Presented in English and Chinese Versions)

### Qualitative Instrument

These questions will investigate how student and teacher use of social software promotes the students' academic success. The questions will reveal the students' and teachers' attitudes towards information. The questions will be as open-ended as possible in order to allow the individuals to choose the aspects of the question they want to answer. The aspects of the questions they choose are an important source of data because they reveal part of the individual's belief structure (Bowden & Walsh, 2000).

**Part 1:** Describe the basic information on social software using. 描述使用社交软件的基本信息。

1. How do you define social software? What do you think social software is for? Which social software do you use frequently? What is your understanding of the social software features? (As a student in Canada and China)

您是如何定义社交软件的？您认为社交软件是干什么的？您经常使用的社交软件有哪些？您了解的社交软件的功能有什么？（对于中国的学生）

Comment définissez-vous les logiciels sociaux? Que pensez-vous des logiciels sociaux ? Quels sont les logiciels sociaux que vous utilisez souvent? Quelle est votre compréhension des fonctionnalités du logiciel social?

2. How do you use Facebook, Skype or Twitter? Do your teachers use Skype's video feature to give classes to students? (As a student in Canada)

Comment utilisez-vous Facebook, Skype ou Twitter? Est-ce que vos enseignants utilisent la fonction vidéo de Skype pour donner des cours aux étudiants? (En tant qu'étudiant au Canada)

3. How do you use QQ, WeChat or Sina Weibo? Do you use your QQ space or We Chat friends' circle? Do your teachers use QQ's video feature to give courses to students? (As a student in China)

您是怎么使用QQ、微信或者新浪微博的? 您是否使用您的QQ空间或者微信朋友圈? 您的老师是否使用QQ视频给学生上课? (对于中国的学生)

4. With whom do you communicate via social software and why? Do you think that communication with teachers in social software is formal or informal? (As a student in Canada and China)

您通过使用社交软件和谁沟通, 为什么? 您认为在社交软件上和老师的交流是正式的还是非正式的? (对于中国的学生)

Avec qui vous communiquez par le logiciel social et pourquoi? Pensez-vous que la communication avec les enseignants dans le logiciel social est formel ou informel? (En tant qu'étudiant au Canada)

5. Are there people on the contact list you do not communicate with using social software and why? Do you delete names in the contact list? (As a student in Canada and China)

在您的社交软件里的联系人名单中有不沟通的人吗? 您是否会删除联系人名单中不联系的人? (对于中国的学生)

Y a-t-il des gens que vous ne communiquez pas sur la liste de contacts et pourquoi? Est-ce que vous supprimez les noms dans la liste des contacts? (En tant qu'étudiant au Canada)

6. Do you use a real name or a nickname on social software? (As a student in Canada and China)

在社交软件上您使用真实名字吗? (对于中国的学生)

Utilisez-vous le vrai nom ou le surnom sur les logiciels sociaux? (En tant qu'étudiant au Canada)

7. What content do you usually post on social software? (As a student in Canada and China)

您通常会在社交软件上发布什么内容? (对于中国的学生)

Quel contenu vous affichez habituellement sur les logiciels sociaux? (En tant qu'étudiant au Canada)

8. What feedback do you provide when your teachers update their status on Facebook? (As a student in Canada and China)

当老师在社交软件上的状态更新的时候, 您会提供什么样的反馈? (对于中国的学生)

Quels commentaires avez-vous fournis lorsque vos enseignants mettent à jour leur statut? (En tant qu'étudiant au Canada)

9. Besides the above-mentioned social software, do you also use other social software? If your answer is "Yes," please specify which social software you use. (As a student in Canada and China)

除了以上提到的社交软件, 您还使用别的社交软件吗? 如果回答是肯定的, 请告知您使用的是哪些社交软件。 (对于中国的学生)

En plus des logiciels sociaux mentionnés ci-dessus, utilisez-vous également d'autres logiciels sociaux? Si votre réponse est « Oui », s'il vous plaît spécifier les logiciels sociaux que vous utilisez.

**Part 2:** To understand how students and their teachers use social software to support the students' social and academic integration process in Canada vs China. (Tinto) 为了了解学生和他们的老师如何使用社交软件来支持学生社交和学业融合的过程。

10. How do you use Facebook or Twitter/ QQ or Sina Weibo when communicating with your teachers? Do you create or have some groups with your classmates on social software? Please give a concrete example. Do your teachers recommend to students the latest academic website, articles or information? You can expand your description. (As a student in Canada and China)

在和老师交流过程中，您怎么用 QQ 和新浪微博？您会在社交网站上建立或者拥有群吗？请给我一个具体的例子。您的老师是否推荐给最新学术网站、文章或者信息。您可以展开您的描述。（对于中国的学生）

Comment vous utilisez Facebook ou Twitter quand vous contactez vos enseignants? Créez-vous ou avez-vous des groupes avec votre camarade de classe sur les logiciels sociaux? S'il vous plaît me donner un exemple concret. Est-ce que vos enseignants recommandent aux étudiants les nouvelles académiques des sites webs, des articles ou des informations? Vous pouvez élargir votre description. (En tant qu'étudiant au Canada)

11. Do you think the following statements are positive or negative in the relationship between self-efficacy and social software groups?

11.1 Online learning environment 在线学习环境

11.1.1 Interaction on social software course groups related to getting a good grade.

在社交软件课程群中的互动关系到获得一个好的学习成绩。

Interaction sur les groupes de cours de logiciels sociaux liés à obtenir une bonne note.

11.1.2 Interaction on social software class groups related to getting a good grade.

在社交软件班级群中的互动关系到获得一个好的与老师和同学的关系。

Interaction sur les groupes de classes de logiciels sociaux liés à obtenir une bonne note.

11.2 Interaction between teacher and students in social software groups

11.2.1 Teachers' support helps me to understand the basic concepts of the course.

老师的支持帮助我理解基本的课程概念。

Le soutien de l'enseignant m'aide à comprendre les concepts fondamentaux.

11.2.2 Classmate's support to help me complete the collaborative project and course examinations.

同学们的支持帮助我完成合作项目作业和课程的考试。

Le soutien de camarade de classe m'aider à compléter les projets de collaboration et les examens de cours.

11.2.3 I trust teachers and classmates' posts on social software class and course groups.

我信任老师和同学们在社交软件群中发的帖子。

Je fais confiance des messages des enseignants et de camarades sur les groupes de classe et course de logiciels sociaux.

11.3 Interaction between student and learning content.

11.3.1 I am confident that I can understand the most difficult points of the course through having the resources of the group.

通过获取群里的资料，我有信心我能理解课程的难点。

Je suis convaincu que je peux comprendre les points les plus difficiles du parcours grâce à l'obtention des ressources du groupe.

11.4 Interaction between the student and the learning behaviours

11.4.1 Observing the learning patterns of others in the group has contributed to my learning outcomes.

观察其他人多学习方式有助于我的学习成绩。

L'observation des modes d'apprentissage des autres membres du groupe a contribué à mes résultats d'apprentissage.

11.4.2 Private conversations (one-to-one Facebook messengers or QQ dialogue window) protect my self-esteem.

隐私的交谈，例如在使用 Facebook 的 messenger 或者 QQ 的单独对话窗口，保护了我的自尊心。

La conversation privée (la messagerie Facebook ou une fenêtre de dialogue QQ) protège mon estime de soi.

11.4.3 The interaction in the social software group gives me a sense of belonging.

在社交软件群组中的互动给予了一种归属感。

L'interaction dans le groupe de logiciels sociaux me donne un sentiment d'appartenance.

**Part 3:** To understand how students and their teachers use social software in students' learning processes in Canada vs. China. 为了了解学生和他们的老师如何在他们的学习过程中使用社交软。

12. How do you use Facebook or Twitter/QQ or Sina Weibo) for learning purposes? Do your teachers create a guidance group on a social software? Please give a concrete example. For example, project work. Expand on description if you choose. (As a student in Canada and China)

为了学习目的，您是怎么使用 Facebook 和 Twitter（或者 QQ 和新浪微博）的？您会在社交网站上建立一个指导群吗？请举出一个具体的例子，例如当您完成一个作业项目。您可以展开您的描述。（对于学生的学生）

Comment utilisez-vous Facebook ou Twitter pour des fins d'apprentissage? Est-ce que votre enseignant crée-t-ils un groupe d'orientation sur un logiciel social? Donnez-moi un exemple concret, s'il vous plaît. Par exemple, un travail de projet. Comment vous communiquez avec votre professeur ou d'autres étudiants? Vous pouvez développer votre description. (En tant qu'étudiant au Canada)

**Part 4:** The following questions analyze the means deployed by students in order to evaluate information literacy on social software, and how their teachers intervene on social software to support them in this process. (Information literacy).

对于加拿大和中国的学生，为了评估信息素养中的社交软件部分，要分析学生使用社交软件的状况，他们的老师如何在学习的过程中通过使用社交软件进行干预来支持学生（信息素养）。

Les questions suivantes analysent les moyens mis en œuvre par les étudiants pour évaluer la maîtrise de l'information sur les logiciels sociaux, et comment leurs enseignants interviennent sur les logiciels sociaux pour les soutenir dans ce processus (maîtrise de l'information).

Choose one, more or none of the following answers for each question. Tick appropriate box.

(1) How do you articulate and criticize online information and its sources?	Canadian students	Chinese students
a. Examine and compare online information from various online sources in order to evaluate reliability, validity, accuracy, authority, timeliness and point of view or bias.		
b. Validate understanding and interpretation of the information through discourse with other individuals, subject-area experts or practitioners (e.g., teacher, peer or experienced people).		
c. Identify resources in a variety of formats (e.g., social software, database, website, data set, audio/visual and book).		
(2) How do you gather information online or person to person?	Canadian students	Chinese students
a. Use various online search engine systems.		
b. Use specialized online or in-person services (e.g., library, professional associations, institutional research offices, community resources, experts and practitioners).		

<b>(3) How do you extract, record and manage the information and its sources?</b>	<b>Canadian students</b>	<b>Chinese students</b>
a. Copy-and-paste software functions, photocopier, scanner, audio or visual equipment.		
b. Use technologies to manage the information selected and organized (e.g., Evernote).		
<b>(4) How do you interpret the information: through discourse with other individuals, subject-area experts or practitioners?</b>	<b>Canadian students</b>	<b>Chinese students</b>
a. Participate in classroom and other discussions in class social software group designed to encourage discourse on the topic.		
<b>(5) How do you follow laws, regulations, institutional policies and etiquette related to the access and use of information resources?</b>	<b>Canadian students</b>	<b>Chinese students</b>
a. Use approved passwords and other forms of ID to access information resources.		
b. Preserve the integrity of information resources, equipment, systems and facilities.		
c. Legally obtain, store and disseminate text, data, images or sounds.		
d. Demonstrate an understanding of what constitutes plagiarism and not represent work attributable to others as his/her own.		

The open inference question for students is as follows:

Suppose you read a research article online that suggests your graduate degree will not readily lead to a job in the job market. How do you judge whether the information is believable?

# Appendix L: Observation of Social Software Group Guide

(Social software group chatting and activities will be recorded by text and screen capture in the observation process)

1. To understand how students and teachers use social software to support the students' social and academic integration process in Canada vs. China. (Tinto)

To observe teachers:

How do teachers use Facebook groups or QQ groups when they communicate with their students?

-Whether teachers are a member of the Facebook group or the QQ group?

-Whether teachers chat or video with students on Facebook group or QQ group?

-Whether teachers leave comments on Facebook group or QQ group?

-Whether teachers invite students to class discussions through Facebook groups or QQ groups?

Etc.

To observe students:

How do students use Facebook groups or QQ groups when they communicate with their teachers and other students?

-Whether students are a member of the Facebook group or the QQ group?

-Whether students chat or video with other students on the Facebook group or QQ group?

-Whether students discuss some non-academic things on a Facebook group or a QQ group?

Etc.

How do students use the Facebook groups or QQ groups when they collaborate with other students?

-Whether students like to use nicknames on the Facebook group or QQ group?

-Whether students share the latest information of class activities on the Facebook group or QQ group?

-Whether students conduct class discussions through the Facebook group or QQ group?

Etc.

2. To understand how students and their teachers use social software in the students' learning processes in Canada vs. China.

To observe teachers:

How do teachers use Facebook groups or QQ groups for teaching purposes?

-Whether teachers create a Facebook group or QQ group for special interest projects?

-Whether teachers propose reading books on Facebook groups or QQ groups?

-Whether teachers demonstrate excellent student work or new information in their field of research on Facebook groups or QQ groups?

-Whether teachers use Facebook groups or QQ groups to get feedback for students' assignments.

-Whether teachers share student learning with the other students on a Facebook group or QQ group.

-Whether teachers give students a Virtual Classroom by Facebook group or QQ group course live video

Etc.

How do students use Facebook group or QQ group for learning purposes?

To observe students:

-Whether students create a Facebook group or QQ group accounts for a special interest learning project.

-Whether students like to share, receive and send files on Facebook group or QQ group.

Etc.

3. To analyze the means deployed by students in order to evaluate the information literacy of social software and to intervene in social software and how their teachers support them in this process in Canada vs China. (Information literacy)

How do teachers encourage students to develop their reflection and critical thinking skills in the process of using social software?

To observe teachers:

-Whether teachers teach students to decide what to keep, what to discard, whom to trust, what is credible, and why and when students use Facebook group or QQ group?

To observe students:

1. How do students identify the elements in a reasoned case, especially reasons and conclusions on social software?
2. How do students identify and evaluate assumptions on social software?
3. How do students clarify and interpret expressions and ideas on social software?
4. How do students judge acceptability, especially the credibility of claims on social software?
5. How do students evaluate arguments of different kinds on social software?
6. How do students analyze, evaluate and produce explanations on social software?
7. How do students analyze, evaluate and make decisions on social software?
8. How do students draw inferences on social software?
9. How do students produce arguments on social software?