THE INFLUENCE OF GENDER, SELF-ESTEEM, AND COMPUTER SELF-EFFICACY ON THE INTERNET USAGE PATTERNS OF SELECTED HIGH SCHOOL STUDENTS IN BANGKOK

Rose N. Koini

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of

MASTER OF SCIENCE IN COUNSELING PSYCHOLOGY

Graduate School of Psychology
ASSUMPTION UNIVERSITY
Thailand

2016

THE ASSUMPTION UNIVERSITY LIBRARY

THE INFLUENCE OF GENDER, SELF-ESTEEM, AND COMPUTER SELF-EFFICACY ON THE INTERNET USAGE PATTERNS OF SELECTED HIGH SCHOOL STUDENTS IN BANGKOK

Rose N. Koini

A Thesis Submitted in Partial Fulfillment

of the Requirements for the Degree of

MASTER OF SCIENCE IN COUNSELING PSYCHOLOGY

Graduate School of Psychology

ASSUMPTION UNIVERSITY

Thailand

2016

มหาวิทยาลัยอัสสัมชัญ
ASSUMPTION UNIVERSITY

INTERNET USAGE PATTERN, SELF – ESTEEM, AND COMPUTER SELF- EFFICACY AS A FUNCTION OF GENDER AMONG HIGH SCHOOL STUDENTS IN BANGKOK

Rose N. Koini

October 2016

The purpose of this study was to internet usage pattern, self – esteem, and computer self – efficacy as a function of gender among high school students in Bangkok.

Approved:

DR. PARVATHY VARMA SYAMALA KUMARI
Chairperson

ASST. PROF. ~~DR. ROB~~ERT HO
External Examiner

DR. NATALIE CHANTAGUL
Advisor

DR. REGINALD PAWLE
Member

DR. SANTHOSH AYATHUPADY MOHANAN
Member

ABSTRACT

The current study attempted to examine the influence of gender, self-esteem, and computer self-efficacy on the Internet usage patterns of high school students in Bangkok. Participants consisted of 200 senior students recruited through simple random sampling technique from an international high school in Bangkok, aged between 13 and 19 years who have access to the Internet for social and academic purposes. A survey questionnaire incorporating items on demographic characteristics and Internet usage patterns, the Rosenberg Self-Esteem Scale to measure self-esteem, and the Computer Attitude Questionnaire to measure computer self-efficacy was utilized for data gathering and analysis. Reliability analysis was conducted on the self-esteem and computer self-efficacy scales for the purpose of maximizing the internal consistency of these two measures. MANOVA was conducted to test for gender differences in the variables of self-esteem and computer self-efficacy and the three Internet usage patterns of number of hours of computer use at home, number of hours spent on the Internet at home, and number of hours of computer use at school. The results indicated that: (1) female participants reported spending more time using the computer at home and at school than their male counterparts, whereas the male participants reported spending more time on the Internet at home than their female counterparts. (2) MANOVA results indicated that there was no overall gender effect for all variables of this study, namely: Internet usage patterns (i.e., number of hours of computer use at home, number of hours spent on the Internet at home, number of hours of computer use at school), self-esteem, and computer self-efficacy.

(3) In order to test the impact of the male and female participants' levels of self-esteem and computer self-efficacy on the number of hours of computer use at home, the number of hours spent on the Internet at home, and the number of hours of computer use at school), multiple regression analysis was conducted for the male and female participants, separately. The results showed that for both the male and female participants, their reported levels of self-esteem and computer self-efficacy were not significantly related to their Internet usage pattern.

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS OF ST GABRIEL
LABOR VINCIT
OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

ACKNOWLEDGEMENTS

Profound gratitude is owed to my Research Supervisor, Dr. Natalie Chantagul, for her wisdom, guidancē, and encouragement; her mentoring and valuable comments helped me overcome the challenges of research. I also wish to express my sincere appreciation to Dr. Suwattana Eamoraphan for her support throughout this course.

I thank Dr. Maria Bella Bamforth for her unwavering inspiration and continued support accorded me during my thesis writing and for her meticulous editing of the final manuscript. I owe Dr. Robert Ho a debt of gratitude for not giving up on me when I had difficulty analyzing my data. I appreciate his patience and wise counsel.

Finally, it is with great humility that I dedicate this work to my sisters Mercy, Jackline, and my brother Oscar.

R. K.

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS OF ST GABRIEL
LABOR VINCIT
OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

THE ASSUMPTION UNIVERSITY LIBRARY

TABLE OF CONTENTS

Content	Page
Title Page	i
Approval Page	ii
Abstract	iii
Acknowledgements	iv
Table of Contents	v
List of Tables	vi
List of Figures	vii
Chapter I: INTRODUCTION	
Background of the Study	1
Statement of the Problem	9
Purpose of the Study	12
Significance of the Study	13
Definition of Terms	15
Chapter II: LITERATURE REVIEW	18
Internet Use	18
Internet Use and Gender	26
Internet Use and Self-Esteem	30
Internet Use and Computer Self-Efficacy	32
Interrelationships Among the Key Variables	36
The Current Investigation	39

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS OF ST GABRIEL
LABOR OMNIA VINCIT
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

Conceptual Framework 39

Research Questions 40

Research Hypotheses 41

Chapter III: METHODOLOGY 42

Research Design 42

Participants of the Study 43

Research Instrumentation 44

Data Collection Procedure 45

Data Analysis 46

Ethical Considerations 47

Chapter IV: RESULTS 48

Demographic Profile of Respondents 49

Reliability Analysis of Scales Employed 49

MANOVA to Test for Gender Differences 52

Impact of Self-Esteem and Computer Self-Efficacy on Male and Female Participants' Internet Usage Pattern 52

Summary of Findings 55

Chapter V: DISCUSSION 56

Overview of the Current Investigation 56

Discussion of Findings 57

Conclusion 60

Limitations of the Study 61

Recommendations 63

REFERENCES 67

APPENDICES 81

Appendix A: Survey Questionnaire 81

Appendix B: Statistical Output 84

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS OF ST GABRIEL
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

LIST OF TABLES

Table		Page
1	Scale Items Together With Their Corrected Item-Total Correlations and Cronbach's Alphas	50
2	Means and Standard Deviations for the Factors of Number of Hours of Computer Use at Home, Number of Hours Spent on the Internet at Home, Number of Hours of Computer Use at School, Self-Esteem, and Computer Self-Efficacy as a Function of Gender	51

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS OF ST GABRIEL
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

LIST OF FIGURES

Figure		Page
1	The Conceptual Framework of the Current Study	39
2	Regression Model of the Male and Female Participants' Internet Usage Pattern as a Function of Their Levels of Self-Esteem and Computer Self-Efficacy	54

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS OF ST GABRIEL
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

CHAPTER I

Introduction

Background of the Study

The Internet has recently become one of the most important tools in people's lives with rapid developments in the field of information and communication technologies. The Internet is now used extensively in many areas, especially in the field of education (Geçer, 2014). As a support system in education, many educational institutions are increasingly using Internet infrastructure to promote better learning outcomes (Moyle, 2010). According to Boldt, Gustafson, and Johnson (1995), the Internet is a great tool that can be used to enrich students' learning habits and experiences. When analyzed in terms of student learning, the Internet provides a rich and flexible learning environment, inexpensive and easy access to information, and a variety of different animations, videos, and hypertexts (as cited in Geçer, 2014). Many institutions, instructors, and policy makers have taken advantage of the flexibility of online learning in order to cater to the needs of current and potential students at all levels of education, including those who were unable to attend traditional courses on campus (Kraut & Kiesler, 2003). Educators who advocate technology integration in the learning process believe it will improve learning and better prepare students to effectively participate in the 21st century workplace (Reiser, 2001, as cited in Sam, Othman, & Nordin, 2005). Therefore, studying students' attitudes toward the Internet (cyberspace) and their usage patterns is central to understanding the social, psychological, and economic implications that come with its use, some of which may require the attention of different stakeholders in the education sector.

Recent literature on Internet use shows that the Internet provides a wide range of resources for most of the technology-literate population (Choi & DiNitto, 2013). For students, the role of the Internet has increased from providing social and academic support to becoming a major mode of course delivery in the education sector (Tekinarslan, 2009). This shows that among other things, it has shaped teaching strategies, as well as the way students interact with their peers, teachers, and the world around them (Thanuskodi, 2009). Kraut et al. (2002) observed that children's Internet use is shaped by factors such as time spent with family and friends. If the family finds cyberspace an important commodity for educational purposes, then, children will also tend to use it for the same purpose. Understanding relationships between socio-demographic factors, personal characteristics, and *Internet usage patterns* can significantly shape both professional practice and theoretical literature. In integrating computers in higher education, researchers have proposed that positive attitudes toward computers and high *computer self-efficacy* could be important factors in helping people learn computer skills and use the Internet (e.g., Busch, 1995, as cited in Sam et al., 2005). By the same token, Internet self-efficacy beliefs suggest that the individual possesses not only computer skills, but the skills necessary to efficiently use email, access Web addresses, scan information, and so on (Geçer, 2014).

Internet (World Wide Web) use is influenced by psychological traits like *self-esteem*, emotional openness, and communication apprehension (Zhang, Shing-Tung, & Leung, 2011). When usage is linked to social factors such as information-seeking, self-status and image, and interpersonal relationships, there tends to be variations in Internet use from context to context. For example, Lee, Lee, Choi, Kim, and Han (2014) observed that using social media for

information-seeking about body image positively relates more to body satisfaction in Korea compared to the United States (US).

In this age of all-pervading use of computers in most parts of the world, the issue of *gender* and computer use should be redundant. Balka and Smith (2000) reported that in the US, the proportion of females studying computing was getting less in recent years. Thus, the issue of gender differences in computer use is still relevant, especially with the advent of the Internet. Gackenbach (1998) opined that it is necessary to continue to study the 'genderization' of computing and Internet use (all as cited in Sam et al., 2005). These variations in individual characteristics such as self-esteem, computer self-efficacy, and gender differences are integral to the current investigation on Internet usage.

Students are no longer bound by the need to learn a topic solely from a book; they can get first-hand information about it or 'Google' out the information by themselves. The World Wide Web has brought the world to the classrooms, making information accessible whenever and wherever. Therefore, as the Internet or Web becomes a familiar element in our homes, schools, and offices, the use of technology in education can no longer be considered optional (Gordon, 2011). Something that has remained an important issue of interest among scholars, practitioners, and other stakeholders in the education sector is the way students use the Internet. In schools where the Internet is accessible, students use it when searching for information and when completing tests, among others. When they have some spare time, they chat with friends, play online computer games, and are involved in fan fiction; that is, using published material to create pictures and films, and so on (Olin-Scheller & Wikström, 2010).

Web access and usage in the world has been proliferating year by year, with approximately 1.11 billion users in 2007, 1.67 billion in 2009, and 1.97 billion in 2010 (Miniwatts Marketing Group, 2010), indicating an upward trend in the number of digitally literate people. Such rapid growth has interacted with people's needs and motivations. Information, communication, and entertainment have been prominent motives behind Internet use. Its advantages are undeniable and well-evidenced in the literature. However, excessive or unregulated usage has been associated with the condition of Internet-related disturbances which Morahan-Martin (2008) called "Internet abuse", referring to the patterns of using the Internet that result in disturbances in a person's life but does not imply a specific disease process or addictive behavior. Nowadays, the adoption of digital technologies is known to be higher in young adolescents than adults. For example, the highest proportion of computer and Internet usage belongs to the 16–24-year-old age group in Turkey (TUIK, 2010), where Internet users aged 15 and older were reported as the most engaged users in Europe in terms of time spent and content consumed on the Internet (ComScore, 2009).

Gender differences in Internet use.

In view of the foregoing, the question as to whether male students use the Internet in different ways than female students do has yielded different results. Earlier studies show that gender, among other local and national contextual identities, shape the differences in the way students use the Internet (Li & Kirkup, 2007). While a study by Sam et al. (2005) showed that gender differences in Internet use have disappeared, another study involving undergraduate students found that, while female undergraduates use the Internet for academic purposes, their male counterparts use it for other reasons (Joorabchi, Osman, & Hassan, 2012). In the US and Australia, men and women largely use the Internet in equal measure. A study on Anglo-Celtic

women with Internet access in rural Australia demonstrated that women use it as a tool for activity rather than mastering virtual games (Singh, 2001). The study also showed that women's discomfort with the technology before they mastered it was largely a social construct. Taipale (2012) conducted a study in Finland on how men and women spend time on the Internet and established that, although both men and women read online newspapers, men read more online newspapers than women. A study on sensation-seeking using the Internet indicated that men were dominant Internet users. However, when the technology became more established, the gender difference diminished, according to Lopez-Bonilla and Lopez Bonilla (2010). These results indicate that gender difference in Internet usage remains to be a knowledge gap.

There are numerous debates on the relationship between gender and World Wide Web usage. A large number of researchers reported gender disparity in Internet usage. From the International Telecommunication Union (ITU) database, it was estimated that there were approximately 2,749 million Internet users in March, 2013. This number was divided by gender and economic development which showed that more males than females use the Internet, and that 41% of males worldwide are online, compared to 37% of females. Males in both developed and developing countries took the lead in terms of the amount of time they spend on the Internet. Gender inequality among young British people with Internet access is relatively smaller and gender difference in elderly people is related to other factors such as marital status and occupation (Livingstone & Helsper, 2010). The same study reported that, besides positive benefits that come with Internet literacy, access to the Internet and level of skills in its use increase the chances of Internet-related risks. In the US, for example, Tynes and Mitchell's (2013) study on black youth and Internet use demonstrated that while both

males and females are exposed to exploring sexuality via the Internet at ages 13 to 17, females are more vulnerable to increased sexual victimization than males. A study on Turkish Cypriots showed that ethnically marginalized Turkish Cypriots engage more in expression, association with, and learning online (Milioni, Doudaki, & Demertzis, 2014). Ramón-Jerónimo, Peral-Peral, and Arenas-Gaitán (2013) reported that in Spain where access to the Internet is easy, men tend to perceive its usefulness more than women. While the Internet is perceived to be a type of communication appliance like radio, its use in society is socially constructed in ways that articulate that it is gendered (Van Zoonen, 2002). The foregoing studies show that while gender difference in Web use tends to diminish with the younger generation, there are other socio-demographic factors that limit the way women develop their Internet use capabilities compared to men.

Gender difference research in Internet use is not only Western-based; there are records of gender difference studies within the Asian context. For example, Teo and Lim (1997) observed a difference in access between Singaporean boys and girls. The authors reported that Internet users in Singapore are mostly males, with females comprising only about 11% of users. It was also found that females and males are engaged in different Internet-based activities. More specifically, females spend more time for messaging activities and advertising campaigns while males are more into downloading and buying activities. Thus, to a certain extent, males and females do use the Internet for different purposes. Still in Singapore, another study that investigated Internet usage and problem-solving behaviors of young adults did not show any significant relationship between socio-demographic factors such as gender and perceived Internet skills (Cheong, 2008). Li and Kirkup (2007) investigated gender differences in the use of and attitudes toward the Internet and computers between Chinese and British

students. Significant gender differences were found in both national groups. Men in both countries were more likely than women to use email or chat rooms. Men played more computer games than women; Chinese men being the more active gaming players. Men in both countries were more self-confident about their computer skills than women, and were more likely to express the opinion that using computers is a male activity. Cheng, Ma, and Missari (2014) studied the effects of Internet use on adolescents' first romantic and sexual relationships in Taiwan. The study showed that the effects of Internet use on adolescents having sexual introduction before the first romantic relationship is substantially greater for girls than boys. The study also showed that Internet café visits increase the rate of adolescents' intimate experiences the effects of which are, again, greater for girls than for boys. Similarly, a study by Purushothaman and Zhou (2014) revealed that social, psychological, and cultural factors hinder women's learning of information technology more than men. Furthermore, a differential usage pattern in terms of frequency was noted in the study of gender and the Internet. In contrast to other research findings, however, a Thai-based study by Teo, Luan, Thammetar, and Chattiwat (2011) reported that no significant gender difference in e-learning was found. This is noteworthy and contrary to past and recent studies that have found gender differences in technology acceptance.

Internet use in Thailand.

In Thailand, the development of information infrastructure and the need to ensure that information technology standards are secure and reliable have been key to information technology policy. Whereas for the business sector, of primary importance is ensuring safe and reliable Internet business transactions and interactions; for students, on the other hand, the need to ensure that their Internet use behavior is guided in ways that (1) enhance positive use

and (2) provide mechanisms to address the effects of negative use as well as prevent negative use is of primary importance, both at the local and national policy level (Electronic Transactions Development Agency, 2013). In order to ensure this, schools need to understand the way students use the Internet and, from such information, insights can be drawn to formulate strategies aimed at improving students' usage of the phenomenal 'information superhighway'.

Thailand has recognized the importance of examining Internet use in the country and providing data about Internet usage behavior and other related factors. In evidence, a study conducted by the Thailand Internet User Profile (Electronic Transactions Development Agency, 2013) reported that majority of respondents were aged between 20 and 49 years, with few respondents aged 15 to 19 years. The results also suggested that majority of the respondents were largely working class. Similar school-based studies in Thailand have also focused largely on university students, although there are limited studies on students aged 11 to 19 years. In view of the increasing need to examine Internet usage behaviors among different age groups in Thailand, a school-based study was conducted by Ingard (2009) on Internet use among high school students in Bangkok. The results indicated that Internet-based instruction management, inception, usage behavior, and attitude had significant relationships with Internet usage for learning. The study set a knowledge base and served as a catalyst for further studies aimed at understanding the relationship between personal factors (e.g., attitudes) and Web usage patterns.

Statement of the Problem

Despite the economic agenda driving the adoption of the online network in both economically developed and rapidly developing countries, little cross-cultural educational research has been done on its use (Li & Kirkup, 2007). Cross-cultural comparisons are needed to give a better understanding of students' use of the Internet in different national cultural backgrounds. The Internet may be a global technology, but students work in local/national contexts and have differences in other aspects of their identities.

The use of the online network in Thailand as a component of modernity is better symbolized by its use in temples and religious functions, a radical change from the traditional archaic Buddhist way. It implies the widely realized need to integrate Internet usage in all aspects of life, as surmised by Taylor (2003) in his work on cyber-Buddhism and the changing urban space in Thailand. Although Thailand has increasingly attempted to improve the usage of Internet in the education sector, students in the country still face challenges such as accessibility to learning materials and restrictive exposure to teachers. The introduction of the Internet as a mechanism to enhance learning ought to take into account personal factors such as student's acceptance of Internet use. A study by Teo et al. (2011) involving three public universities in Thailand showed that students had above average level of e-learning acceptance. The study measured tutor quality, perceived usefulness, and facilitating conditions. While perceived usefulness and facilitating conditions were found to be related to attitude and Internet use, the study did not cover high school students. Suan (2010) examined Thai students' experiences in online learning while undertaking a business statistics course. The results revealed that majority of the students used the online mode for reading course materials, doing exercises, searching for information, taking quizzes, and communicating with

other students and online instructors. The implication of the study was that online learning improves students' attitudes toward business courses. While the study showed the importance and positive aspects of using the Internet in learning, there is still the need to understand other psychosocial aspects related to students' Internet use such as their attitude towards the technology, social relationships, as well as other aspects relevant to learning. Another Thai-based study, however, showed a different picture. Wanajak (2011) investigated the impact of Internet use on secondary school students in Chiang Mai, Thailand and reported signs of Internet addiction signs such as social withdrawal from family and friends, failure to finish assignments, poor grades, having relationship problems with family members and friends, aggressive behavior (e.g., yelling, unprovoked temper), sleep deprivation, and skipping meals.

Gender difference and Internet use.

Most research on gender difference in the use of the Internet has been done in Western countries (Li & Kirkup, 2007). But, if gender is a social construct, one cannot presume that it will be expressed in the same way everywhere. Therefore, studies of gender difference in Internet use in different cultural contexts need to be carried out. In Southeast Asia, including Thailand, few studies have been conducted on gender and Internet use. One of the few is Zainudeen, Iqbal, and Samarajiva's study (2010) on gender and the use of telephone-based Internet. Results showed no Internet divide in Thailand and the Philippines, compared to Pakistan and Sri Lanka. Similarly, a study on community learning centers in rural central Thailand demonstrated that there is no significant difference between males and females who use the community Internet library (Ahmed, 2010).

THE ASSUMPTION UNIVERSITY LIBRARY

81102 c.1

Self-esteem and Internet use.

How an individual perceives one's self-worth is associated with unhealthy levels of Internet use (Yao, He, Ko, & Pang, 2014). Yao et al. (2014) cited a number of studies that demonstrated a relationship between self-esteem and Internet use. For example, it was found that individuals with lower self-esteem are more likely to be identified as Internet addicts (Yang & Tung, 2007). Similar to an individual's stable personality traits, their perceptions of themselves are also important determinants of disordered Internet usage. Specifically, self-esteem has received attention from researchers when investigating the causes of Internet addiction. There have been conflicting findings about self-esteem and Internet use. For example, Armstrong et al. (2000) found that low self-esteem was a good predictor of Internet addiction. However, others have postulated that low self-esteem may be a consequence of Internet addiction, as a result of social isolation (Craig, 1995). There is also the rationale that self-esteem and Internet addiction is cyclical (Niemz et al., 2005) (all as cited in Yao et al., 2014). Inconclusive evidence on the relationship between self-esteem and Internet use warrants further exploration for more definitive conclusions.

Computer self-efficacy and Internet use.

Schumacher and Morahan-Martin (2001) commented on the limited research comparing computer and online network use. Gackenbach (1998), however, commented that the findings from the few studies on Internet use and attitudes suggest a parallel between computers and the Internet. Sam et al. (2005) cited several studies that demonstrated the effect of computer/Internet self-efficacy on computer-related behaviors. For example, a student's confidence about computer skills may affect the willingness to learn about computer skills.

The less confident a student feels about computer skills, the more he or she desires to learn about computer technology (Zhang & Espinoza, 1998). The authors also reported that past enrollment in computer programming courses was found to be positively related to self-efficacy and computer self-efficacy is positively related to plans to take more computer-related courses (all as cited in Sam et al., 2005). These studies show that self-efficacy in the use of computers and the Internet can have an important impact on computer and Web use.

In light of the foregoing perspectives and findings, increase in the use of the Internet in both the academic and social life of students remains an issue of interest for academics, practitioners, and other stakeholders in the education sector. This is because Internet usage has far reaching implications on education and social outcomes of students of all ages. While this is important, most school-based studies focused on undergraduate and graduate students. Studies focusing on the high school and elementary settings are few and far between. This shows that the issue is not yet conclusive, hence, the need for further studies on Internet usage behavior in different levels of education.

ASSUMPTION UNIVERSITY OF THAILAND
VINCIT OMNIA SINCE1969
มหาวิทยาลัยอัสสัมชัญ

Purpose of the Study

Past studies that have investigated gender difference in Internet use have focused primarily on identifying differences in the pattern of Internet use between males and females. These studies were mainly descriptive in nature in that they investigated gender differences in areas such as frequency of Internet use and types of Internet activities. While descriptive studies paint an overall picture of male and female differences in Internet use, they offer no explanation as to what factors cause these differences and how. From a psychological

perspective, it is necessary to move beyond a purely descriptive approach to a more cognitive approach that targets the reasons/motives that can account for the observed behavior to the "why" of the behavior (Ho, June 10th, 2015). In this regard, this study sought to advance the study on gender, self-esteem, self-efficacy, and Internet use patterns, with a focus on senior high school students. For adolescents in high school, this study was an attempt to enhance the understanding of gender-related factors and their consequential behavior patterns which may have effects on the psychosocial and physical health of students who are increasingly exposed to Internet use while pursuing both academic and psychosocial progress. Thus, the current study attempted to examine the Influence of Gender, Self-Esteem, and Computer Self-Efficacy on the Internet Usage Patterns of High School Students in Bangkok.

Significance of the Study

Despite the progress made in online network use, there are sociocultural and contextual factors that influence variation in outcomes among those who use the technology. For example, knowing significant variations in the way male and female students use the Internet can help stakeholders in the education sector, teachers, and administrators to formulate strategies that can promote learning in ways that enhance equality or help the disadvantaged group improve its use for better learning outcomes. Personal factors such psychological, emotional, health, and other social factors influence student learning. Understanding how such factors bear on the relationship between student attitude towards the Internet and its usage patterns will not only contribute to literature, but also generate insights that practitioners and other stakeholders in the education sector can use to improve different

aspects of student learning and performance. Knowing how health, emotional, or psychological issues are related to the way students use the technology can help school counselors, teachers, and administrators develop interventions that help students address challenges that hinder better performance in education and life. School administrators can use such information in planning for quality education, while teachers can get insights that can help them guide their students regarding the Internet as a learning resource. Given that its use in education and social life is still a new phenomenon in many developing countries including Thailand, such knowledge brings to the literature cases that support previous studies or suggest differences in the existing knowledge base. With more knowledge on the relationship between student attitudes about the Internet and their usage patterns, greater and deeper knowledge would be generated from which scholars and practitioners can draw relevant insights. Moreover, understanding how different sets of groups in society use the technology can help policy makers or practitioners in both private and public sectors to put in place mechanisms and strategies that enhance its good use as well as mitigate risks or consequences that come with its abuse or misuse. For policy makers, such information can help the government decide what measures can be used to prevent negative activities such as Internet addiction as well as online risks such as exposure to sexually explicit material and online victimization, including harassment or cyberbullying and sexual solicitation. Policy makers can also use such information to formulate support systems in the education sector, or improve cyberspace infrastructure regulations. Private sector agencies and Internet technology companies can use such information to improve their services, including curriculum, software, teacher-student relations, and provision of counseling services in school.

Definition of Terms

Computer Self-efficacy.

'Computer self-efficacy' is defined as judgment of one's capability to use a computer (Compeau & Higgins, 1995, as cited in Khorrami-Arani, 2001). In a more general sense, self-efficacy refers to prevailing disposition towards something (Knezek, Christensen, & Rice, 1996), suggesting self-confidence in doing something (e.g., performing a certain task). Within the context of the current study, computer self-efficacy is related to one's previous experiences with the computer. If individuals have little experience the first time they handled a computer, they may be motivated to learn more about using the computer (Sam et al., 2005). This indicates that computer self-efficacy is responsive to one's previous experiences; hence, it is dynamic rather than a static experience. Computer self-efficacy does not reflect one's actual knowledge of the computer or one's feelings towards the computer but, rather, it is one's own self-judgment or a reflection of the influence of one's perceptions (Brown, 2008). Operationally, in this study, computer self-efficacy was measured by means of the *Computer Attitude Questionnaire* (CAQ) developed by Gerald Knezek and other researchers at the Texas Center for Educational Technology in 1997.

Gender.

'Gender' is legally defined as the social and cultural construction of what it means to be a man or a woman, including roles, expectations, and behavior (NZHRC, 2008). Behavior is shaped according to gender where boys and girls are expected and socialized to behave differently. Gender involves behavior schema and norms society inculcates in the individual. This schema regulates the individual to act in a certain way believing that by doing so, that is

what makes the individual male or female (Schwalbe & Staples, 1991). In this case, males are socialized to see themselves and behave differently from the way females do. Therefore, gender entails a particular perception, belief system, and practices that influence males and females to hold different views and act differently in a given situation. Operationally, the 'gender' demographic pertained to either the 'male' or 'female' category under Section 1 (personal information) of this study's survey questionnaire.

Internet.

The 'Internet' is a global information technology linking computers and other digital gadgets in order to allow information transmission from one point to another. Internet activities include sending and receiving emails, library, social networking, and playing digital games. The Internet and social networking are not mutually exclusive but, rather, are interrelated. Currently, the Internet has become central to life (Bandini, 1996). The Internet today has become part of the normal environment. Students use the technology to play, learn, communicate, and form relationships. This has long-term effects on social change seen in society. The Internet has also led to increase in online communities and activities through social networking sites (Rawassizadeh, 2012). Therefore, the Internet is an instrument of media providing the technology that enables people to seek, share, receive, and send information that is intended to meet different needs including education, leisure, and information. In modern parlance, the term 'Internet' is used interchangeably with cyberspace, information superhighway, World Wide Web, the Web, online network, data highway, and other emerging terminologies aligned with the 'digital world'. In the current study, Internet usage pattern was measured by means of three questions posed in Section 1 (personal information) of this study's survey questionnaire in which respondents were asked to self-

report the amount of time they spent on the Internet at home, computer at home, and computer at school.

Self-esteem.

'Self-esteem' or self-worth originates from life experiences and interpersonal relationships. Rosenberg (1965) defined self-esteem as one's positive or negative attitude towards the self. It can also be defined as one's own evaluation of self-worth as a person. Self-esteem is partly acquired through environmental influences, varies between men and women, and sometimes increases with age, particularly from the adolescent stage to mid-adulthood. Differences in self-esteem between men and women are largely attributed to gender and age factors (Bleidorn et al., 2015). Socialization, among others, shapes one's personality and the skills that enhance self-esteem (Schwalbe & Staples, 1991). On the other hand, failures in life contribute negatively to self-esteem (Rosenberg, 1979, as cited in Pullman, Allik, & Realo, 2009). In the present study, self-esteem was measured by means of the Rosenberg Self-Esteem Scale developed by Morris Rosenberg in 1965.

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS OF ST. GABRIEL
LABORE ET CONSTANTIA VINCIT
OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

CHAPTER II

Literature Review

This chapter comprises relevant theoretical perspectives and empirical findings that provide the framework for the investigation of the relationship between Internet usage patterns, self-esteem, and computer self-efficacy as a function of gender among high school students in Bangkok. The review of literature covers the key variables of this study, namely: Internet usage patterns, self-esteem, computer self-efficacy, and gender, incorporating their definition, typology, and dimensions. The chapter also cites a number of related studies, mostly Western-based as Asian-based studies are few and far between. Nonetheless, the nature of these studies and their revelations provide an interesting backdrop to a broader understanding of the relationships among the key variables. Based on the review of literature, the conceptual framework, research questions, and research hypotheses were generated and presented towards the close of the chapter.

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS OF ST. GABRIEL
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

Internet Use

Advanced technology integration in educational systems has been regarded among the top priorities in policy making, budget planning, and curriculum development (Teo et al., 2011). It is recognized as one of the key drivers for the improvement of teaching and learning (Afshari et al., 2008, as cited in Teo et al., 2011), prompting governments to launch major initiatives and make considerable capital investments to build and maintain information communication technology infrastructures such as the Internet in the schools. In recent years,

the Internet (or cyberspace) has not only fostered rapid access to information, it also facilitated changes in the nature of today's education, allowing teaching and learning to take place within and beyond the traditional classroom environment (Teo et al., 2011). Many universities around the world are expanding their investment in information technology, particularly the Internet, and are actively promoting its use in university education. Instructors are being requested to make their teaching materials and other supporting resources accessible through the Internet, and students are encouraged to communicate with instructors or with one another via email or other online means.

Internet and social behavior.

The online domain has long been theorized to be a transformative context for youths' social development (McKenna & Bargh, 2000). Several features of communication on cyberspace such as enhanced opportunities for social connection and greater control over aspects of self-presentation have been hypothesized to facilitate youths' friendship formation and impression management online. Bargh, McKenna, and Fitzsimons (2002) suggested that facets of online communication might allow for specialized social control that are not typically found in traditional means of communication such as one's ability to revise and contemplate before verbalizing, as well as anonymity and lack of social cues. This means that shy individuals feel that they are able to create more diverse relationships online than offline. Interestingly, the foregoing assumption that shyer individuals would be more likely to engage in online social activities than their more sociable counterparts might no longer be valid today because online social interactions are fast becoming a norm for both shy and outgoing users (Yao et al., 2014).

As a medium of communication, the Internet has provided an alternative to face-to-face interaction, particularly in ways that connect people from around the world to socialize and learn (Garrison, 2011). It is also increasingly proving to be a useful way to easily connect people from diverse cultural backgrounds and provide a wide range of learning resources. Internet resources are easily accessible; that is, one can immediately access information about most of the topics of interest. However, social resources young individuals are exposed to when they use the Internet may indicate negative and positive implications on their attitudes (Wang & Artero, 2005). It is important to know Internet use patterns and their implication to people's lives and behavior outcomes. If properly used, the Internet can serve as a medium for acceptable social interaction (Van Scoter, Ellis, & Railsback, 2001). It allows youths to socialize with their friends through the use of email, chat rooms, and instant messaging, increasing the development of communication and social skills. As users connect with places around the world and exchange mail with electronic pen pals, they are able to share different cultures and customs.

Internet and classroom use.

The use of the information superhighway in classrooms allows students to work together, encouraging the sharing of ideas and cooperative learning. Students that find conventional methods of learning difficult will frequently find learning via the Internet to be fun. From this positive experience, students improve their attitudes about learning while enhancing their curiosity and self-concept. Many parents whose children use the technology in school believe that it has improved their child's overall attitude towards school. According to the National School Boards Foundation, education is the single most common motivation parents cite for their children to use the Internet from home (NSBF, 2000). The same report

stated that "both school and home are important points of Internet access for children and that by the time they are teenagers, nearly three out of four children are online" (p.1).

As indicated in the following quote, the Internet allows children to participate and interact in an independent learning context. As a result, it has become a daily experience.

> "When kids are online, they're reading, thinking, analyzing, criticizing and authenticating, and composing their thoughts. Students use computers for activities that go hand-in-hand with our understanding of what constitutes a traditional childhood. They use the technology to play, learn, communicate, and form relationships as children always have. Development is enhanced in an interactive world. The Internet has become a daily part of many children's lives" (Tapscott, 2008, as cited in Baule & Lewis, 2012, p. 56).

It is little wonder that the technology has such a pervasive effect on children's social development. The growth of the Internet over the last ten years has led to enormous social change. It has led to unprecedented access to information, provided innovative communications technology in the form of email, chat rooms, and instant messaging, and has transformed the social behaviors of millions of online users. Despite being touted as a revolutionary social medium, an alarming 1998 study by the HomeNet Project at Carnegie Mellon University showed a disturbing link between Internet usage and social isolation. While further studies have muddied this link, some have confirmed this trend in younger users, while others have indicated problems of World Wide Web dependencies and the promotion of deviant behavior.

The Internet is a fascinating tool that can be used to learn more about our world and everything in it. It provides stories, movies, entertainment, news, and more. However, it also has the power to rob individuals of their time, their families, and the quality of their lives. Commonly known as "Internet addiction", compulsive Internet surfing has a growing

presence in American and other cultures. According to McKenna and Bargh (2000), since compulsion is a strong, seemingly uncontrollable urge to engage in a behavior, the effects of compulsive Internet use on youngsters can be seen to vary as a function of the motivation and type of Internet usage. Researchers such as Gross (2004) disagree with the early research assumptions about the negative effects of adolescent Internet use. Gross reports that most teenage Internet users are more likely to communicate with existing friends than with strangers. Supportive relationships with friends can positively contribute to adolescents' sense of well-being, self-esteem, connectedness, and ability to cope with stress. In a national survey, nearly 50% of teenagers reported that the Internet has improved their relationships with their existing friends (Lenhart & Lewis, 2001). Unfortunately, studies on the association between adolescents' Internet use and family relationships are limited.

Some positive association between poor family relationships and excessive/ problematic use of the Internet or Internet addiction had been supported by empirical findings. Youths who experience high levels of conflict with their parents are at risk for some negative outcomes in Internet use. For example, participants who reported poor emotional bonds with caregivers were more likely to view pornography online (Ybarra & Mitchell, 2005). Adolescents who do not have open communication about their usage with their parents are more likely to be involved in risky online behaviors such as having a face-to-face meeting with a stranger who they encountered online (Liau et al., 2005).

Theory of Internet use.

The Internet is a form of media technology that has, in recent years, gained increase in use. The rapid increase in the use of online technology and the implied necessity indicate the increasing value users attribute to its use. This suggests that it is used because it meets

different needs for different individuals. Therefore, the 'uses and gratification theory' can be applied to understand the relationship between gender and Web usage patterns. *Uses and gratification theory* (UGT) is a psychological theory developed by Jay Blumler and Elihu Katz in 1974. The theory basically examines how individuals use mass media. It is based on the assumption that individuals select their media and content in order to fulfill their needs and wants. These needs are expressed as motives behind choosing a particular media. These needs are also about the social and psychological makeup of an individual (Papacharissi, 2008).

UGT is also called "needs and gratification theory". It focuses on what people do with media rather than what media does to people. The theory was based on the functionalist paradigm of social sciences. Early studies that made use of the theory, such as that by Blumler and Katz (1974), focused on the social and psychological needs of media users. The theory assumes that it is people's needs that influence the way people use media. Different needs are also associated with different individual personalities, stages of maturation, backgrounds, and roles (Chandler, 1994). UGT assumes that motives make people use media. In turn, obtained gratification reinforces the use of media. The core of this theory is that different circumstances and psychological needs create social facts that shape media use behavior (Lee, 2010). This means that World Wide Web users are aware of their needs, which they seek to gratify when they use online technology. These needs vary depending on the psychological, social, and individualistic characteristics.

Earlier studies linking uses and gratification studies and the Internet indicate that online service was adopted because of people's motives to fulfill certain cognitive and affective needs (Lin, 1999). Internet-based motives such as convenience, interpersonal utility, information seeking, and social and psychological antecedents including social presence

influence Internet use (Papacharissi & Rubin, 2000). Additionally, to keep one informed and to communicate were major motives for online networking use (Charney & Greenberg, 2001). These studies suggest that Internet use is related to interpersonal contexts such as social contact, inclusion, or psychological needs such as affection (Lee, 2010).

Several studies utilized the uses and gratification theory or UGT. For example, Blumler and Katz (1974) argued that users of mass media have social and psychological needs within them which propel the expectations of what they choose to watch in media (Chandler, 1994). The concept of needs which is the bedrock of UGT is purely rooted in psychology. Psychological needs such as self-actualization and cognitive and aesthetic needs are inherent in human experience, and are influenced by culture not only in how they are formed but also in how they are gratified. In this context, the theory aids the understanding of why and how individuals use media (Ruggiero, 2000). By the same token, Huang and Leung (2012) examined gratification opportunities, self-esteem, and loneliness in determining usage preference of bulletin board systems and blogs. A total of 301 teenagers were recruited through convenience sampling. The results revealed that those who scored low in self-esteem tended to be heavy bloggers while loneliness had no effect on the preference and level of use. Papacharissi and Rubin (2000) investigated the predictors of Internet use. The study attempted to answer the question: How do Internet antecedents, perceptions, and motives predict behavioral and attitudinal outcomes of Internet use? The sample consisted of 279 college students. The results revealed that entertainment, passing time, and convenience were the strongest motives for Internet use; that Web usage for interpersonal utility and information-seeking rated low; and that unwillingness to communicate and information-seeking were positive predictors of Internet satisfaction. In a similar vein, Huang, Yang, and Chen (2015)

studied motivations and gratifications in online games. The study focused on self-esteem, self-concept, relationships among players, and interpersonal relationships. Respondents were young people aged 11 to 18 years. The results revealed that individuals will continue to have greater motivation to use the Web if their first need for which they sought to gratify online is met; that males have greater need for friendship than females; and that recreational motivation, recreational gratification, peer relationships, and caring are predictors of adolescent Internet usage intensity.

The strength of the UGT is that it can be applied to a variety of media contexts despite media diversity. The common feature of the theory is that it tends to share a common frame of analysis that focuses on motives, social and psychological antecedents, and cognitive attitudinal behavioral outcomes. In addition, UGT has a flexible theoretical model linking motives and individual dispositions to patterns use as well as cognitive and attitudinal behavior effects (Papacharissi, 2008).

Within the same context as the above-cited studies, the current investigation made use of the UGT while focusing on Internet use. Given that the purpose of this study was to examine the relationship between gender, computer self-efficacy, self-esteem, and Internet usage patterns among high school students, the theory was deemed relevant in the sense that it assumes that different circumstances and psychological needs create social facts that shape media use behavior. The current study strived to answer the following questions: Are there significant relationships between gender, self-esteem, computer self-efficacy, and students' Internet usage patterns? Are there gender differences in self-esteem, computer self-efficacy, and Internet usage patterns? This study also tested the hypothesis that female students are more likely to use the Internet for academic purposes than male students.

Internet Use and Gender

Gender difference in Internet use for non-educational purposes.

Given that the uses and gratifications theory on which the current study is anchored assumes that people tend to use the World Wide Web to meet their needs, understanding the factors that influence its use is important for this study because: (1) it provides the general understanding of gender-related factors that influence usage; and (2) inasmuch as students involved in this study use the Web in school and at home, knowing what influences its usage for non-educational purposes impinges on the understanding of Internet usage behavior. While a number of studies on Internet use are spread across countries, the factors that remain largely untested are individual factors such as gender, age, experience, intellectual capacity, and cultural background, according to Ramón-Jerónimo et al. (2013). A cross-cultural study on gender and the use of the Web at home demonstrated that men dominated its use in China and India whereas in Australia and the US, there were no significant gender differences. Furthermore, high level of Internet use among women in Australia was attributed to the fact that the women were farmers who used the information superhighway as a tool to find information or to communicate whereas the men used cyberspace as a technology (Singh, 2001). In a study on Internet use and household division of labor, women were found to be constrained by domestic responsibilities. As a result, their online abilities and patterns were constrained by domestic allocation of labor more than men (Schwanen, Kwan, & Ren, 2014). Another study established that even though both men and women may use cyberspace technology, their perception towards the Web differs (Ramón-Jerónimo et al., 2013).

More studies that demonstrate gender difference in Internet use for non-educational purposes are cited here. For example, a study investigating age, gender patterns, and online pornography among adolescents indicated that for girls, the likelihood of using and discussing online pornography with mixed gender peer settings increases with age. For older girls, romantic relationship was an important feature in these settings whereas for boys, their reason for using online pornography was to get sexually aroused (Ševčíková & Daneback, 2014). This indicates that both boys and girls use the Internet to gratify socio-psychological desires. Chiao, Yi, and Ksobiech (2014) examined the relationship between Internet use, alcohol use, and smoking and found that for female adolescents, using the Web in cyber cafes is associated with higher levels of drinking. This outcome demonstrates that Internet usage is also related to emulative learning of social norms such as drinking in which individuals learn about their environment and use this to achieve their own goals.

A study of gender differences in moral judgment and behavior among Israeli adolescents showed that boys were largely found to be involved in negative behaviors such us impersonating, cyberbullying, plagiarizing, and illegally downloading movies from the Web. In the World Wide Web environment, it had been demonstrated that girls appear to make more humane judgments than boys (Bauhik & Deshen, 2014); in some cases, women tend to use social networks more than men (Perloff, 2014); and in other cases, sociocultural norms limit females' Internet usage in social networking sites. This is attributed to culturally gendered perspectives that influence Internet users (Davidson & Elena, 2013). A study examining genetic and environmental sources of influences on adolescents' problematic use of the Internet demonstrated that boys' problematic use is influenced more by genetic factors compared to their female counterparts (Li, Chen, Li, & Li, 2014). In a similar study conducted

among adolescents in Iran, Ahmadi (2013) reported that boys whose parents hold doctorate degrees were more likely to have Internet addiction compared to girls. Furthermore, significant relationship with Internet addiction was also registered in cases where the adolescents' mothers were job-engaged.

It is in the use of the Internet for leisure purposes that differences between boys and girls are most striking. The team of Valentine, Marsh, Pattie, and BMRB (2005) found that boys were more intensive users of cyberspace at home for leisure, and this gendered pattern of use was established at an early stage. Kent and Facer (2004) found that 46% of boys compared to 35% of girls reported using the computer for fun every day. The authors also found that more boys than girls reported liking 'digital activities' outside school (i.e., 82% of boys and 58% of girls). These differences, however, should not mask the fact that girls, too, spend a significant amount of time using the Web for leisure purposes, particularly for online social networking (Ofcom, 2008). Other uses girls tend to favor include writing, developing artwork, cropping and editing photographs, creating music, and producing invitations, booklets, and diaries (Valentine et al., 2005).

Gender difference in Internet use for educational purposes.

This section examines the relationship between gender and Internet use for educational purposes. The relevance of this section to the current study includes the case in point that (1) this study is about high school students who use the World Wide Web for academic purposes, among other reasons, and (2) Internet usage in light of the uses and gratifications theory reflects the human intent in students to gratify their needs.

A number of studies attempted to examine gender differences in Internet use for educational purposes. For example, McQuillan and O'Neill (2009) pointed out that the increase in Internet access and use at home and at school is increasingly closing the gender gap in Internet use. This is important in understanding the changes in gender dynamics in Internet use, which comes along generational change. While boys have better access to hardware and spend more time using computers outside school for leisure purposes, girls are considerably more likely to use computers for school work than boys (i.e., 50% of girls compared to 15% of boys), according to Valentine et al. (2005). This is mainly true of subjects girls enjoy such as English, history, and science. The only subject in which boys are more likely than girls to use a home computer for school work is Internet, a subject boys tend to enjoy more. This suggests that Internet use is more influenced by attitude towards the subject than attitude towards the Internet itself. On the other hand, girls are significantly more likely than boys to say that they use the Internet for school work (Ofcom, 2008). That girls use the Internet for educational purposes to a greater degree than boys may be widening the gender achievement gap, as research has also shown that high level of leisure use of Internet may be positively associated with a negative impact on educational attainment (Valentine et al., 2005). The same study also reported that for both boys and girls, home use of the Web for educational purposes is demonstrated by its use in the school. As research has shown that girls learn more about the Web at school than boys do, the importance of the school's role in enabling girls to make the best use of the Internet should not be underestimated (Hayward et al., 2003). A study of epistemological beliefs about gender and Internet use in Turkey showed that community college students believe that achievement in education is based on ability, and that men have more ability than women in Internet usage (Ahmet, 2014). A study on addictive

Internet use among Korean adolescents indicated that female students in girls' schools are more likely to use the Web addictively than those in coeducational schools. This may be partly attributed to contextual influences (Heo, Juhwan, Subramanian, Kim, & Kawach, 2014). Stoilescu and Egodawatte (2010) observed that since girls and boys are cultured differently, they tend to operate in class typically in the same way they have been cultured in society. This has implications on their use of computers at school; for example, while boys and girls tend not to differ in the use of computers, boys more than girls tend to be involved in computing activities which are largely seen as a male arena. The study reflects a gendered view that influences the use of computers, particularly in activities seen to be the domain of boys and men.

Internet Use and Self-Esteem

Internet use, self-esteem, and gender.

Self-esteem or self-worth originates from life experiences and interpersonal relationships. Failures in life contribute negatively to self-esteem (Rosenberg, 1979, as cited in Pullmann et al., 2009). People want to relate to others and, because of that, they tend to evaluate themselves based on the way they see themselves rejected or accepted by others. Therefore, people's feelings about themselves are rooted in environmental factors such as socialization, culture, and life experience (Pullmann et al., 2009). The study resonates with the uses and gratifications theory (UGT) in the sense that it shows that human beings have needs or feelings that drive them to be related to others. In this case, Internet use becomes the medium through which human needs are gratified. Increase in Internet use is partly attributed

to people's tendency to address depressed moods. In this case, an individual's Internet usage behavior evolves from normal impulsive use to extreme pathological use (LaRose, Lin, & Eastin, 2003). The study suggests that inherent or environmentally-based needs a person experiences lead to cyberspace use which, if continued, becomes addictive. The study's objective is related to the UGT in the sense that it emphasizes human aspects that influence people's use of Web technology.

There have been several attempts to investigate the relationship between self-esteem and Internet use. For example, Koronczai et al. (2013) studied the mediating effect of self-esteem, depression, and anxiety between satisfaction with body appearance and problematic Web use. The results revealed that dissatisfaction with bodily appearance has negative significant relationship with problematic usage. It was also found that dissatisfaction with bodily appearance has a positive direct effect on self-esteem but has a negative effect on anxiety, and that neither self-esteem nor anxiety has direct significant effect on problematic Web use. Yao et al. (2014) investigated the influence of personality, parental behaviors, and self-esteem on Internet addiction. The study found that the influence of parental behaviors has a significant relationship with Internet addiction. Mother's rejection tended to increase the risk of addiction while the father's rejection and overprotection increased the risk of Internet rejection. The study also demonstrated that self-esteem mediated the relationship between children's emotional relationship with parents and Internet use. Parental behaviors with influence on Web usage affected female and male children differently. The study supports empirical justification of the users and gratification theory in that human beings have psychological and social needs which they seek to gratify when they choose to use the Internet. Shaw and Gant (2002) posited that while males like to use the Internet for seeking

information and leisure, women like to use it for communication. However, the study did not find significant gender difference in self-esteem among the users. Similarly, a study on whether the use of technology is related to self-esteem did not show gender difference in self-esteem and Internet use, even though it indicated that there is a negative relationship between video games and self-esteem (Jackson et al., 2010). In another study, boys reported higher self-esteem in the use of the Internet in online activities such as use of email and online games compared to girls (Johnson, 2011). The results of this study differ from those of Shaw and Gant (2002) who reported higher use of Internet for communication among females than males. The latter study, however, did not find significant gender difference in self-esteem.

Internet Use and Computer Self-Efficacy

Internet use, computer self-efficacy, and gender.

This section covers related literature on the relationships among gender, computer self-efficacy, and Internet use. This subject matter is important to this study because (1) as indicated earlier, computer self-efficacy refers to a person's judgment of one's capability to use the computer or the World Wide Web (Compeau & Higgins, 1995, as cited in Khorrami-Arani, 2001). If there is a difference in the way males and females view their own capability to use the Web, this implies that gender is a factor in determining Internet usage; and (2) the theoretical underpinnings of the study is the uses and gratifications theory which assumes that individuals select their media and content in order to fulfill their needs and wants. The theory further proposes that these needs are also about the social and psychological makeup of an individual (Papacharissi, 2008). If there is gender difference in computer self-efficacy and

Internet use, then that would imply that males and females as distinctive groups exhibit differences in their own self-judgment regarding Internet use. Furthermore, it indicates specific self-efficacy characteristics upon which gender difference is identified.

Computer self-efficacy and computer use research suggested two points of view. The first view is that women or men have higher self-efficacy than the other. This means that gender is a factor in self-efficacy outcomes. The second point of view is that this is not necessarily so; rather, it depends on the Internet or computer issue one studies, which implies that the diverse ways in which women and men are exposed to the Internet and its use contribute to self-efficacy outcomes (Compeau & Higgins, 1995, as cited in Khorrami-Arani, 2001). The second view implies that since males and females are socialized differently and occupy different social positions in society, then it is likely that their access to cyberspace or computers and confidence levels would differ, depending on the subject area. The difference seen in gender, computer self-efficacy, and Internet use reflects the traditional gender dynamics and how they influence people's view or interaction with the Internet.

Past research that explored the interrelationships among Internet use, computer self-efficacy, and gender are cited in this section. For example, Tella, Tella, Ayeni, and Omoba (2007) examined the relationship between computer self-efficacy and academic performance and found that students with high computer self-efficacy reported high academic performance. The students reported that they made good use of electronic information in their studies, implying that self-efficacy with computer use influences the ability to obtain and utilize electronic information for academic purposes. The students also self-reported higher access to electronic sources of information such as the World Wide Web, suggesting that when students have greater access to the Internet along with higher level of understanding about the

technology, they can improve their academic performance. Tsai and Tsai (2010) examined computer self-efficacy among junior high school students in Hong Kong in terms of their online explorative self-efficacy and online communication self-efficacy. The results revealed that no gender difference exists in online explorative self-efficacy. However, girls had higher online communicative self-efficacy than boys and, on the other hand, boys reported higher level of Internet use than girls. The study also showed that girls and boys used the Internet for different purposes, despite variation in online communicative self-efficacy. This finding somehow resonates with that of Khorrami-Arani (2001), particularly on the proposition that gender influences different ways or purposes for which males and females use the Web. The former study also implies that gender difference or lack of it in Internet use is much about access, particularly when considering age and socioeconomic factors which make a difference in terms of access to the technology. Hsiao et al. (2012) examined the function of social support and computer self-efficacy in predicting computer use among high school students. The results of the study showed that family support had significant impact on students' computer self-efficacy, but that peer support had higher significant impact than family support. This implies that apart from gender as indicated in previous studies, other factors such as family and peer support also contribute to self-efficacy outcomes in Internet use.

In a similar vein, Zhao, Lu, Huang, and Wang (2010) examined the relationship between Internet equality and self-efficacy in computer usage. The results of the study revealed that students who used Internet at home and at school reported higher levels of computer self-efficacy, suggesting that access to the computer contributes to self-efficacy in its use, along with frequency of use. Tella (2008) studied the computer self-efficacy of mathematics teachers and its influence on teaching. The results indicated that there was no

gender difference in teachers' computer self-efficacy, and that computer self-efficacy was influenced by the routine use of Internet due to age. As in the case of Zhao et al.'s (2010) study, the latter study, likewise, showed that other factors other than gender can influence computer self-efficacy. Tsai and Wu (2006) investigated the attitudes and self-efficacy of students towards the Internet. The results indicated that students have high self-efficacy and positive attitudes towards the Internet. Students perceive the technology as a means of realizing their technological needs and as a way of gratifying their needs for pleasure. These students were found to have higher self-efficacy than those who merely view it as a means to achieve other goals such as work. The latter study supports that of Tsai and Tsai (2010) in that the purpose for which Internet is used contributes to self-efficacy. Cheong (2008) reported that males have higher self-efficacy than females when asked about their understanding of Internet words, hardware, and software as well as Internet problems such as trouble shooting. These results imply that higher levels of self-efficacy reported by males reflect either their expertise or level of experience in Internet. This resonates with the finding of Wang, Hsu, Campbell, Coster, and Longhurst (2014) that prior experience, more access, and frequent use of the information superhighway contributes to self-efficacy with the technology. Students' ethical considerations when making sense of Internet use can also influence their Internet and/or computer self-efficacy. This was demonstrated in a study of Internet psychotherapy by Finn (2002) which showed that students who believe ethical standards would be met online also reported higher self-efficacy.

Interrelationships Among the Key Variables

As mentioned earlier, the current study's theoretical framework was based on the uses and gratifications theory introduced by Blumler and Katz (1974). The theory assumes that human beings have needs or feelings that drive them to be related to others. In this case, Internet use becomes the medium through which human needs are gratified. However, differences in Internet use tend to be related to different factors.

One of the factors linked to Internet use is gender. There have a number of studies that explored gender differences in Internet use. For example, gender difference in Web usage at home largely depends on where one comes from and varies from one context to another. Schwanen et al. (2014) demonstrated that in households that follow traditional household division of labor, women have limited use of the Internet at home. In cases where both males and females use the technology at home, their views on it differ, according to Ramón-Jerónimo et al. (2013). This is partly because sociocultural norms limit female Internet usage on social networks (Davison & Elena, 2013). The belief that men have more ability than women in Web usage influences gender difference in its use (Ahmet, 2014). Male students tend to use the Web more for leisure while their female counterparts tend to use it more for homework. The way they use the technology at home reflects the way they use it at school (Valentine et al., 2005). Boys and girls tend to replicate gendered norms in the use of computers and Internet in class (Stoilescu & Egodawatte, 2010). According to Ševčíková and Daneback (2014), adolescent boys and girls use the Internet to gratify sociopsychological desires; that is, sexual arousal and romance, respectively. While using the Internet, boys tend to show risk behavior while girls tend to show responsibility and care (Bauhik & Deshen,

2014). Internet usage is also related to emulative learning of social norms such as drinking (Chiao et al., 2014).

Another factor linked to Internet use is self-esteem. This overall sense of self-worth or personal value originates from human experience and relationships (Rosenberg, 1979, as cited in Pullmann et al., 2009). It had been demonstrated that depressed moods can lead to increase in Internet use. If continued, it can be addictive (LaRose et al., 2003). On the other hand, some self-esteem factors such as dissatisfaction with one's body may not necessarily contribute to problematic Internet use (Koronczai et al., 2013). On a related note, low self-esteem as a result of maternal rejection was found to contribute towards problematic Internet use (Yao et al., 2014). One study found that gender differences in self-esteem and Internet use are related to dominant preferences between males and females (Shaw & Gant, 2002) as well as exposure to the type of online activity (Jackson et al., 2010).

Computer self-efficacy is another factor that had also been linked to both Internet use and gender. For example, it had been demonstrated that students with greater access to the World Wide Web have greater understanding of it and are likely to report higher performance in the use of the technology (Tella et al., 2007). Similar results were reported by Khorrami-Arani (2001) who found that males and females manifest different levels of self-efficacy in Internet use, and that this difference depends on the subject area or purpose for which the technology is routinely used (Tsai & Tsai, 2010). Apart from access, frequency of Internet use also contributes to computer self-efficacy and Internet use (Zhao et al., 2010). There are gender differences in self-efficacy especially when issues such as experience and expertise are taken into account (Cheong, 2008). One study showed that age and routine use of Internet influence self-efficacy outcomes but not gender (Tella et al., 2010). Prior experience with the

Web also contributes to computer self-efficacy (Wang et al., 2014). Besides access, experience and expertise, family and peer support also contribute to self-efficacy outcomes in Internet use (Hsiao et. al., 2012). People's perceptions about the ethical standards of the Internet system have an impact on self-efficacy as well (Finn, 2002). Self-esteem and self-efficacy are also related to the attitude towards the use of social networking sites (Gangadharbatla, 2008).

Chapter summary.

This section covers the review of the literature citing theoretical and empirical perspectives on which the conceptual framework of the study is based. In the literature review, major conceptual factors regarding students' and other individuals' attitude towards the Internet and its usage patterns were identified and analyzed. The cited literature also showed that dependence on the Internet is still on the increase but with inconclusive evidence on the factors that impact on its usage patterns. Nonetheless, the phenomenal technology remains an important key to changes in social, cultural, and political values.

Many studies had demonstrated gender difference in Internet use, and that this difference can be gleaned from male and female students' usage of the technology (e.g., school subjects, entertainment, study purposes, relationship with parents and peers, etc.). A number of related studies have been accomplished in various regions and countries, suggesting possible variations in the outcomes. For example, some studies revealed that there is no gender difference in Internet use, especially when factors such as access or exposure to the Internet determine the outcome. On the other hand, gender difference in Internet use had been demonstrated repeatedly. Thus, the issue remains inconclusive. The current study investigated the influence of gender, self-Esteem, and computer self-efficacy on the Internet

Usage Patterns of High School Students in Bangkok. Being an international high school, the designated institution provided a context wherein adolescent respondents are presumed to come from relatively similar socioeconomic backgrounds, particularly in terms of access and exposure to the Internet. In light of the uses and gratifications theory being this study's theoretical framework, it was assumed that the male and female participants of similar socioeconomic status and access to the technology share similar needs that are being met by Internet usage.

The Current Investigation

Conceptual framework.

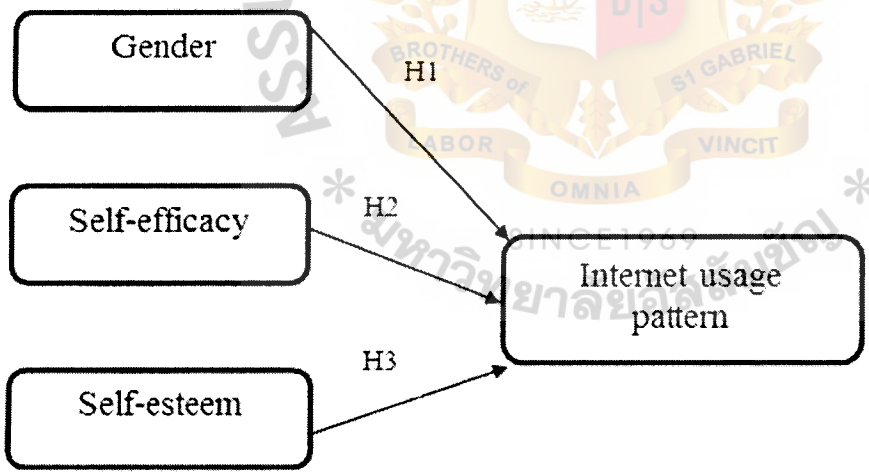


Figure 1. The conceptual framework of the current study.

A thorough review of the literature revealed that certain psychosocial and demographic factors can influence Internet usage patterns within the high school context. From these studies, the following variables were derived to help explain Internet usage. In the current investigation, the identified predictor variables consisted of self-esteem, computer self-efficacy, and gender, whereas the criterion variable is Internet usage. As gleaned from the conceptual framework (Figure 1), this study aimed to examine the influence of gender, self-esteem, and computer self-efficacy on the Internet usage patterns of high school students in Bangkok.

Research Questions

Based on a thorough review of the literature and the conceptual framework of the study, the research questions are presented as follows:

1. Are there gender differences in the students' self-reported levels of self-esteem, computer self-efficacy, and Internet usage pattern?
2. Are there significant predictive relationships between the students' self-reported levels of self-esteem and computer self-efficacy with their Internet usage pattern, as a function of their gender?

Research Hypotheses

The conceptual framework allows the study to hypothesize the following in an attempt to address the research questions posed.

H_1: There are gender differences in the students' self-reported levels of self-esteem, computer self-efficacy, and Internet usage pattern.

H_2: The predictive relationships between the students' self-reported levels of self-esteem and computer self-efficacy with their Internet usage pattern will vary as a function of their gender

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS OF ST GABRIEL
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

CHAPTER III

Methodology

As gleaned from the conceptual framework (Figure 1), this study aimed to examine the influence of gender, self-esteem, and computer self-efficacy on the Internet usage patterns of high school students in Bangkok. This chapter describes in detail the research methodology applied in the conduct of this study. The focal sections of the chapter are presented in the following order: (1) research design, (2) participants of the study, (3) research instrumentation, (4) data collection procedure, (5) data analysis, and (6) ethical considerations.

Research Design

To meet the objectives of this study, a survey was conducted in order to obtain statistical information about an issue that needed to be addressed. A survey is a good approach to studying a phenomenon (e.g., Internet usage patterns) by statistically analyzing how people think or feel about the particular issue of interest (Henn, Weinstein, & Foard, 2009). In the context of the current study, a survey questionnaire was deemed the appropriate design for studying psychosocial issues such as gender, self-esteem, and computer self-efficacy. Additionally, using a survey design involves minimal costs in order to obtain information about a large population from a select sample (Sirakaya-Turk, Uysal, Hammitt, & Vaske, 2011), and is especially useful as a cost-effective method for researchers faced with time and financial constraints.

Participants of the Study

Participant characteristics.

The participants consisted of 200 senior students from an international high school who have access to the Internet which they use both as a social and academic resource. Eligibility criteria for inclusion comprised the following terms: (1) senior high school student in Bangkok, (2) aged between 13 and 19 years, (3) has access to the Internet at home and at school, (4) able to read and write in English, and (5) willing to participate in the study.

Sampling procedure.

Simple random sampling technique was used to obtain the sample. Following Sarantakos' (2005) social research methods, the current researcher obtained a list of names of the targeted population from the school administrators. The list was arranged in alphabetical order and the names were numbered. The researcher cut small pieces of paper and wrote numbers on each piece. The pieces were folded, mixed, and put in a jar. The first piece to be picked out of the jar after mixing was selected as a participant. As in a lottery, the process was repeated until all pieces required for the sample were obtained from the jar. The numbers were then checked against the list to determine who was selected for the study.

This study was conducted in one international high school in Bangkok, Thailand. The school is an urban international school with English as its medium of instruction, and with students from diverse racial backgrounds including Thai Indians, Koreans, Taiwanese, Chinese, Malaysians, and Filipinos.

Sample size.

The original plan was to involve all the senior high school students enrolled at the time; however, time and financial constraints made it difficult for this researcher to pursue this line of approach. In consultation with faculty members, it was decided that a sample of 200 students from a population of 250 would suffice to meet the objectives of the study.

Research Instrumentation

Internet usage patterns.

To measure internet usage patterns, students were asked in Section 1. Personal Information (PI) of the survey questionnaire to self-report the amount of time (in hours) they spend on the computer at home, on the Internet at home, and on the computer at school. Amount of time was measured according to the following scale: 1 = *0 hours per week*; 2 = *1–4 hours per week*; 3 = *5–10 hours per week*; and 4 = *more than 10 hours per week*.

Rosenberg Self-Esteem Scale.

The *Rosenberg Self-Esteem Scale* (RSES) is a widely used self-report instrument for evaluating individual self-esteem, developed by Morris Rosenberg in 1965. The RSES had been utilized to measure self-esteem in relation to Internet usage behavior in a number of previous studies including Papacharissi and Rubin (2000), Pullmann et al. (2009), Yao et al. (2014); and Koronczai et al. (2013).

The RSES is a 10-item unidimensional scale in which all items are answered using a 4-point Likert scale format ranging from SA = *strongly agree*, A = *agree*, D = *disagree*, to SD =

strongly disagree. With regard to the scoring system: SA = 3, A = 2, D = 1, and SD = 0. Items 2, 5, 6, 8, and 9 are reverse-scored; that is, SA = 0, A = 1, D = 2, and SD = 3. Sum the scores for the 10 items. Higher scores indicate higher self-esteem.

Computer Attitude Questionnaire.

The *Computer Attitude Questionnaire* (CAQ) developed by Gerald Knezek and other researchers at the Texas Center for Educational Technology in 1997 was used to measure computer self-efficacy.

The CAQ is an 8-item scale in which all items are answered using a 4-point Likert scale format ranging from SA = *strongly agree*, A = *agree*, D = *disagree*, to SD = *strongly disagree*. With regard to the scoring system: SA = 3, A = 2, D = 1, and SD = 0. Items 2, 3, 5, 6, 7, and 8 are reverse-scored, that is, SA = 0, A = 1, D = 2, and SD = 3. Sum the scores for the 8 items. Higher scores indicate higher computer self-efficacy.

According to Embi (2007), computer self-efficacy suggests that an individual has confidence and ability to take action required in a given situation, using the computer. Higher levels of computer self-efficacy correspond with increased performance in computer courses (Khorrami-Arani, 2001). To measure computer self-efficacy means to measure how confident computer users are with their ability to understand, use, and apply computer knowledge and skills (Embi, 2007). Furthermore, individuals who have high computer self-efficacy will feel competent in using a variety of computer hardware and software.

Data Collection Procedure

This researcher personally sought permission from school authorities to conduct the research on its targeted students and on the school premises. Upon obtaining the permission,

the researcher, then, sought the consent of involved parents and students prior to the study. Subsequently, participants were given the questionnaires, and the researcher and research assistants went through the questionnaire with the participants, after explaining what the study was about. The researcher and research assistants answered questions and clarified issues raised by the participants. The participants, then, proceeded to fill in the self-report questionnaires, with the instruction to return the completed questionnaire to the researcher or assistant. Completed questionnaires were collected and individually inspected and, subsequently, only valid questionnaires were entered into the computer data system.

Data Analysis

After completion of the data collection process, the respondents' data were encoded, processed, and analyzed. Data analysis was accomplished through the following statistical treatments:

Descriptive statistics: Frequency and percentage distributions were used to analyze the respondents' demographic data. Means and standard deviations were utilized in the analysis of the respondents' scores. Reliability analysis was conducted on the self-esteem and computer self-efficacy scales for the purpose of maximizing the internal consistency of these two measures by identifying items that are internally consistent or reliable, and to discard those that are not.

Inferential statistics: GLM multivariate analysis of variance (MANOVA) was conducted to test for gender differences in the variables of self-esteem and computer self-

efficacy and the three Internet usage patterns of number of hours of computer use at home, number of hours spent on the Internet at home, and number of hours of computer use at school. In addition, to investigate the hypothesized regression model (Figure 1), multiple regression analysis was conducted for male and female participants separately in order to test the impact of male and female participants' levels of self-esteem and computer self-efficacy on the three Internet usage patterns. The analysis involved regressing the dependent variables of Internet usage patterns (computer use at home, Internet at home, and computer use at school) on the predictor variables of self-esteem and computer self-efficacy.

Ethical Considerations

In the current investigation, the following ethical considerations were applied: (1) verbal informed consent of both participant under the age of 18 years and their parent/s; (2) results of the study should be used for the good of society; (3) research should be conducted in ways that avoid all unnecessary physical or mental harm to the participants; (4) participants should be allowed to terminate their involvement at any time without penalty; (5) researchers should terminate the study if any ethical concerns arise (Henn et al., 2009); (6) privacy; (7) anonymity; (8) confidentiality (Sarantakos, 2005); (9) equity; and (10) honesty (Glatthorn & Joyner, 2005).

CHAPTER IV

Results

This chapter presents the results of the study. The following sections present the results of the analyses conducted to test the hypotheses generated from the regression model (Figure 1) presented in Chapter II. Information regarding the sample's demographic characteristics is also presented. The analyses conducted and the results obtained are presented in the following sequence:

1) Demographic profile of respondents.
2) Reliability test of items that represent the factors of self-esteem and computer self-efficacy.
3) GLM multivariate analysis of variance (MANOVA) to test for gender differences in the variables of self-esteem and computer self-efficacy.
4) Multiple regression analysis to test the hypothesized regression model (Figure 1).

Demographic Profile of Respondents

The sample consisted of 200 participants of whom 97 (48.5%) were males and 103 (51.5%) were females. In terms of the number of hours they use the computer at home, 63 participants (31.6%) reported that they spend between 1 to 4 hours per week, 85 participants (42.5%) reported that they spend between 5 to 10 hours per week, and 51 participants (25.5%)

reported that they spend more than 10 hours per week. In terms of the number of hours they spend on the Internet at home, 55 participants (27.5%) reported that they spend between 1 to 4 hours per week, 81 participants (40.5%) reported that they spend between 5 to 10 hours per week, and 63 participants (31.5%) reported that they spend more than 10 hours per week. In terms of the number of hours they use the computer at school, 55 participants (27.5%) reported that they spend between 1 to 4 hours per week, 80 participants (40.0%) reported that they spend between 5 to 10 hours per week, and 65 participants (32.5%) reported that they spend more than 10 hours per week. (See Appendix 1)

Reliability Analysis of Scales Employed

Reliability analysis was conducted on the self-esteem (RSES) and computer self-efficacy (CAQ) scales. The purpose of the reliability analysis was to maximize the internal consistency of these two measures by identifying those items that are internally consistent (i.e., reliable), and to discard those items that are not. The criteria employed for retaining items are: (1) any item with 'corrected item-total correlation' (I-T) $\geq .33$ will be retained ($.33^2$ represents approximately 10% of the variance of the total scale accounted for), and (2) deletion of an item will not lower the scale's Cronbach's alpha. Table 1 presents the items for the two scales together with their I-T coefficients and Cronbach's alphas. (See Appendix 2)

Table 1

Scale Items Together with Their Corrected Item-Total Correlations and Cronbach's Alphas

Self-esteem.

Item-Total Statistics

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
• On the whole, I am satisfied with myself. (s1)	.779	.822
• At times, I think I am no good at all. (s2)	.331	.872
• I feel that I have a number of good qualities. (s3)	.289	.877
• I am able to do things as well as most other people. (s4)	.834	.815
• I feel I do not have much to be proud of. (s5)	.304	.876
• I certainly feel useless at times. (s6)	.814	.817
• I feel that I'm a person of worth, at least on an equal plane with others. (s7)	.841	.814
• I wish I could have more respect for myself. (s8)	.725	.828

Cronbach's Alpha = 0.859

Computer self-efficacy.

Item-Total Statistics

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
• I feel comfortable working with a computer. (se1)	.254	.596
• I get a sinking feeling when I think of trying to use a computer. (se2)	.439	.546
• I think that it takes a long time to finish when I use a computer. (se3)	.328	.576
• Computers do not scare me at all. (se4)	.247	.601
• Working with a computer makes me nervous. (se5)	.308	.582
• Using a computer is very frustrating. (se6)	.186	.617
• I will do as little work with computers as possible. (se7)	.391	.558
• Computers are difficult to use. (se8)	.363	.566

Cronbach's Alpha = 0.613

The reliability analysis indicated that two items from the self-esteem scale (s9 and s10) returned very low corrected item-total correlations and that their deletion would increase the scale's overall Cronbach's alpha. These two items were deleted. Thus, as can be seen from the above Table 1, the factor of self-esteem is represented by 8 items, and the factor of computer self-efficacy is, similarly, represented by 8 items. The computed Cronbach's alpha coefficients for these two scales were .859 and .613, respectively. These two factors of self-esteem and computer self-efficacy were, then, computed by summing across the items that make up that factor and their means calculated.

The following Table 2 presents the means and standard deviations for the number of hours of computer use at home, the number of hours spent on the Internet at home, the number of hours of computer use at school, self-esteem, and computer self-efficacy as a function of gender. (See Appendix 3)

Table 2

Means and Standard Deviations for the Factors of Number of Hours of Computer Use at Home, Number of Hours Spent on the Internet at Home, Number of Hours of Computer Use at School, Self-Esteem, and Computer Self-Efficacy as a Function of Gender

	Male		Female		
	Mean	*SD*	Mean	*SD*	Mid-point
• Hours of computer use at home	2.82	.78	3.03	.75	
• Hours spent on Internet at home	3.11	.79	2.95	.77	
• Hours of computer use at school	2.97	.80	3.13	.75	
• Self-esteem	3.57	.35	3.59	.36	2.5
• Computer self-efficacy	3.66	.24	3.66	.24	2.5

As can be seen from Table 2, the female participants reported spending more time using the computer at home and at school than their male counterparts, whereas the male participants reported spending more time on the Internet at home than their female counterparts. Both male and female participants rated their levels of self-esteem and computer self-efficacy above their respective mid-points. Thus, overall, both male and female participants rated themselves high in both their levels of self-esteem and computer self-efficacy.

GLM Multivariate Analysis of Variance (MANOVA) to Test for Gender Differences

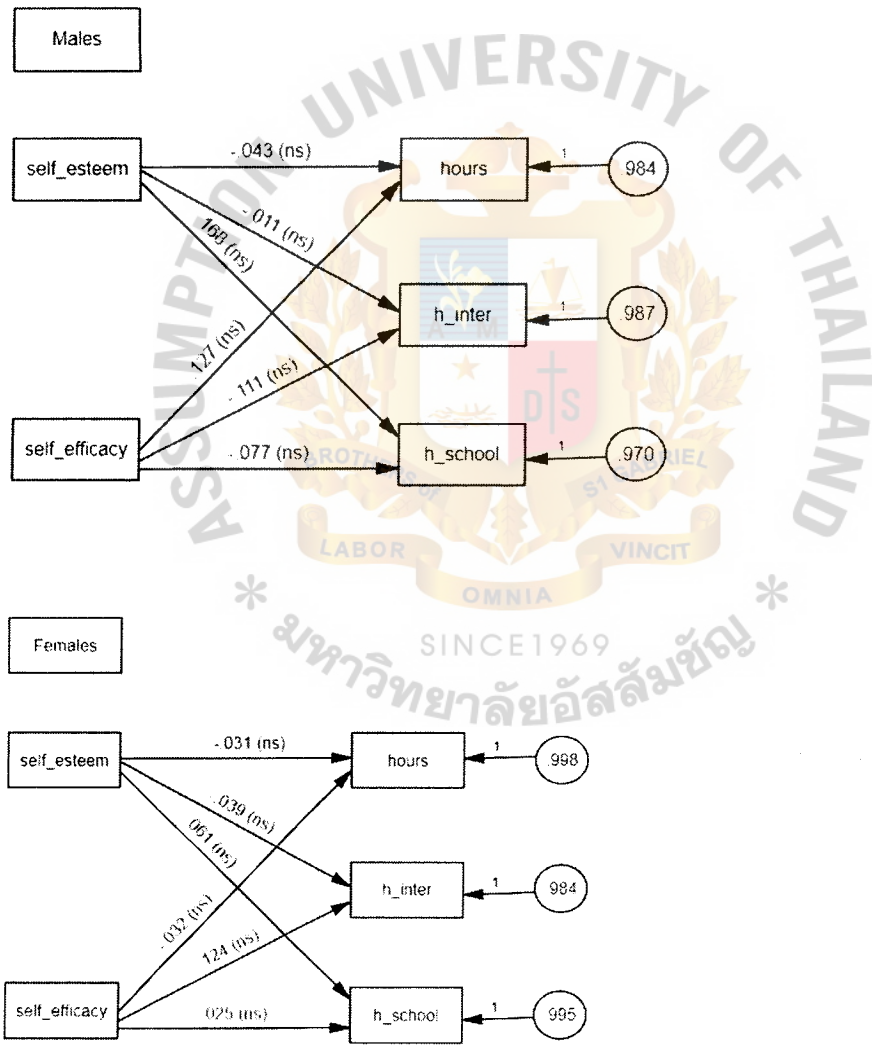
In order to investigate whether there are gender differences in the five variables (number of hours of computer use at home, number of hours spent on the Internet at home, number of hours of computer use at school, self-esteem, and computer self-efficacy), GLM multivariate analysis of variance (MANOVA) was conducted. (See Appendix 3)

The results showed that there was no overall gender effect for the five variables combined, $F(5,194) = 1.62$, $p > .05$. Follow-up tests of between-subjects effects showed that gender has no significant effect for any of the five dependent variables separately, $p > .05$.

Impact of Self-Esteem and Computer Self-Efficacy on Male and Female Participants' Internet Usage Pattern

In order to test the impact of the male and female participants' levels of self-esteem and computer self-efficacy on the number of hours of computer use at home, the number of hours spent on the Internet at home, and the number of hours of computer use at school (represented by the regression model depicted in Figure 1), multiple regression analysis was

conducted for the male and female participants, separately. The analysis involved regressing the dependent variables of number of hours of computer use at home, number of hours spent on the Internet at home, and number of hours of computer use at school on the predictor variables of self-esteem and computer self-efficacy. The results of the analysis are presented in Figure 2. *Regression model of the male and female participants*



(ns = non-significant)

Figure 2. Regression model of the male and female participants' Internet usage pattern as a function of their levels of self-esteem and computer self-efficacy.

The results showed that for both the male and female participants, their reported levels of self-esteem and computer self-efficacy were not significantly related to their Internet usage pattern (number of hours of computer use at home, number of hours spent on the Internet at home, and number of hours of computer use at school.) Thus, both the male and female participants' levels of self-esteem and computer self-efficacy appeared to have exerted no significant impact on their Internet usage pattern. (see Appendix 4)

Figure 2 also reports the standardized residual for each dependent variable for the regression model. These coefficients provide an estimate of the proportion of variance in each dependent variable not predicted by the model. Alternatively, subtracting these values from 1.00 indicates the proportion of variance predicted by the model. These coefficients indicated that for the male participants, the regression model accounted for 1.6% of the variance in the number of hours of computer use at home, 1.3% of the variance in the number of hours spent on the Internet at home, and 3% of the variance in the number of hours of computer use at school. For the female participants, the regression model accounted for 0.2% of the variance in the number of hours of computer use at home, 1.6% of the variance in the number of hours spent on the Internet at home, and 0.5% of the variance in the number of hours of computer use at school.

Summary of Findings

The chapter presents the results of analysis of the relationship between gender, self-esteem, computer self-efficacy, and students' Internet usage patterns. The results indicated that: (1) female participants reported spending more time using the computer at home and at

school than their male counterparts, whereas the male participants reported spending more time on the Internet at home than their female counterparts; (2) both the male and female participants rated high their levels of self-esteem and computer self-efficacy; (3) gender has no significant effect on Internet usage patterns; and (4) both male and female participants' levels of self-esteem and computer self-efficacy did not indicate a significant impact on their Internet usage patterns.

CHAPTER V

Discussion

Overview of the Current Investigation

The current study attempted to examine the influence of gender, self-esteem, and computer self-efficacy on the Internet usage patterns of high school students in Bangkok. Participants consisted of 200 senior students recruited through simple random sampling technique from an international high school in Bangkok, aged between 13 and 19 years who have access to the Internet for social and academic purposes. A survey questionnaire incorporating items on demographic characteristics and Internet usage patterns, the Rosenberg Self-Esteem Scale to measure self-esteem, and the Computer Attitude Questionnaire to measure computer self-efficacy was utilized for data gathering and analysis.

The results of data analysis revealed the following findings: (1) female participants reported spending more time using the computer at home and at school than their male counterparts, whereas the male participants reported spending more time on the Internet at home than their female counterparts; (2) both the male and female participants rated high their levels of self-esteem and computer self-efficacy; (3) gender has no significant effect on Internet usage patterns; and (4) both male and female participants' levels of self-esteem and computer self-efficacy did not indicate a significant impact on their Internet usage patterns.

The final chapter presents the concluding sections of this study, namely: (1) discussion of findings, (2) conclusion, (3) limitations of the study, and (4) recommendations incorporating avenues for further research and implications for practice.

Discussion of Findings

Gender difference in Internet usage.

The results indicated that the female participants reported spending more time using the computer at home and at school than their male counterparts, whereas the male participants reported spending more time on the Internet than their female counterparts. The findings did not support the assumption that female students are likely to use the Internet more than male students. MANOVA conducted in this study showed that there was no overall gender effect for all variables of this study, namely: Internet usage patterns (i.e., number of hours of computer use at home, number of hours spent on the Internet at home, number of hours of computer use at school), self-esteem, and computer self-efficacy, F (5,194) =1.62, p>.05. Follow-up tests of between-subjects effects showed that gender has no significant effect for any of the five dependent variables separately, p>.05.

This outcome is not consistent with some related studies such as that by Valentine et al. (2005) which established that males and females largely use the Internet for different purposes. The latter study also demonstrated that boys, more than girls, use the technology intensively for leisure or fun, whereas girls use the Web for educational purposes to a greater degree than boys. According to a number of related studies (e.g., Ahmet, 2014; Heo et al., 2014; Li et al., 2014), gender differences in Internet usage is related to sociocultural factors

that provide Internet or computer access, and other environmental conditions that shape the ability of male and female students to use cyberspace (e.g., socialization, sociocultural beliefs, etc.). Interestingly, in support of the results of the current study, McQuillan and O'Neill (2009) pointed out that the increase in Internet access and use at home and at school is increasingly closing the gender gap in Internet use. In a similar vein, Stoilescu and Egodawatte (2010) observed that boys and girls tend not to differ in the use of computers. The lack of significant difference between male and female students' Internet usage patterns may be a reflection of recent changes in beliefs about the technology as well as changes in patterns of socialization. It may also be because, in the context of this study, Internet usage is not strongly associated with a particular gender, compared to other socio-cultural contexts. The foregoing findings, however, do not explain why no significant gender difference exists in Internet usage.

Access to internet is most likely the factor that remains dominant in closing the gender gap in internet usage. Studies for instance have shown that gender gap in internet usage is most prevalent in rural areas and in developing countries with limited access to internet than in cities, towns and countries with more access to internet (Jhala & Sharma, 2016). This means that when boys and girls, female and male have equal access to internet, the gender factor will not be largely about the use of the internet, but rather about different ways in which male and female, boys and girls use internet. This indicates that there is a shift in future research towards focusing on analyzing how and why females and males use internet differently.

Impact of self-esteem and computer self-efficacy on Internet usage as a function of gender.

The results revealed that for male and female participants, their levels of self-esteem and computer self-efficacy do not have significant impact on their Internet usage patterns. More specifically, it was demonstrated that for both male and female students, their reported levels of self-esteem and computer self-efficacy do not influence the number of hours of their computer use at home, the number of hours they spend on the Internet at home, and the number of hours of their computer use at school. These results are partly in agreement with the results of some earlier studies. For example, Koronczai et al. (2013) found that self-esteem has no direct significant effect on problematic Web use. As a function of gender, Shaw and Gant (2002) did not find significant gender difference in self-esteem among technology users.

Relative to the impact of computer self-efficacy on Internet usage, Tella et al. (2007) reported that self-efficacy with computer use influences the ability to obtain and utilize electronic information for academic purposes. Zhao et al. (2010) observed that frequent access and the more one uses the technology at home and at school increases computer self-efficacy. Tsai and Tsai (2010) examined computer self-efficacy among junior high school students in Hong Kong in terms of their online explorative self-efficacy and online communication self-efficacy. It was found that no gender difference exists in online explorative self-efficacy. However, girls had higher online communicative self-efficacy than boys and, on the other hand, boys reported higher level of Internet use than girls. Showing some parallelism with the current study in terms of computer self-efficacy and Internet usage patterns, Zhao et al. (2010) examined the relationship between Internet equality and self-efficacy in computer usage. The results revealed that students who used Internet at home and at school reported higher levels

of computer self-efficacy, suggesting that access to the computer contributes to self-efficacy in its use, along with frequency of use.

In light of the principles of the uses and gratifications theory (UGT), people turn to media, including Internet-based social networking to gratify certain needs. UGT assumes that the Internet is a functional tool which people find necessary to use in order to meet their psychosocial needs. There have been studies that explored this theoretical framework in relation to the Internet. For example, Tsai and Tsai (2010) found that there is no gender difference in online explorative self-efficacy. Valentine et al. (2005) found that boys were more intensive users of the Web at home for leisure. On the other hand, girls spend significant amount of time using it for leisure purposes, particularly for online social networking (Ofcom 2008). It could be that lack of significant gender difference in computer self-efficacy and self-esteem is a result of access to the technology, depending on people's background.

On a related note, the UGT can also be applied to self-esteem and Internet usage. In this case, individuals will continue to have greater motivation to use the Web if their initial need which they sought to gratify on the Internet is met (Huang et al., 2015). Other studies have also attributed lack of gender difference in self-efficacy and use of the Internet to the fact that this difference is not permanent but dynamic, depending on the social factors that characterize male and female respondents. The lack of significant gender difference in Internet usage among students may not necessarily be the result of their levels of self-esteem and computer self-efficacy but, rather, a result of the variety of media and Web-based products such as games and social networks which make it possible for adolescents to get a wide range of features to choose from when seeking to gratify different psychological needs. In effect,

psychosocial conditions such as self-esteem and self-efficacy are gratified exponentially while adolescents spend more hours on the Internet.

The difference in gender, self-esteem, self-efficacy and internet use may be as a result of other factors other than gender. Backer (2009) for instance observes that boys in an Australian context have been socialized to portray stronger self-esteem. As a result, they hardly report lower self-esteem in research. Higher levels of internet use may not be necessarily influenced by, gender, self-esteem and self-efficacy, but by other factors such as attitudes, or information seeking behaviors. Teenage hood is a discovery period. Teenagers during this period seek information, some of which they are afraid to ask. With internet, their levels of internet use can rise not because of changes in their self-esteem or self-efficacy but because of the pressing need for information that they consider a necessity (Bond, et al., 2009).

Conclusion

The current study had determined that, while there are indications of some minor gender difference in the amount of time spent on computer and Internet use at home and at school, gender has, in fact, no significant overall effect on Internet usage patterns among high school students in Bangkok. It is interesting to note that the same group of male and female students self-reported high levels of self-esteem and computer self-efficacy; however, these high levels of self-worth and self-confidence in cyberspace technology have little to do with the volume of computer and Internet usage at home or at school. As gleaned from the review of literature, other factors may have played a bigger role in influencing the students' Web usage such as family/parental support, interpersonal utility and information-seeking,

entertainment, recreational gratification, peer relationships, individual dispositions, and/or academic purposes.

In this study, we have gained an image of how high school students use the Internet and computers, or how students spend some of their time online and how much time they spend using computers and the Internet. It can also be concluded that this study will add to the small, but growing body of knowledge concerning adolescent students' perceptions and feelings when using the Internet and computers. Finally, it can be said that despite the revelation that gender, self-esteem, and computer self-efficacy do not have significant impacts on students' Internet usage patterns, still, exploring students' attitudes toward the Internet and their usage patterns is central to understanding the social, psychological, and economic implications that come with its use, some of which may require the attention of different stakeholders in the education sector.

Limitations of the Study

The present study was conducted on a sample of senior year students from one international high school in Bangkok. Thus, the findings cannot be generalized to other senior high school students in other cities of Thailand or beyond. In a similar vein, this study was conducted in a specific time period; hence, its findings cannot be generalized to other time spans, as it was not the purpose of this study to look at gender, self-esteem, computer self-efficacy, and Internet usage over time.

While this study tested gender difference in self-esteem, self-efficacy, and Internet usage patterns, it may have been more comprehensive in scope had it included among its key

variables the factors of age and socioeconomic status. This study did not examine other relevant psychosocial factors which may have greater impact on Internet usage such as parent-child conflict, loneliness, or Internet addiction. For example, literature has indicated that rejection or alienation affect Internet use (Yao, 2005).

The participants were requested to respond to all questions in the research instrument. As the veracity of responses could not be validated in the survey, this meant that the researcher had to accept the responses at face value and assume that the respondents replied to the questions honestly. Also, in this study, only a survey questionnaire was used for data collection. In this case, the survey questionnaire was standardized to ensure that all respondents were asked the same questions the same way. This is, to some extent, a rigid form of questionnaire where answers are limited to those provided in the questionnaire, and there is no room for respondents to provide alternative answers (Sarantakos, 2005).

The findings of the current study should be interpreted with some caution because of some intervening or limiting factors beyond the scope of this study. Nonetheless, despite some identified limitations, it is anticipated that this study would provide valuable knowledge and database for a number of individuals and groups who are involved or concerned with healthy or addictive Internet usage among adolescent students. The contribution of this study towards expansion of the literature cannot be overemphasized.

The questionnaire used in this study was measured on a Likert Scale. Participants scored their self-reported self-esteem and self-efficacy scores above 3 on the Likert Scale leading to higher disproportional outcomes. Some studies have indicated that this is characteristic of the Asian concept of "saving face." The idea of saving face is a belief in

demonstrating only good and acceptable behavior when relating to others. Social expectations demand that an individual represent good character or image regardless of how the individual truly feels (Nguyen, 2015). Saving face is a norm where people are expected not to disclose their feelings (Owens, 2013). Among students, saving face is one of the main controlling factors in social pressure. It influences students' intentions and behaviors (Jin & Kang, 2010). Ones' relational image is believed to be an expression of the true self. Shared social pressure can influence individuals to act in a similar way in order to avoid what they think will bring shame if they act otherwise. As a result, individuals act just to keep the flow with what they think will meet social expectations (Lee, 2009). This would explain why participants would not self-report lower self-esteem or self-efficacy even if some would be feeling so. This is because lower self-esteem and lower self-efficacy would be associated with an image that does not manifest admiration.

Recommendations

Avenues for further research.

In this study, it was revealed that students' attitudes toward computers and their degree of confidence in their use of computers are quite high. It is for longitudinal studies and qualitative approaches in the future to gauge the growth in students' attitudes and computer self-efficacy in an attempt to explain the impact of certain demographic and psychosocial factors on Internet usage. It is believed that gender would not be a factor influencing undergraduates' attitudes toward computers, computer self-efficacy, and attitudes toward the

Internet in the near future, as computers become a prevalent tool in our daily lives, regardless of whether one likes to use it or not.

A review of the literature revealed that there are a number of other factors in addition to gender, self-esteem, and computer self-efficacy which may have bigger roles to play in influencing adolescent students' Web usage such as family/parental support, interpersonal utility and information-seeking, entertainment, recreational gratification, peer relationships, individual dispositions, and/or academic purposes. Future research should include the role played by other demographic characteristics such as age. It may prove interesting to find out whether there is age difference in self-esteem, self-efficacy, and use of the Internet. If both gender and age as independent variables are included, the study might reveal which factor has higher predictive power. In addition, future studies can involve larger samples for more reliable results. It is recommended that related future studies look more closely into these other less explored psychosocial factors and personal characteristics and their impact on youths' computer and Internet usage.

Users who frequently use the Internet would likely have easier access to the medium than those who use the medium less frequently. As such, they might be less psychologically attached to the Internet, since it is always available to them. Future research should explore these possibilities further. Additionally, the current study included the factor of duration or number of hours spent on computers and Internet at home and at school. Spending longer periods of time on the Internet allows individuals to explore and connect online more deeply. This duration may have stronger effects on psychological engagement and motivation. Future related studies should consider exploring further into this dimension in Internet usage.

Implications for practice.

The results of this study showed that female participants reported spending more time using the computer at home and at school than their male counterparts, whereas the male participants reported spending more time on the Internet than their female counterparts. Both the male and female participants rated their levels of self-esteem and self-efficacy above their respective mid-points. In this context, teachers, parents, counselors, and school administrators should create mechanisms to monitor and encourage boys and girls to utilize access to the Internet for personal development as well as for educational purposes.

In this day and age, it is inevitable that children/school children are being introduced to computers and the Internet at an earlier age; thus, technology ethics needs to be introduced especially when computers are first introduced to the child at home or the student at school. Easy access to a computer in the home or school allows more chances of deviance to occur, despite the fact that the child or student may not realize what is happening. Therefore, supervision and ethics teaching by parents, teachers, and other responsible adults becomes a necessity at home and away from home.

Teachers and parents should encourage students to talk about what they are doing on the computer and the Internet; find out whom they are talking to in chat rooms and via instant messaging, as well as the types of websites they are visiting. In schools, teachers should supervise their students' online activity. They should not be left alone for lengthy periods of time. When supervision is not possible, the teacher should employ software or hardware that will help to limit online activity. There is also the option to decrease the size of computer

classes in order for one teacher to better manage the number of students using computers in class.

Schools that offer computer classes and access to the Internet should include information on appropriate computer and Internet behavior and ethics in their curriculum. Awareness is the first step to prevention and reducing the potential of abuse. With the integration of computers and the Internet into the curriculum, there must also be responsibility. If deviance is to be avoided or decreased, all participants must take responsibility, which includes users and the suppliers. More importantly, educators and parents must be vigilant in their effort to discourage computer and Internet deviance. Furthermore, students who are going to participate in courses that require the use of the Internet would benefit if offered technology literacy courses prior to enrolling in courses that require its use. One may conclude that these courses would increase computer literacy, consequently improving attitudes toward learning. Educators who advocate technology integration in the learning process should believe it will improve learning and better prepare students to effectively participate in the 21st century workplace.

REFERENCES

Ahmadi, K. (2014). Internet addiction among Iranian adolescents: A nationwide study. *Acta Medica Iranica, 52*(6), 467–472. [PubMed]

Ahmed, S. M. Z. (2010). Measuring performance and impact of rural community-led library initiatives in Thailand. *Information Development, 26*(1), 17–35.

Ahmet, O. A. (2014). A study on epistemological beliefs of community college students and their self-efficacy beliefs regarding educational **use** of the **Internet,** *Education, 134*(3), 426–442.

Bandini, M. (1996). The impact of information technology on the relationship between the public and the private realms. *Technology Analysis and Strategic Management, 8*(3), 331–340.

Bargh, J. A., McKenna, K. Y., & Fitzsimons, G. M. (2002). Can you see the real me? Activation and expression of the "true self" on the Internet. *Journal of Social Issues, 58*, 33–48

Baule, S., *& Lewis*, J. E. (*2012*). *Social networking for schools.* Santa Barbara, CA: Linworth/ABC-CLIO.

Barker, V. (2009). Older Adolescents' Motivations for Social Network Site Use: The Influence of Gender, Group Identity, and Collective Self-Esteem, Cyberpsychology & Behavior, 12, (2), 209-213.

Bauhik, D., & Deshen, M. (2014). WhatsApp goes to school: Mobile instant messaging between teachers and students. Journal of Information Technology Education: Research, 13, 217-231.

Bleidorn, W., Arslan, R. C., Denissen, J. J. A., Rentfrow, P. J., Gebauer, J. E., Potter, J., & Gosling, S.D. (2015). Age and gender differences in self-esteem – A cross-cultural window. *Journal of Personality and Social Psychology.* Available at http://dx.doi.org/10.1037/pspp000078

Blumler, J. G., & Katz, E. (1974). *The uses of mass communication*. Newbury Park, CA: Sage Publications.

Bond, B.J., Hefner, V., & Drogos, K.L. (2009). Information-Seeking Practices during the Sexual Development of Lesbian, Gay, and Bisexual Individuals: The Influence and Effects of Coming Out in a Mediated Environment, *Sexuality & Culture*, 13:32–50.

Brown, J. H. (2008). *Developing and using computer self-efficacy scales for adults.* Paper presented at the 24th Annual Conference on Distance Teaching and Learning. August 5-8, 2008 (pp. 1-5). Madison, Wisconsin, USA: University of Wisconsin-Madison, School of Education. Retrieved from http://www.uwex.edu/disted/ conference/Resource_library/proceedings/08_12667.pdf

Chandler, D. (1994). *Why do people watch television?* Retrieved from http://visual-memory.co.uk/daniel/Documents/short/ usegrat.html

Charney, T., & Greenberg, B. (2001). Uses and Gratification of the Internet. InC. Lin & D Atkin (Eds.) Communication Technology and Society: New Media Adoption and Uses (pp. 383-406) Cresskill, NJ: Hampton.

Cheng, S., Ma, K-h. J., & Missari, S. A. (2014). The effects of Internet use on adolescents' first romantic and sexual relationships in Taiwan. *International Sociology, 29*(4) 324–347.

Cheong, P. (2008). The young and techless? Investigating Internet use and problem-solving behaviors of young adults in Singapore. *New Media and Society, 10*(5), 771–791.

Chiao, C., Yi, C-C., & Ksobiech, K. (2014). Adolescent Internet use and its relationship to cigarette smoking and alcohol use: A prospective cohort study, *Addictive Behaviors*, 39(1), 7–12.

Choi, N. G., & DiNitto, D. M. (2013). The digital divide among low-income homebound older adults: Internet use patterns, ehealth literacy, and attitudes toward computer/Internet use in the last year. *Journal of Medical Internet Research, 15*(5), e93, 6–20.

ComScore. (2009). The 2009 US Digital Year Review. Retrieved from http://www.smama.ch/wpcontent/uploads/2012/05/09_US_Digital_Year_in_Review_comScore

Davidson, J., & Elena, M. (2013). *Exploring young people's use of social networking sites and digital media in the Internet safety context: a comparison of the UK and Bahrain, Information, Communication & Society,* 16 (9). pp. 1456-1476

Electronic Transactions Development Agency (2013). Thailand Internet User Profile 2013. Retrieved from http://documents.mx/download/link/thailand-internet-user-profile-2013-executive-summary.

Embi, R. (2007). *Computer anxiety and computer self-efficacy among accounting educators at Universiti Teknologi Mara (UiTM), Malaysia* (Unpublished doctoral dissertation), Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA.

Finn, J. (2002). MSW student perception of the efficacy and ethics of Internet-based therapy. *Journal of Social Work Education, 38*(3), 403–419.

Gackenbach, J. (1998). *Psychology and the Internet: Intrapersonal, interpersonal, and transpersonal implications.* New York: Academic Press.

Gangadharbatla, H. (2008). Facebook Me: Collective Self-Esteem, Need to Belong, and Internet Self-Efficacy as Predictors of iGenerationa's Attitudes toward Social Networking Sites, *Journal of Interactive Advertising,* 8(2),1-15.

Garrison, D. R. (2011). Implications of online learning for the conceptual development and practice of distance education. *Journal of Distance Education, 23*(2), 93–104.

Geçer, A. K. (2014). A study on information search and commitment strategies on Web environment and Internet usage and self-efficacy beliefs of university students. *The Turkish Online Journal of Educational Technology, 13*(2), 1–17.

Glatthorn, A. A., & Joyner, R. L., (2005). *Writing the winning thesis or dissertation: A step-by-step guide* (2nd ed.). Thousand Oaks, CA: Corwin Press.

Gordon, S. (2011, January 17). *Video game 'addiction' tied to depression, anxiety in kids.* Retrieved from http://consumer.healthday.com/mental-health-information

Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Journal of Applied Developmental Psychology, 25*(6), 633–649. doi:10.1016/j

Hayward, B. et al. (2003). *Young people's use of ICT 2002.* ICT in Schools Research and Evaluation Series No. 12. Becta/DfES. Retrieved from http://www.becta.org.uk/page_documents/research/full_report.pdf

Henn, M., Weinstein, M., & Foard, N. (2009). *A critical introduction to social research* (2nd ed.). Los Angeles: Sage Publications. ISBN 9781848601796

Heo, J., Juhwan, O., Subramanian, S.V., Kim, Y., & Kawach, I. (2014). Addictive Internet use among Korean adolescents: A national survey, *PLOS ONE, 9*(2), 11–19.

Ho. R. (June, 10th, 2015). Thesis Proposal Review.

Hsiao, H-C., Tu, Y-L., & Chung, H-N. (2012). Perceived social support, computer self-efficacy, and computer use among high school students. *Turkish Online Journal of Educational Technology, 11*(2), 167–177.

Huang, C-L., Yang, S. C., & Chen, A-S. (2015). Motivations and gratification in an online game: Relationships among players' self-esteem, self-concept, and interpersonal relationships. *Social Behavior and Personality, 43*(2), 193–204.

Huang, H. Y., & Leung, L. (2012). Gratification-opportunities, self-esteem, and loneliness in determining usage preference of BBS and Blog among teenagers in China. *Atlantic Journal of Communication, 20*(3), 141–157.

Ingard, S. (2009). *Internet-based instruction for high school students' learning in Bangkok Metropolis, Thailand.* Paper presented at the First International Conference on Education and New Learning Technologies, Barcelona, Spain. Retrieved from: http:// library.iated. org/view/INGARD2009INT

Jackson, L. A., Fitzgerald, H. E., von Eye, A., Zhao, Y., & Witt, E. A. (2010). The digital divides in the U.S.: Access, broadband, and nature of Internet use. In E. Ferro, Y. K. Dwivedi, J. R. Gil-Garcia, & M. D. Williams (Eds.). Handbook of research on overcoming digital divides: Constructing an equitable and competitive information society (Vol. 1, pp. 223–238). Hershey, PA: IGI Global.

Jhala, J. & Sharma, R. (2016). Internet Use Among Adolescents, *J. Indian Assoc. Child Adolesc. Ment. Health*, 12(1), 36-59.

Jin B., & Kang, J. H. (2010). Face or Subjective Norm? Chinese College Students' Purchase Behaviors toward Foreign Brand Jeans, *Clothing & Textiles Research Journal* 28(3) 218-233.

Johnson, G.M. (2011). Self-Esteem and Use of Internet among Young School-Age Children, International Journal of Psychology Studies, 3 (2), 48-53.

Joorabchi, T. N., Osman, M. N., & Hassan, M. S. (2012). The relationship between personal factors and its effect on Internet usage. *Journal of Mass Communication Journalism, 2*(11), 2–8. doi:10.4172/2165-7912.1000139

Kent, N., & Facer, K. (2004). Different worlds? A comparison of young people's home and school ICT use. *Journal of Computer-Assisted Learning, 20,* 440–455.

Khorrami-Arani, O. (2001). Researching computer self-efficacy. *International Education Journal, 4*(2), 17–25.

Knezek, G., Christensen, R., & Rice, D. (1996). Changes in teacher attitudes during information technology training. *Technology and Teacher Education Annual*, 763–776.

Koronczai, B., Kökönyei, G., Urbán, R., Kun, B., Pápay, O., Nagygyörgy, K., Griffiths, M. D., & Demetrovics, Z. (2013). The mediating effect of self-esteem, depression, and anxiety between satisfaction with body appearance and problematic Internet use. *American Journal of Drug & Alcohol Abuse, 39*(4), 259–265.

Kraut, R., & Kiesler, S. (2003 Summer). The social impact of Internet use. *Psychological Science Agenda,* pp. 8-10. Association of American Medical Colleges (AAMC). Retrieved from http:// services.aamc.org/easurvey.

Kraut, R., Kiesler, S., Boneva, B., Cummings, J. N., Helgeson, V., & Crawford, A. M. (2002). Internet paradox revisited. *Journal of Social Issues, 58*(1), 49–74.

LaRose, R., Lin, C. A., & Eastin, M. S. (2003). Unregulated Internet usage: Addiction, habit, or deficient self-regulation? *Media Psychology, 5*(3), 225–253.

Lee, J (2009). Escaping Embarrassment: Face-work in the Rap Cipher, *Social Psychology Quarterly* 72, (4), 306–324.

Lee, H.-R., Lee, H-E., Choi, J., Kim, J.-H., & Han, H.-L. (2014). Social media **use**, body image, and psychological well-being: A cross-cultural comparison of Korea and the U.S. *Journal of Health Communication, 19*(12), 1343–1358.

Lee, Y. J. (2010). *Motives relating to Internet usage among Korean adolescents* (Unpublished master's thesis). University of Missouri-Kansas City, Kansas City, Missouri. Retrieved from https://mospace.umsystem.edu/xmlui

Lenhart, A., & Lewis, O. (2001). Teenage Life Online: The Rise of Instant Message Generation and the Internet's Impact on Friendships and Family Relationships. Retrieved from http://www.pewinternet.org/files/old-media/Files/Reports/2001/PIP_Teens_Report.pdf.pdf

Li, M., Chen, J., Li, N., & Li, X. (2014). A twin study of problematic Internet **use**: Its heritability and genetic association with effortful control. *Twin Research and Human Genetics, 17*(4), 279–287.

Li, N., & Kirkup, G. (2007). Gender and cultural differences in Internet use: A study of China and the UK. *Computers and Education, 48,* 301–317.

Liau, A.K., Khoo, A., & Ang, P.H. (2005). Factors influencing Adolescents Engagement in Risky Internet Behavior, *CyberPsychology & Behavior,* 8(6), 513-520.

Lin, C.A. (1999). Predicting Online Service Adoption Likelihood among Potential Sub-Scribers: A Motivational Approach, *Journal of Advertising Research*, 39, 79-89.

Livingstone, S., & Helsper, J. E. (2010). Balancing opportunities and risks in teenagers' use of the Internet: The role of online skills and Internet self-efficacy, *New Media and Society, 12*(2), 309–329.

Lopez-Bonilla, J.M., & Lopez Bonilla, L.M. (2010). Sensation Seeking and the Use of Internet, *Social Science Computer Review,* 28 (2), 177-193.

McKenna, K.Y.A., & Bargh, J. A. (2000). Plan 9 from cyberspace: The implications of the Internet for personality and social psychology. *Personality and Social Psychology Review, 4*(1), 57–75. doi: DOI: 10.1207/S15327957PSPR0401_6

McQuillan, H., & O'Neill, B. (2009). Gender differences in children's Internet use. *Journal of Children and Media, 3*(4), 366–378.

Milioni, D. L., Doudaki, V., & Demertzis, N. (2014). Youth, ethnicity, and a 'reverse digital divide': A study of Internet use in a divided country, *Convergence: The International Journal of Research Into New Media Technologies, 20*(3), 316–336.

Miniwatts Marketing Group (2010). Internet World Stats: Internet Usage and Population Statistics. Retrieved from http://www.internetworldstats.com/stats3.htm

Moharan-Martin, J. (2008). Internet abuse: Emerging trends and lingering questions. In A. Barak (Ed.), Psychological aspects of cyberspace: Theory, research, applications (pp. 32–69). Cambridge, UK: Cambridge University Press.

Moyle, K. (2010). *Building innovation, learning with technologies.* Australian Education Review. Australian Council for Educational Research (ACER).Retrieved from www.acer.edu.au/aer/10

National School Boards Foundation [NSBF]. (2000). *Safe and smart: Research and guidelines for children's use of the Internet.* Alexandria,VA: NSBF.

New Zealand Human Rights Commission. [NZHRC]. (2008). *To be who I am.* Report of the Inquiry into Discrimination Experienced by Transgendered People. Duhaime's Law Dictionary. Retrieved from http://www.duhaime.org/LegalDictionary/G/Gender.aspx

Nguyen, T., Q., T. (2015). The Influence of Traditional Beliefs on Vietnamese College Lecturers' Perceptions of Face, *Journal of Education for Teaching*, 41 (2), 203-214.

Olin-Scheller, C., & Wikström, P. (2010). Literary Prosumers: Young People's Reading and Writing in a New Media Land Scape. Retrived from https://www.researchgate.net/publication/272737665_Literary_Prosumers_Young_People's_Reading_and_Writing

Office of Communications [Ofcom]. (2008). *Media literacy audit: Report on UK children's media literacy.* Ofcom. Retrieved from: http://www.ofcom.org.uk/advice/media_literacy/medlitpub/medlit pubrss/children/

Owens, T.M. (2013). Communication, Face Saving, and Anxiety at an Academic Library's Virtual Reference Service, *Internet Reference Services Quarterly,* 18 (2), 139-168.

Papacharissi, Z. (2008). Uses and gratifications: An integrated approach to communication theory and research. Retrieved from http://tigger.uic.edu/~zizi/Site/Research_files/PapacharissiU%26G.pdf

Papacharissi, Z., & Rubin, A. M. (2000). Predictors of Internet use. *Journal of Broadcasting and Electronic Media, 44*(2), 175–196.

Perloff, R.M. (2014). Social Media Effects on Young Women's Body Image Concerns: Theoretical Perspectives and an Agenda for Research, *Sex Roles,* DOI 10.1007/s11199-014-0384-6.

Pullmann, H., Allik, J., & Realo, A. (2009). Global self-esteem across the life span: A cross-sectional comparison between representative and self-selected Internet samples. *Experimental Aging Research, 35*(1), 20–44.

Purushothaman, A., & Zhou, C. (2014). Change toward a creative society in developing contexts – Women's barriers to learning by information and communication technology. *Gender, Technology, and Development, 18*(3) 363–386. doi:10.1177/ 0971852414544008

Ramón-Jerónimo, M. A., Peral-Peral, B., & Arenas-Gaitán, J. (2013). Elderly persons and Internet use. *Social Science Computer Review, 31*(4), 389–403.

Rawassizadeh, R. (2012). Towards sharing life-log information with society. *Behaviour and Information Technology, 31*(11), 1057–1067.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Ruggiero, T. E. (2000). Uses and gratifications theory in the 21st century. *Mass Communication and Society, 3*(1), 3–37.

Sam, H. K., Othman, A. E. A., & Nordin, Z. S. (2005). Computer self-efficacy, computer anxiety, and attitudes toward the Internet: A study among undergraduates in Unimas. *Educational Technology and Society, 8*(4), 205–219.

Sarantakos, S. (2005). *Social research* (3rd ed.). New York: Palgrave Macmillan.

Schumacher, P., & Morahan-Martin, J. (2001). Gender, Internet, and computer attitudes and experiences. *Computers in Human Behavior, 17*(1), 95–110.

Schwalbe, M. L., & Staples, C. L. (1991). Gender differences in sources of self-esteem. *Social Psychology Quarterly, 54*(2), 158–168.

Schwanen, T., Kwan, M.-P. & Ren, F. (2014). The Internet and the gender division of household labour. *The Geographical Journal, 180*(1), 52–64.

Ševčíková, A., & Daneback, K. (2014). Online pornography **use** in adolescence: Age and **gender** differences. *European Journal of Developmental Psychology, 11*(6), 674–686.

Shaw, L. H., & Gant, L. M. (2002). In defense of the Internet: The relationship between internet communication and depression, loneliness, self-esteem, and perceived social support. *CyberPsychology and Behavior, 5*, 157–171.

Singh, S. (2001). Gender and the use of the Internet at home. *New Media and Society, 3*(4), 395–416.

Sirakaya-Turk, E., Uysal, M., Hammitt, W., & Vaske, J. J. (2011). *Research methods for leisure, recreation, and tourism.* London, UK: CABI Publishing.

Stoilescu, D., & Egodawatte, G. (2010). *Gender differences in the use of computers, programming, and student interactions in computer science classrooms.* ED-MEDIA 2010: World Conference on Educational Multimedia, Hypermedia & Telecommunications, June 29 - July 2, 2010, Toronto, Canada.

Suan, P. (2010). *Students' experience of online learning in Thailand.* Retrieved from http://www.stc.arts.chula.ac.th/cyberethics/papers

Taipale, S. (2012). The relationship between Internet use, online and printed newspaper reading in Finland: Investigating the direct and moderating effects of gender. *European Journal of Communication, 28*(1), 5–18.

Taylor, J. (2003). Cyber-Buddhism and the changing urban space in Thailand. *Space and Culture, 6*(3), 292–308.

Tekinarslan, E. (2009). Turkish university students' perceptions of the World Wide Web as a learning tool: An investigation based on gender, socio-economic background, and Web experience. *The International Review of Research in Open and Distributed Learning, 10*(2), 1–20.

Tella, A., Tella, A., Ayeni, C. O., & Omoba, R. O. (2007). Self-efficacy and use of electronic information as predictors of academic performance. *Electronic Journal of Academic and Special Librarianship*, 8(2). Retrieved from http://southern librarianship.icaap.org/content/v08n02/tella_a01.html

Tella, A. (2008). Teacher variables as predictors of academic achievement of primary school pupils mathematics, *International Electronic Journal of Elementary Education*, 1(1), 16-33.

Teo, T., & Lim, V. (1997). Usage patterns and perceptions of the Internet: The gender gap. *Equal Opportunities International, 16*(6/7), 1–8.

Teo, T., Luan, W. S., Thammetar, T., & Chattiwat, W. (2011). Assessing e-learning acceptance by university students in Thailand. *Australasian Journal of Educational Technology, 27*(8), 1356–1368.

Thanuskodi, S. (2009). *Gender differences in Internet usage among college students: A comparative study, library philosophy, and practice (e-journal).* (Paper 1052, pp. 11–17). Retrieved from http://digitalcommons.unl.edu/libphilprac/1052

Tsai, M. J., & Tsai, C. C. (2010). Junior high school students' Internet usage and self-efficacy: A re-examination of the gender gap, *Computers and Education, 54,* 1182–1192.

TUIK (Turkish Statistical Institute). (2010). Information and Communication Technology (ICT) Survey on House Holds and Individuals 2010. Retrieved from http://www.turkstat.gov.tr/PreHaberBultenler

Tynes, B. M., & Mitchell, K. J. (2013). Black youth beyond the digital divide: Age and gender differences in Internet use, communication patterns, and victimization experiences. *Journal of Black Psychology, 40*(3), 291–307.

Valentine, G., Marsh, J., Pattie, C., & BMRB. (2005). *Children and young people's home use of ICT for educational purposes: The impact on attainment at key stages 1–4.* DfES Research Brief No: RB672. Retrieved from http://webarchive.national archives.gov.uk/

Van Scoter, J., Ellis, D., & Railsback, J. (2001). *Technology in early childhood education: Finding a balance.* Northwest Regional Educational Laboratory (NWREL), Portland, Oregon. Retrieved from: http://www.techknowlogia.org/

Van Zoonen, L. (2002). Gendering the Internet: Claims, controversies, and cultures. *European Journal of Communication, 17*(1), 5–23.

Wanajak, K. (2011). *Internet use and its impact on secondary school students in Chiang Mai, Thailand* (Unpublished doctoral dissertation), Faculty of Computing, Health and Science, Edith Cowan University, Perth, Western Australia.

Wang, S.-K., Hsu, H.-Y., Campbell, T., Coster, D., & Longhurst, M. (2014). An investigation of middle school science teachers and students use of technology inside and outside of classrooms: Considering whether digital natives are more technology savvy than their teachers. *Educational Technology Research and Development, 62*(6), 637–662.

Wang, Y.-M., & Artero, M. (2005). Caught in the Web: University student use of Web resources. *Educational Media International, 42*(1), 71–82.

Wu, Y.-T., & Tsai, C.-C. (2006). University students' Internet attitudes and Internet self-efficacy: A study at three universities in Taiwan, *CyberPsychology & Behavior*, 9, 441-450.

Yao, M.Z., He, J., Ko, D. M., & Pang, K. (2014). The influence of personality, parental behaviors, and self-esteem on Internet addiction: A study of Chinese college students. *Cyberpsychology, Behavior, and Social Networking, 17*(2), 104–110.

Ybarra, M. L., & Mitchell, K. J. (2005). Exposure to Internet pornography among children and adolescents: A national survey. *Cyberpsychology and Behavior, 8*(5), 473–486.

Zainudeen, A., Iqbal, T., & Samarajiva, R. (2010). Who's got the phone? Gender and the use of the telephone at the bottom of the pyramid. *New Media and Society, 12*(4), 549–566. Retrieved from http://nms.sagepub.com/cgi/content/abstract/12/4/549

Zhang, Y., Shing-Tung, T. L., & Leung, L. (2011). Gratifications, collective **self-esteem,** online emotional openness, and trait-like communication apprehension as predictors of Facebook **uses**. *Cyberpsychology, Behavior, and Social Networking, 14*(12), 733–739.

Zhao, L, Lu, Y., Huang, W., & Wang, Q. (2010). Internet inequality: The relationship between high school students' Internet use in different locations and their Internet self-efficacy. *Computers and Education, 55*(4), 1405–1423.

ASSUMPTION UNIVERSITY OF THAILAND
BROTHERS of S1 GABRIEL
LABOR VINCIT OMNIA
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

APPENDIX A

Survey Questionnaire

Section 1. PI

Directions: Please check (√) the appropriate box to indicate your answer.

1. Gender: { } Male { } Female

2. How many hours do you use your computer at home?

   { } 0 hours per week { } 1–4 hours per week

   { } 5–10 hours per week { } more than 10 hours per week

3. How many hours do you spend on the Internet at home?

   { } 0 hours per week { } 1–4 hours per week

   { } 5–10 hours per week { } more than 10 hours per week

4. How often do you use a computer at school?

   { } 0 hours per week { } 1–4 hours per week

   { } 5–10 hours per week { } more than 10 hours per week

ASSUMPTION UNIVERSITY OF THAILAND
SINCE1969
มหาวิทยาลัยอัสสัมชัญ

Section 2. RSES

Directions: Below is a list of 10 statements dealing with your general feelings about yourself. Indicate how you feel about the statement by putting a check mark (√) on the appropriate box, using the following scale:

SA = if you *strongly agree*
A = if you *agree*
D = if you *disagree*
SD = if you *strongly disagree*

	SA	A	D	SD
1. On the whole, I am satisfied with myself.				
2. At times, I think I am no good at all.				
3. I feel that I have a number of good qualities.				
4. I am able to do things as well as most other people.				
5. I feel I do not have much to be proud of.				
6. I certainly feel useless at times.				
7. I feel that I'm a person of worth, at least on an equal plane with others.				
8. I wish I could have more respect for myself.				
9. All in all, I am inclined to feel that I am a failure.				
10. I take a positive attitude toward myself.				

Section 3. CAQ

Directions: Below is a list of 8 statements dealing with your general feelings about using the computer. Indicate how you feel about the statement by putting a check mark (√) on the appropriate box, using the following scale (as in the previous section):

SA = if you *strongly agree*
A = if you *agree*
D = if you *disagree*
SD = if you *strongly disagree*

	SA	A	D	SD
1. I feel comfortable working with a computer.				
2. I get a sinking feeling when I think of trying to use a computer. (R)				
3. I think that it takes a long time to finish when I use a computer. (R)				
4. Computers do not scare me at all.				
5. Working with a computer makes me nervous. (R)				
6. Using a computer is very frustrating. (R)				
7. I will do as little work with computers as possible. (R)				
8. Computers are difficult to use. (R)				

THANK YOU FOR YOUR PARTICIPATION

THE ASSUMPTION UNIVERSITY LIBRARY