

**FACTORS ASSOCIATED WITH THE INAPPROPRIATE
INTERNET BEHAVIOR OF HIGH SCHOOL STUDENTS
IN BANGKOK METROPOLITAN**



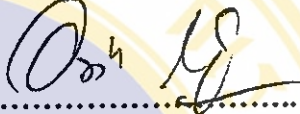
**A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF SCIENCE (PUBLIC HEALTH)
MAJOR IN INFECTIOUS DISEASE AND EPIDEMIOLOGY
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2006**

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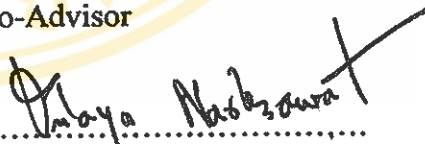

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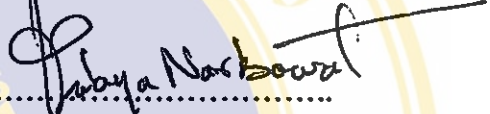
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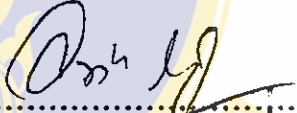
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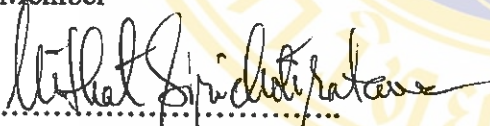
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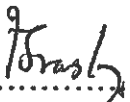

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FACTORS ASSOCIATED WITH THE INAPPROPRIATE INTERNET BEHAVIOR OF HIGH SCHOOL STUDENTS IN BANGKOK METROPOLITAN.

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ABSTRACT

This cross-sectional study aimed to investigate internet using behavior and factors associated with the inappropriate internet using behavior of high school students in Bangkok metropolitan. The sample were 986 students who had been using the internet for at least 12 months, and were in grade 7 to grade 12. Data were collected by self-administered questionnaires between February and March 2005. Data were analyzed by univariate analysis and multivariate analysis for determining the association between personal characteristics, family factors (parental status and child rearing patterns), friend factors (friend influence and friend behavior), Internet using characteristics (time and place of Internet using activities) and by chance motivation factors (stranger, banner, e-mail, search engine) with inappropriate chatting, website using, online game playing and excessive use of the Internet (>4 hours per time).

The results in univariate analysis revealed significant association between the inappropriate Internet behavior and student's grade and GPA, friend factors, mother's and father's income, child rearing pattern and computer placement.

Multivariate analysis showed that the factors which were significantly associated with inappropriate Internet behavior were being male, being humanities student, having accidentally found pornographic website via using search engine, having ever persuaded by stranger to chat about sex, having seen pornographic advertisement banner, having received e-mail with pornographic content, having used Internet >4 hours per times or >6 times per week.

These findings suggest that reducing time of use of the internet, using an internet filter program to prevent the chance motivation factors, monitoring chat behavior and chat content will reduce risk of having inappropriate Internet behavior. Moreover, parents should take care to place the computer in family room and take care of child rearing patterns, internet using, and characteristics of their children and their friends.

KEY WORDS : INAPPROPRIATE INTERNET BEHAVIOR / HIGH SCHOOL STUDENTS / INTERNET

132 P.

ปัจจัยที่มีความสัมพันธ์กับพฤติกรรมการใช้อินเทอร์เน็ตที่ไม่เหมาะสมของนักเรียนมัธยมศึกษาใน กรุงเทพมหานคร (FACTORS ASSOCIATED WITH THE INAPPROPRIATE INTERNET BEHAVIOR OF HIGH SCHOOL STUDENTS IN BANGKOK METROPOLITAN)

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บทคัดย่อ

การศึกษานี้เป็นการศึกษาภาคตัดขวางเพื่อศึกษาถึงพฤติกรรมการใช้อินเทอร์เน็ตและปัจจัยที่มีความสัมพันธ์กับพฤติกรรมการใช้อินเทอร์เน็ตที่ไม่เหมาะสมของนักเรียนมัธยมศึกษาในกรุงเทพมหานคร กลุ่มตัวอย่างคือนักเรียนมัธยมศึกษาชั้นปีที่ 1 ถึง 6 ที่เคยใช้อินเทอร์เน็ตมาเป็นเวลาอย่างน้อย 12 เดือนจำนวน 986 คน ทำการเก็บข้อมูลโดยใช้แบบสอบถามในระหว่างเดือนกุมภาพันธ์ถึงมีนาคม พ.ศ. 2548 การศึกษานี้ได้ศึกษาความสัมพันธ์ของตัวแปร อันได้แก่ ลักษณะส่วนบุคคล, ปัจจัยครอบครัว (สถานะของผู้ปกครอง และการเลี้ยงดูของครอบครัว), ปัจจัยทางด้านเพื่อน (อิทธิพลของเพื่อนและพฤติกรรมของเพื่อน), ลักษณะการใช้งานอินเทอร์เน็ต (เวลา,สถานที่ และกิจกรรมบนอินเทอร์เน็ต), ปัจจัยทางการได้รับสิ่งจูงใจโดยบังเอิญ (คนแปลกหน้า,โฆษณา,อีเมลล์, การค้นหาข้อมูล) ต่อพฤติกรรมที่ไม่เหมาะสมในการ ใช้ห้องสนทนา, เข้าเว็บไซต์, เล่นเกมส์ออนไลน์ และ ใช้อินเทอร์เน็ตเป็นเวลานาน (> 4 ชั่วโมงต่อครั้ง)

จากการวิเคราะห์ Univariate analysis พบว่า เกรดเฉลี่ย และ เกรดเฉลี่ยสะสม, ปัจจัยทางด้านเพื่อน, รายได้ของพ่อและแม่, การเลี้ยงดูของครอบครัวและตำแหน่งที่ตั้งของคอมพิวเตอร์ภายในบ้านมีความสัมพันธ์กับพฤติกรรมการใช้อินเทอร์เน็ตที่ไม่เหมาะสม และจากการวิเคราะห์ Multivariate analysis แสดงให้เห็นว่า เพศชาย, นักเรียนที่เรียนสายศิลป์-ภาษา, การพบเว็บไซต์ลามกอนาจารผ่านเว็บค้นหาข้อมูล (search engine), การได้รับการชักจูงจากคนแปลกหน้าให้พูดคุยเกี่ยวกับเรื่องเพศ, การพบเห็นโฆษณาสื่อลามกอนาจารบนเว็บไซต์, การได้รับอีเมลล์ที่มีเนื้อหาลามกอนาจาร, การใช้อินเทอร์เน็ตมากกว่า 4 ชั่วโมงต่อครั้ง หรือ มากกว่า 6 ครั้งต่อสัปดาห์ เป็นปัจจัยที่มีความสัมพันธ์ต่อการเกิดพฤติกรรมการใช้อินเทอร์เน็ตที่ไม่เหมาะสม

ดังนั้นการลดระยะเวลาและจำนวนครั้งในการใช้งานอินเทอร์เน็ต, การใช้โปรแกรมกรองเว็บไซต์ที่ไม่เหมาะสมเพื่อลดปัจจัยทางการได้รับสิ่งจูงใจโดยบังเอิญ, การควบคุมพฤติกรรมการใช้ห้องสนทนาจะสามารถลดความเสี่ยงต่อการเกิดพฤติกรรมการใช้อินเทอร์เน็ตที่ไม่เหมาะสมได้ นอกจากนี้ผู้ปกครองควรติดตั้งคอมพิวเตอร์ในห้องส่วนรวมและให้ความสนใจต่อการเลี้ยงดูบุตรหลาน, การใช้อินเทอร์เน็ต และลักษณะของเพื่อนที่คบ

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CHAPTER I

INTRODUCTION

1.1 Background

Since 1957, Soviet Union has sent up the satellite name “Sputnik” and this was considered as a cause of political problem. Thus in 1969 the US Army was confronted with the risk of military, nuclear weapons to destroy the US information system and computer center between USSR and USA. Therefore, The Department of Defense gave fund to do researches on the computer system which was capable to connect computer for exchanging data between the different computer systems and also capable to send and receive accurate data even when some computers or connecting line had been destroyed. This project was called DARPA (Defense Advanced Research Project Agency) And the network system was called DARPA Network. This network has been developed into ARPANet (Advanced Research Projects Agency Network) and subsequently into INTERNET. The major function was the creation of standard system for data communication, called Network Control Protocol (NCP) which was later be adapted to a new protocol because of the problem in expanding its peripherals.(1-6)

In 1986, The National Science Foundation (NSF) of the United State built up the new network system called NSFNet which composed of 5 Supercomputers in 5 states connected together for educational purposes, scientific researches and used TCP/IP standard to send and receive data network. After that there were many network connections such as UUNET, UUCP, BitNet, CSNet which use the major NSFNet as the backbone of the network. In 1987, ARPANET was integrated into NSFNet to reduce major role and ARPANET was closed in 1991 (1-2)

In 1987, Thailand was approaching the age of Information Technology and began to develop extensive computer network systems for communication and exchanging information around the world, as known as “Internet”. Thai San network

was set up in 1992 and in 1995 the Internet Thailand Company limited worked as the first Internet Service Provider (ISP) in Thailand and opened the first Internet service to the public (1-2). Other private sectors have had the role as ISP later on and had increased the popularity of the Internet. Since then, the Internet user was tremendously increased to 3.5 million in 2001 and it was estimated about 6 million in 2003. (7)

Table 1 Number of Thailand Internet users 1991- 2003 (7)

Year B.E.	Year A.D.	Users	Source
2534	1991	30	NECTEC
2535	1992	200	NECTEC
2536	1993	8,000	NECTEC
2537	1994	23,000	NECTEC
2538	1995	45,000	NECTEC
2539	1996	70,000	NECTEC
2540	1997	220,000	Internet Thailand/NECTEC
2541	1998	670,000	Internet Thailand/NECTEC
2542	1999	1,500,000	ISP Club/NECTEC
2543	2000	2,300,000	ISP Club/NECTEC
2544	2001	3,500,000	NSO/NECTEC (household survey)
2545	2002	4,800,000	NECTEC (estimate)
2546	2003	6,000,000	NECTEC (estimate)

source : <http://www.ntl.nectec.or.th/internet/user-growth.html>

The Internet use became popular because of the rapidity of technology development, convenience, and introduction of many kinds of Internet activities such as electronic mail, information search, NEWS, webboard, chat, file download (music, game, software), online games, shopping and others. The Internet is easy to access, only the click of a button, users can connect to website across the world 24 hours a day. There is no end to the available information line by clicking another link in order to visit another site. Most of websites or webpages are presented in brilliant colors and

fascinating movements. It is fast, easy to use and the interactive qualities make the Internet an exciting experience. Users can interact both social and intellectual exchanges as either participants or observers. Internet users can disguise and change themselves to be whoever they want to be. If they are unhappy with their real life, they can create an ideal virtual life, (7-8) those activities are the most popular for Internet users. Internet has helped people in learning, working, and changing human behavior and life styles. At present, computer courses are available in primary schools through the universities in order to train youngsters on the computer knowledge and questions. (9-12)

Thailand Internet User Survey in 2001 revealed that the Internet users in age less than 20 years old were increasing (3), and in 2003, the survey found that average Internet using time is 10.1 hours per week, however about 20.2 percent of the Internet users used the internet on the average of 20 hours per week(5). For person under 20 year old, they used Internet for entertainment such as online games about 5.8 percent. About sixty-eight percent of online game players spent 1-3 hours per week on playing games and 6.7 percent of online game players played game more than 20 hours per week (3-5). The Parents opinion survey about Internet or Computer usage in 2003 found that most of the parents who were facing problems of Internet used in children were concerned about computer games and Online games (12). The ECPAT International, an association of several organization sponsors by the British Embassy in Bangkok, conducted an online survey entitled "Are Our Children at Risk Online?" aimed at ascertaining the dangers of the Internet in relation to child sexual exploitation, the result of the survey highlighted dangers of real-life meetings with online impostors, online conversations about sex, and leaving children alone with the computer. Surprisingly, 30 percent of children aged 7 to 11 and 52 per cent of youths (aged 12 to 25) said they had no problems with trading naked pictures of movie stars via computers. A total of 73 percent of the porn site regulars were undeterred by the inconvenient consequences of visiting those sites, including facing dozens of porn-related commercial pop-up windows and having their homepage settings changed. However, 43 percent of children and 63 percent of youths admitted that they had faced some shocking websites containing distressing or ugly pictures, or bad language. The survey found that 92 per cent of children and youths had been invited to talk about

sex. Once faced with such situations, most of them opted to change the subject or switch off while 17 percent continued the conversation, arguing that the risk was minimal (13). Most children and youths were aware of the possibility that their virtual friends or confidants could be impostors, however they really did not care about that. More astonishing, half of both children and youths discovered that at least one of their friends on the Net was an impostor.

The most common problems in adolescent Internet used are using Internet with inappropriate objective, such as using chat program for finding new friends by lying, using rude words, playing violence games, seeing pornographic websites, sending pornographic pictures between friends through electronic mail. Some are spending lot of time in front of the computer which effected their physical and mental health. The long time used of computer is a cause of Repetitive Strain Injury (RSI), lacking of physical exercise, less eating time and Computer Vision Syndrome (CVS) such as eye sore, itch and lag of visual effect. The mental effects are aggressive behavior, losing capability of learning, social alienation, losing of relationship with the others, modification of sexual behavior, and risk of being a victim, such as the delusion in chat room, hacking of information on computer system, computer virus, junk mail or pornographic electronic mail (11, 13-15). In addition The Internet addict is the new psychological problem and was categorized into 5 specific subtypes as followed; Cyber sexual addiction (compulsive use of adult web sites for cybersex and cyberporn), Cyber-relationship addiction (over involvement with online relationship as in chat room), Net compulsion (obsessive online gambling, shopping or online trading), Information overload (compulsive web surfing or database search) and Computer addiction (obsessive online game or computer game playing) (16).

The study on children behavior and factors related to Internet use is still minimal. This study aimed at identifying factors associated with the inappropriate used of Internet among adolescents, so that the preventive measures could be developed to reduce inappropriate Internet behavior.

1.2 Objectives

1.2.1 To study the Internet behaviors characteristic of high school students in Bangkok metropolitan.

1.2.2 To study the association of the factors related to the inappropriate Internet behavior of high school students in Bangkok metropolitan.

1.3 Hypothesis

Personal Characteristics, Internet using characteristics, by chance motivation, family factors and friend factors are associated with the inappropriate Internet behavior of high school students in Bangkok metropolitan.

1.4 Limitation of research

The population of this study was high school students who were studying in the school under the Commission on Higher Education and the school under the Office of the Basic Education Commission, Ministry of Education in Bangkok metropolitan. Result of this study might not generalizable to the other population group in difference provinces or vocational students.

1.5 Variables

1.5.1 Independent variables

- Personal Characteristic
 - Age
 - Sex
 - Grade
 - Field of the study
- Internet using Characteristics
 - Time of Internet using
 - Duration of using Internet per time
 - Computer placement at home
 - Internet activities

- Family factors
 - Parental Marital Status
 - Parental educational level
 - Parental occupation
 - Family income
 - Child rearing pattern
- Friend factors
 - Friend Characteristics
- By Chance motivation
 - E mail
 - Banner
 - Search engine
 - Soliciting from the stranger

1.5.2 Dependent variable

- The Inappropriate Internet behavior
 - Inappropriate chatting behavior
 - Inappropriate website using behavior
 - Inappropriate online game playing behavior
 - Long duration accessing to the Internet

1.6 Operational Definition

1.6.1 Inappropriate Internet behavior means Internet using behavior which deviated from the proper use of learning and educational entertainment. The internet falsification behavior includes chat rooms talking about sexuality or rude words, access to the pornographic website, inappropriate online game and casino on the Internet and long duration of accessing to Internet and online game.

1.6.1.1 Chatting by using rude words in chat room, talking about sexual and getting into chat room for the purpose of talking about sex at least 1 time in the last 12 months.

1.6.1.2 Getting to the pornographic website, searching for or seeing pornographic pictures, including obscenity messages or video clips file which show

sexual intercourse and sending the pornographic pictures or obscenity electronic mail to friends at least 1 time in the last 12 months.

1.6.1.3 Playing inappropriate Online Game, violence, aggressive games, can not control the duration of playing at least once in 12 months.

1.6.1.4 Excessive using the Internet mean spending more than 4 hours in front of the computer at a time.

1.6.2 Internet using characteristics are duration of using per day, The Internet using years, frequency, place, placement of computer at home,

1.6.2.1 Time of using the Internet means the frequency of Internet using per week.

1.6.3 The Internet activities such as

- Electronic mail
- Visiting website
- Chat Room, ICQ, MSN messenger, Pich, IRC, AOL
- Information Search
- Information Download (Data, game, software, music, video clip)
- Online games
- Shopping
- Webboard
- Etc.

1.6.4 Internet users mean the study samples that use Internet for at least 12 months before the interview.

1.6.5 By-Chance motivation means accidentally receiving of information which created the motivation to unintention inappropriate Internet behavior, such as getting to a website for entertainment with pornographic banner popup, searching for information but obscenity websites are linked, receive junk electronic mails with sexual contents and being induced to talk about sex in chat room.

1.6.6 Parents mean Father, Mother, Relative or Guardian who have authority as children welfare, who take care and look after the children behavior. The factors are parents' marital status, parents' education level, families' income and child rearing pattern. Child rearing pattern are divided into 2 groups:

Sensible parents mean parent who take care children with love and care, reasonable to listen and give children participation in family.

Sensitive parents mean parent who un-reasonable and not have time to look after their children.

1.6.7 Friends mean the colleagues in the same school and have cooperated in same activities. Friends are divided into 2 groups:

Good behavior friends are the friends who have good manner, pay good attention in the study, and give the right suggestions when the problems occurs.

Bad behavior friends are the friends who have following behavior: don't pay attention in the study, drinking alcohol, gambling or having aggressive behaviors and smoking.

1.7 Usefulness / Benefit of this study

1.7.1 Discover or finding of the Internet using characteristics of high school students in Bangkok metropolitans. Finding the factors associated with the inappropriate Internet behaviors of high school student in Bangkok metropolitans.

1.7.2 Finding out about the Information on risk factor of inappropriate Internet media that may cause aggressive behavior, social alienation and false sexual attitude.

1.7.3 Using results as background information for policy or strategic planning for appropriate media-using behavior among children and adolescents.

CHAPTER II

LITERATURE REVIEW

In this chapter, the theories, researches and knowledge about factors associated with the inappropriate Internet behavior were reviewed as follows;

- 2.1 Computer and Internet
- 2.2 Behavior and Communication
- 2.3 Related researches

2.1 Computer and Internet

Computer is the calculator in the kind of electronic equipment that can received processed, exchanged and restored data and showed the result using display equipment. (17-18)

Computer divides into 4 types by speed of information processing and size of memory storage, such as

1. Supercomputer is the high performance computer that can calculate mathematics at high speed of hundred millions commands per seconds. It is appropriate to use in complex computation such as photographic analysis form meteorology satellite or the resource explorer satellite, to forecast the weather, build chemical molecular model and analyze the complex building structure.

2. Mainframe Computer is the high performance computer but it is slower than Supercomputer, so that it is capable to work in ten million commands per seconds. It called Mainframe computer because it was the first computer on the Chassis base called mainframe. Mainframe computer is useful in engineering, science and business especially in work that use flows of data and informations. At present, mainframe computer is not popular among organizations because it is expensive, hard to use and microcomputer was developed equally high performance, which was competitive to mainframe computer. However mainframe computer is still used to deal

with large amount of data and information and to control many peripheral types of equipment.

3. Mini computer has the lower performance than mainframe computer. It works slower, less control of peripheral equipments. Although it is cheaper than mainframe computer and not use less personnel, this kind of computer is used in institutions, universities, industries and researches.

4. Microcomputer is the small size computer that is used by any person so the other name is Personal Computer. It is the popular kind of computer to use as personal or connecting to the network system. It comes in many types such as Personal desktop computer, Portable computer. This kind of computer makes the change to the world and develops in Information technology times. People in all age and sex can learn, search information and it's been a part of working condition at present.

2.1.1 Computer components

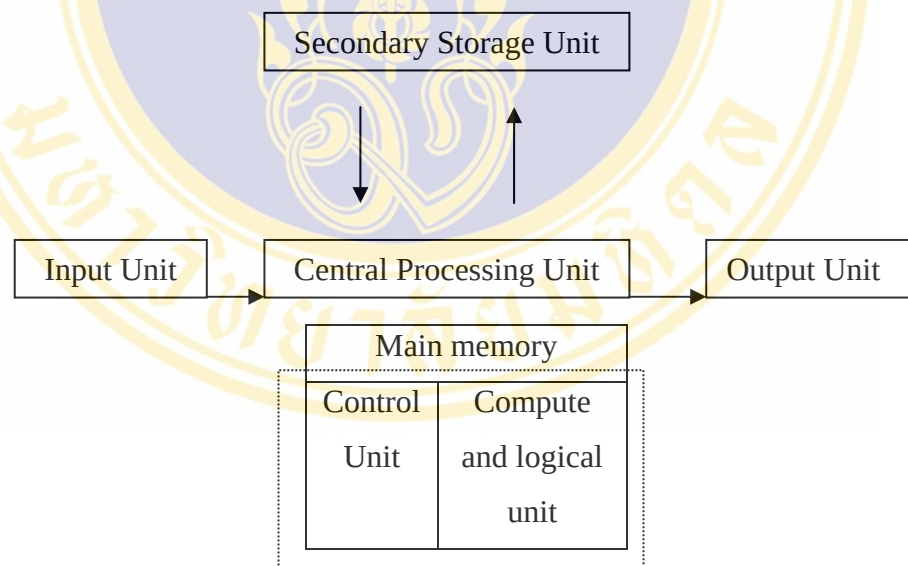


Figure 1 Computer working system (19)

A computer has 4 components.

- Input Unit is the device for receiving data or command such as keyboard, mouse and joystick.

- Central Processing Unit is the part of processing data or command to output. This part is working as the brain of computer called CPU (Central Processing Unit) or

Chip. The majority function of Chip is calculating, data or command processing and controlling other equipment in computer system.

- Output Unit is the part of showing result. There are many types of the output device such as monitor, printer and speaker.

- Secondary Storage Unit is the part of recording command, data and information by use the recording equipment, such as hard disk, floppy disk and CD-ROM.

In addition, computer system must consist of hardware (as mentioned above), Peopleware (such as programmer, systems analyst, computer engineer, operator, user) and software. (such as programs)

2.1.2 Conception about Internet (19-20)

Internet comes from the word “Inter Connection Network”. It is the computer network that joins many computers together and forms the computer system.

Internet is the extensive computer network system that is capable to connect and communicate among all computers around the world by the use of the standard Protocol. TCP/IP (Transmission Control Protocol/ Internet Protocol)

Internet system is like the web that covers around the world with billion nodes of connection. It can communicate through many pathways both direct and indirect. It may connect by pass the other node or the other pathway of the Internet communication, which called the non – dimension communication or the Cyberspace.

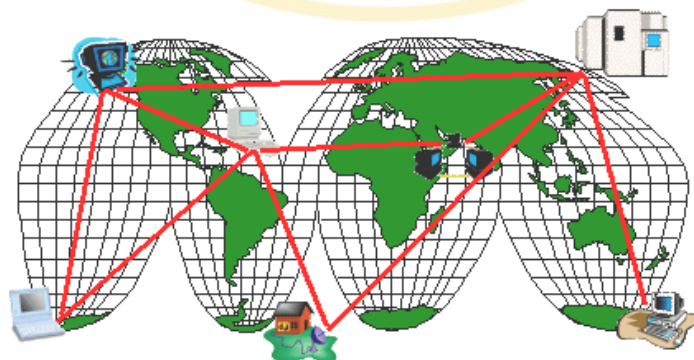


Figure 2 Internet network (21)

Source:<http://www.nectec.or.th/courseware/internet/internet-tech/0001.html>

Data Communication

Data communication is the components that is designed for sending data through the computer network by using one or more terminal equipment on the determined network. The data code is turned into the electronic signal and sent through the input media such as telephone and microwave. The receiver side consists of the Receiver equipment to compile and translate the data code.

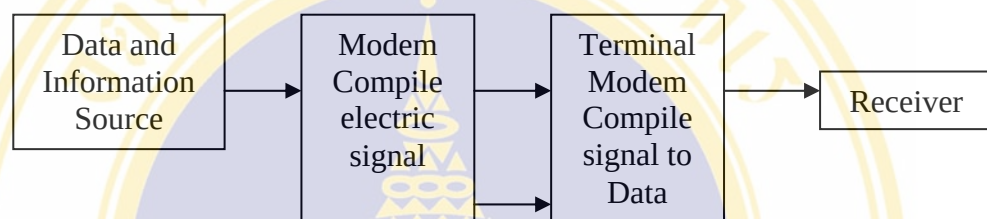


Figure 3 The composition of Data Communication system (19)

2.1.3 Internet activities (19-20)

1. Searching data and information on WWW- World Wide Web

It is the presentation format as electronic paper on the Internet, which has many types of format such as alphabet, text, picture, animation, graphic and etc.

European Particle Physics Labs or CERN (Conseil European pour la Recherche Nucleaire) developed the WWW (World Wide Web) in the end of 1989, and developed the human oriented language to serve as the document presentation or Web document which can be sent from computer server to another computer on WWW system called the language is HTML (Hyper Text Markup Language)

The prominent of WebPages information is that it can connect data from point to point in the same page. Ability to connect to other WebPages on network is called Hypertext which has higher quality than usual text that users WebPages can interact with their reading document instantaneously.

At present, the information publicized on Internet through media as WebPages or Website is highly popular. Not only in goods advertisement, has it included the medical information, learning, research document and others. Because people around the world can access the information and those information are in many kinds of format such text, picture, sound, animation and many presentation tactics.

Therefore the WWW system is growing up to the most popular service of the Internet network.

2. Electronic Mail (E-mail)

Electronic mail is the standard and oldest communication method on Internet. It can send text and/or to multimedia document including sounds and pictures around the world. Users who want to send and receive the electronic mail must have the service account called E-mail address which is a virtual address organized by an ISP or organizations.

3. FTP or File transfer protocol

FTP is the data exchanging service by uploading files form client to server and download any files from server to client. Not only FTP server member who can use this service but the outsider can also use by using login name as anonymous in some FTP service. FTP capable to use in Text Mode by using commands through UNIX system and in Graphic mode through Microsoft Windows such WinFTP Light, CuteFTP and Windows Commander Programs.

4. Online conversation service or Chat Room (IRC- Internet Relay Chat) or Talk

At present, this kind of Internet service is the most popular because Internet users can talk and response (both type and speak) to other persons on network instantaneously. Now, this service is applied to the VDO Conference by use the accessories equipment like Web Camera, Microphone and Speaker.

5. Bulletin Board System (BBS) or Webboard

BBS is the NEWS and information service, which disseminates through the electronic board on the network. BBS is divided into category information by groups of users who are interested in the same topic, called NEWS group such Art, Movie, Music, Sport, Program, etc.

6. Using the remote computer on network by telnet

This service is useful and efficient because some computer system and some programs require the high performance capability to deal with a large amount of data. TELNET can handle other remote computers as to compile program or work through command programs, which is sent to other workstations. For example a

person can send a set of command programs to run on Super computer which is located on other location.

7. Download Software and Information service

This service is like FTP but it serves on Website for the benefit of business, commercial, education or entertainment of clients.

8. Entertainment service

The service comes in forms of computer games, online games, TV and radio stations or entertainment magazines including online shopping such as book, computer program, audio CD, etc.

The Computer game or online game can be divided into 7 types. (22)

1) Action game is the game that requires the mutual interactions of the eyes and hand for responding the virtual event. It mostly emphasizes to fighting and fast response to carry out the game through out the story. Examples of this kind of games are half-life, Quake, Sirous Sam and Unreal.

2) Adventure game is the game that player must to think and respond for survival. The players have the role in game to solve the riddle and explore the game story. Most of this game uses the plot story to determine the event so the adventure game integrates the many skills. Examples of this type of games are Alone in the dark, Resident Evil and Tomb Raider.

3) Puzzle game or logical game is the game that uses thinking logical to solve the problem. It is unnecessary to have the plot story. Examples of this kind of games are such as Card game, Jigsaw, Minesweeper and Tertris.

4) Role-playing game (RPG) is the game that follows a plot story and has a lot of role players in user control and computer control. The feature of the game is the development of skill in the role player, which can make the different result of the game. Examples of this kind of game are Final Fantasy, Raknarok and Ultima.

5) Simulation game is the game that reproduces the real situation and the algorithm of the real conditions like the airplane driver game. This game is the model for practice in real situation such as Fleet Command, Jake Nicklaus, The Sims and World War II Fighter.

6) Sport game is the game that imitating sport condition such as football match or golf tournament. Examples are FIFA 2000 and NBA LIVE 2000

7) Strategy game is the game that uses planning and thinking skill to utilize the limited time and resource usefully. The player must use the critical thinking skill and planning skill to win the enemy. Examples are C&C: Red Alert, Pharaoh and Star Craft.

2.2 Behavior and Communication

2.2.1 Definition of Behavior

Behavior is the aggregate of the responses or reactions or movements made by an organism in any situation. Behavior attributes the way a person behaves toward other people, the action or reaction to something as a machine or substance. (24,27)

2.2.2 Behavioristics Reinforcement Theory (23-26)

Behavioristics reinforcement theory is the learning theory that is built by the mathematics method and the algebraic equation of learning and is built from the hypothesis in order to prove that hypothesis. This theory explains that human and animal behavior is originated from driving force such as hungry and desire. The reinforcement theory assumes that the reinforcing can reduce driving force. Therefore the meaning of theory is that organism know how to reduce driving force in the situation by integrate stimuli, and respond to make the organism satisfied with the situation. After that the same behavior will occur repeatedly in normal habit.

Hull's equation of reinforcement Theory

$${}_sE_r = {}_sH_r \times D \times K \times V$$

${}_sE_r$ = The tendency of response to the stimulation

${}_sH_r$ = The stable of habit that happen after reinforcing or when responding to the stimulation and rapidly reinforce to increase the stable habit and reduce driving force.

D = Driving force is the temporary organ status that happen when the body lack of something. It is the internal drive such as the need of water, air, temperature and sex.

Usually driving force have 2 functions;

- To act as stimulation such as hungry and thirsty. It is driving force that rapidly decreases when the reinforcement makes the organ to perceive response.

- To act as the stimulator or force that makes more behaviors with motivation.

K = The number of present while effect to the motivation for allure the response of external organ.

V = Stimulation power is the volume of stimuli that have mean or value. For example, the poor like to receive money more than the praise.

The meaning of this equation is the trend to respond the stimuli. It depends on the usual behavior or habit and receives of reinforcement, motivator and the stimulation power. Therefore the reinforcement is important in learning process. This theory believes that the reinforcement can reduce the driving force.

This theory can explain to the Internet behavior in terms of stable habit, driving force and stimuli. For examples if students receipt the stimulation from Internet source such as pornographic website, violence online game etc, they will learn and receipts the information and increase using the Internet in an inappropriate way.

2.2.3 Contiguous conditioning or contiguity theory (24)

According to Gunthrie, this theory believes that learning will begin when the both stimulation and respond occur in the same time. The word “Contiguity” means the stimuli are acting or responding at the same time. If the same stimuli occur again, there will be the connection between those stimuli and there will be such response forever until it has a new conditioning. Although that is the only one-time learning, it will be rapid response without repetition of practice.

1. Law of Recency means if the learning is happening, the last one action will still exist. When that situation occurs again, the person will act like the last action though it may be right or wrong. If the last action can't solve the problem, instead of finding the new act, the person will avoid problem. To avoid problem is not the accurate learning but it is practice for some purpose.

2. The breaking of habits is the methods to change behavior by increasing a little conditioning stimulus, or driving.

- Those stimuli repeatedly until beginning to try. it may stop the behavior but may resulting in a new behavior developed instead.

3. Giving the new stimuli instead of the old stimuli such as when a man is unhappy or has a problem, he will find way out by listening to the radio, reading the book. Reading and listening are the way to response. It is the use of new stimuli instead of the old ones.

4. The punishment may not be able to increase the response but it help in learning. The little punishment may cause the passive punished excite but still act in the same behavior. More punishment may stop the behavior but if still continuing punished, the punishment will function and driving force to stimulate until the tension is reducing.

This theory can explain in the inappropriate internet using habit. When teenager learn to use the Internet or play online game, they may increase the time and frequency of Internet using and play more online game.

2.2.4 Information processing model

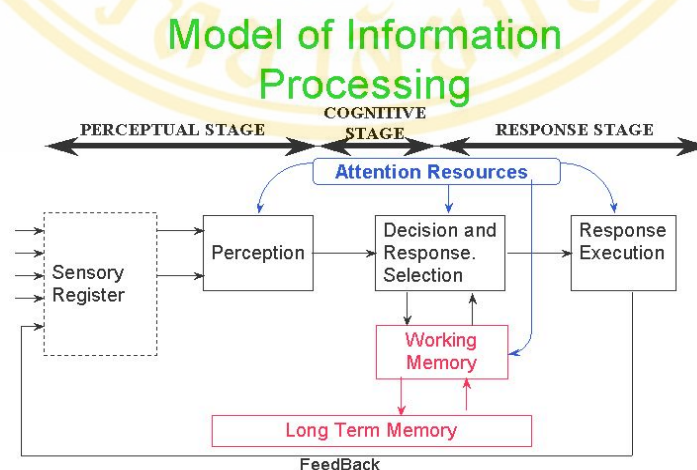


Figure 4 Model of information processing (28)

Source: <http://www.witc.ac.za/fac/arts/psychology/infoprocess.jpg>

Human have 2 types'of memories, they are the episodic memory or short, term memory and the semantic memory or long term memory. The episodic memory can remember the information or events in a short duration, and it will forget when times pass by, it has no effect on the human behavior. The Semantic memory happens when human learns when they received information, the processing of the information development can effect to the behavioral.

The information-processing concept of the communication behavior is the new psychological concept. This concept explains about the receipt of information from the sensory organ as eye, ear, tongue, nose and skin by sight, sound, taste, smell and touch. Immediately, after sensing information, the act of selective perception takes place within a Sensory Register. The information may then be stored, temporarily, in Working Memory or Short Term Memory. After existing in Working Memory for less than one second in the form of auditory, articulator, or visual data, the information is subject to rehearsal and may be moved to Long Term Storage. Semantic encoding takes place upon rehearsal of the information to be stored and the information is permanently stored in Long Term Memory and is subject to search and retrieval. The processes of search and retrieval are performed by the Response Generator, which can initiate recall directly from Long Term Memory or move the information into working or 'conscious' memory. The Response Generator then tells the Effects or muscles what action to take and the response can be emitted back to the environment. (29)

When human receive the information, it's the beginning of the perceptual stage and then going to cognitive stage. If the information is received regularly, there will be selection of the interesting information into the long term memory and will go to the response stage as behavior performance.

Therefore the information is processing as the learning process. If person receive the positive information, there will be the positive behavior. But if person receive the negative information, it may cause the negative behavior too.

2.2.5 Communication Theory

Human Communication is the process through which individuals in relationships, groups, organizations, and societies respond to and create messages to

the environment and to one another. Communication is a type of system that is a set of related objects communication systems and is an open system that comprised of

1. Source or sender or originator responsible for encoding and transmitting messages.
2. Message in the kind of gesturing or colloquial speech
3. Channel is the media between source and receiver which noise can interfere with communication
4. Receiver or destination or Audience to responsible for accepting, decoding and determining the meaning of messages. (27, 30-31)

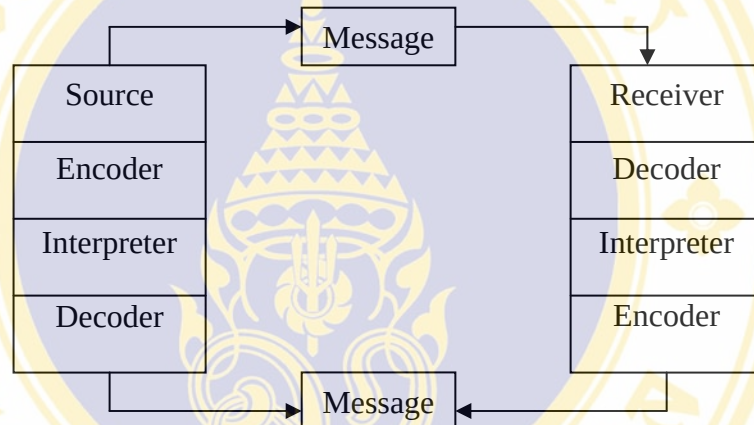


Figure 5 Schramm's Models. The process and effect of mass communication (27)

In figure 5, Schramm's models explain that when a receiver provided feedback, he or she became a source, thus eliminating the need for a distinction between the source and receiver. Each individual is viewed as both source and recipient of messages, and communication is viewed as circular rather than one way communication as the passing of information from one place to another. It includes explanations of the process of transmitting this information, the form and structure of the information, and the functions and effects of the information.

Electronic message communication is the modification of behavior in or more domains by exposure to patterns of sign and symbols. The communication system starts with the source component encoding the message prior to transmittal. The delivery through the communication channel to visual display may be interfaced

with the extraneous noise. The receiver of the communication must decode the electronic transmission and attach meaning to the message affecting the receptors and sensory registers through the processing of pattern recognition.

2.2.6 Adolescents' media diet model

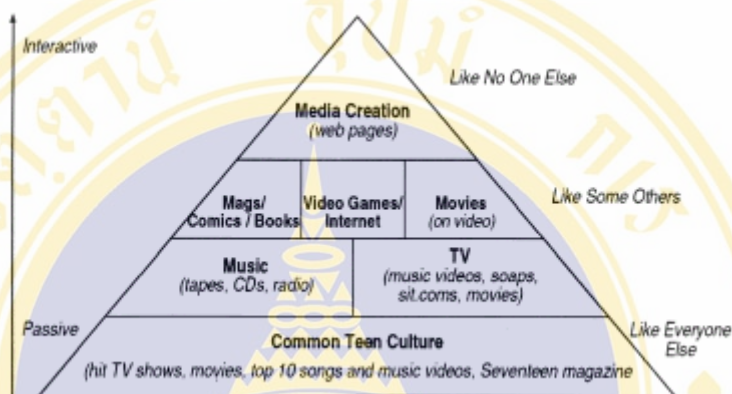


Figure 6 Adolescents' media diet pyramid. (32)

Source: From Brown JD: Adolescents' sexual media diets. J. Adolescent Health 27:35-40,2000)

This adolescents' media diet pyramid explains the pattern of adolescent's media consumption and how adolescent used media for different reasons and with different needs. Brown's media diet pyramid shows that there are medias that most teens are exposed to and that define the "teen culture" or "Common culture" like everyone else such as popular TV shows, movies, top 10 songs, music videos, tapes, CDs and radio. The bottom of pyramid contains the passive media diet. The next of pyramid level from the bottom, it passes to more interactive use and becomes narrower in terms of the numbers who use each type of media. The adolescents defined themselves with the recorded music they listen to, the magazine or comic, the video game or website they like. They will have the peer group of interesting in the same kind of medias. At the top of pyramid, it is the high level of interaction to media. The adolescents can express themselves like no one else by the creation of personal media such as personal video, music recordings or creating the own website to express who they are and what they be and can distribute this to their friend or post on the Internet.

Most of adolescents are the consumers in many types of media and the types of media can be accessed through a single portal. Through the Internet, one can receive or send video, music and e-mail, text messaging and a variety of entertainment and communications media but if adolescents use media in the negative way to access the information hazardous for their health such as tobacco, alcohol or sexuality. the media consumption may be the risks for their physical and psychological health.

2.3 Related Researches

2.3.1 Inappropriate Internet behavior

The Internet using behavior of adolescents in daily life is increasing, from the Nation Internet Usage Survey numbers of Internet users aged 10-19 was increased from 10.3 percent in 1999 to 15.6 percent in 2001. (3-5) From Internet using behavior of the public university student survey in Bangkok, it was found that the major reasons for using Internet were, for entertainment, searching information and finding new friends from chat rooms, web boards and electronic mails. (15) According to the previous research about the Internet using behavior in Thai adolescents it was found that about 30 percent of young Internet users had accessed to the pornographic websites, using rude words in chat rooms and 92 percent have been invited to talk about sex in chat room, (13) high school students were fond of the obscene pictures and send it through electronic mail. The other Internet activities which are popular among high school students are online game, chat room and commercial websites to download ringtone to mobile phone and sending short message to their friends. They use this on the average of 1-3 hours per time and 5 days or more per weeks. The prime time was 19.00 pm to 05.00 am. (9) Most of the high school students enjoy playing the online games at the Internet shop than at home. And at home they usually use Internet in private or excluded area without the control of parents. In a study about factors affected the Internet behavior, it was found that time of Internet using, family background and child rearing practices including friends affected the Internet falsified behavior such as access to the pornographic website, rude word, see the obscene video rate X, telling fake things on Internet and on changing the information. (10, 32-33)

2.3.1.1 Sexual content on the Internet

Several studies have shown that the Internet may be the new risky environment for the Sexually Transmitted Diseases. (34, 39, 41, 43-44) Because it is another venue for the initiation of sexual contact through chat rooms and other Internet study revealed that Internet facilitates communication of sexual desires the same as in person meeting for sexual contact. Searching the webs through search engine for sexual materials provides insight into sexual-related information-seeking behavior. According to the qualitative study, which analyzed 58,027 queries from a log of 1,025,910 excite web user queries revealed that sexual and non-sexual-related queries exhibited differences in session duration, query outcomes and search term choices. (51) Many sexually related terms were repeated frequently in queries, e.g., nude, sex, naked, etc. According to Mcfarlane's study to compare the risk of Sexually Transmitted Disease for persons who seek sex partner on the Internet, the study found that Internet sex seekers were more likely to be men and homosexuals. (39) Internet sex seekers reported more previous sexual transmitted disease, more partners, more anal sex and more sexual exposure to men who have sex with men and have sex partners known to be HIV positive than those not seeking sex via the Internet. A study of risk behaviors for Sexually Transmitted Diseases and HIV, found that young adults who seek sex partner online may be at significantly greater risk for sexually transmitted disease than their peers who do not seek sex partner online. (34) Young adults who had met sex partner online reported having traveled 100 miles or more to meet sex partner and some of them reported having been infected with a STD from an Internet partner. The prevalence of sexual media used among Chinese young adults in Hong Kong based from the study of 964 participant in population-based cross-sectional study, showed that the overall prevalence of ever use any type of sexual media was 57.5 percent, and men used sexual media more than women 70.3 VS 43.4 percent respectively. There were seven factors significantly predicted sexual media used included age, male gender, numbers of sexual partners, masturbation in the past week, being out of school, quarrel with family member in past 6 months and religion. (35)

In clinical case study of the hypersexual disorder who expose on the Internet pornography, the patients may be seen with a range of different behaviors, including compulsive used of printed or telephonic pornography with the impulsive

control disorder and mood disorder. Symptoms may severely affected family, social and occupational function and negative consequences included varieties of sexually transmitted diseases. (36)

The use of Internet for STD/HIV prevention is appeared from online surveys of sexual risk behavior in the year 2000, 61 percent of 4601 studied population who completed the survey questionnaires indicated that they would visit a STD/HIV prevention information website and 45 percent by electronic mail. (41) The data demonstrated that Internet may facilitate health promotion among men who have sex with men and may not be reached in a publicly funded STD prevention setting. One of the barriers of STD preventing on Internet is the pornography blocking software because the pornographic- blocking software cannot perfectly discriminate between pornographic and non-pornographic website. However 10 percent of health sites found by some search terms related to sexuality such as safe sex; condoms and homosexuality or gay were also blocked. At moderate settings the mean blocking rate was 5 percent for health information and 90 percent for pornography. At the most restrictive settings blocking was only slightly higher 91 percent. (41) But filtering software to block pornography will not necessary have a serious impact on access to general health Information because teenager whose access to a particular health information site will probably be able to easily find and unblocked site with similar information. People seeking sexual information were willing to spend time and efforts to create longer queries and to use more queries.

A study of pornographic media behavior of Thai adolescent in Bangkok metropolitan found that 64.9 percent of 410 participants ever used the sexual media were in the mean aged of 14-15 years old. The frequency of use of sexual media in term of magazine and pornographic cartoon was about 1-2 times per month but highly use in electronic media such as CD-ROMs and Internet more than 3 times per month. (46)

2.3.1.2 The online relationship in chat rooms

Using Internet technologies to cope with developmental stressors can be seen as an adaptive behavior. There are reasons to believe that replacing real-world relationships with online relationships may result in poorer quality relationships as well as a diminishing social capacity. Chat rooms are electronic venues on the Internet

where people can communicate with other Internet users, instead of oral communication that typically characterizes interaction in real situations, the typewritten word serves as the primary form of communication among people in chat rooms. (47,50) The development of online relationships is becoming increasingly popular. Internet has been described as a playground where people like to try on different personalities such as men lie about their status because women have a sexual preference for men who are more intelligent, ambitious and have higher socio-economic status. And women lie more than men about their physical appearance. Moreover, they swap genders that men pretend to be women in order to experience the type of behavior often shown to women. People who always used chat rooms for the online relationship and romance including the emotional support reported that the romantic relationship of chat room users contacting their partner most frequently by chat rooms or direct messaging less often by electronic mail or phone and daily communication with their partner. But the romantic relationship on Internet may be dishonest and misrepresented more than the romantic relationship in real life. (48-49)

Seventy five percent of Thai adolescents who used chat rooms or instant message program on Internet use chat room more than one times a week. 24 percent use private chat rooms to chat with another user on the Internet, 84 percent of the young chat room user has new friends on the Internet and 24 percent of those have ever met friends on Internet in faced contact. (13)

The content of chats may also turn to be a problem, children may be exposed to inappropriate language and ideas, such as explicit sexual talk, they may be encouraged to send photos of themselves, even indecent pictures, and may be sent obscene images. Also, they may come into contact with people whose intentions are dishonest. There were cases of young people being approached online by adults or adolescents, whose aims were to develop a relationship with them in the real world, a relationship that might end in criminal action such as rape.

The online relationship may cause the risk to contact with the stranger, hacker and criminal on the Internet. Liar about individual's information on chat room for safety reason is the way to avoid approaching by the stranger. However, if they continued habitually lie, the personality and habit in real life may be changed as well.

Or it may be that people who use chat room do not intend to use chat rooms as a regular form of communication, and instead use them for light entertainment where they can experiment with different roles and schemas. Alternatively these people may not feel comfortable to disclose. Nevertheless, with more exposure to chat rooms, those individuals might begin to become more honest and open about themselves.

2.3.1.3 Online game and Computer game

Most of Thai Internet users aged less than 20 year olds prefer to play online games and computer games more than other age groups. The online games became rapidly popular in Thailand, for example, the online game named “Raknarok”, had become the massive multiplayer online games which have over 600,000 Thai members including youth and adult because they can play the game 24 hours a days and 7 days a week. The Online game is like the virtual community, players can create the favor characteristics to enjoy the game and have the never-ending story to adventure that can cause the online game become an addiction. Player on game must collect the item that will increase the power and ability of the game and it may cause the criminal or bet in to the game and move to sell the item of game to payment in the real life. In some types of the game such as “Singirl”, it is the game that players will create the characteristics to attract the women, a player will win the game when those women in the game allow them to have sex with her. And the game characteristic is inappropriate behavior for youth about the sexuality and aggressive behavior. Several researches showed that online games and computer games may increase the aggressive behavior in to real life. (55-59) Adolescents who have social alienation and aggressive behavior may incline to use the violence media because it can help release their imagination. The exposure to violent media appears to produce direct effects in which children become more aggressive and / or developed more favorable attitudes about using aggression to resolve conflicts, desensitization to violence and to the feeling of victimization of other and beliefs that the world around them is mean and scary. The increased amount of video game play is correlated with poorer grades in academic achievement. (58)

The Internet using behavior might affect life style, the real life activities, physical activities and related to the psychological well being. A research

has found a negative impact of Internet use on psychological well being of young adults.(60) Likewise, The Kaiser Family foundation had conduct a survey on young Internet users who spent an average of 19 hours per week online and found that they reported feeling more isolated from society at present than before using the Internet.(62) Smith HY studed the Instant message program of the high school students found that students who always use the Instant message program were less to communicate with another friends in real life. (54) The less face-to-face communication may cause the risk of social isolation and social alienation. Youth who are alienation or depress may be more vulnerable to online exploitation by strangers in general risk for victimization. A study of Internet used among adolescents in Israle found that the Internet use can not displacing other social activities. (61) However, adolescents who are more socially isolated are more likely to be frequent Internet user. Robinson TN, studied about violence media and time of media used found that reducing time of television and game can reduce the aggressive behavior. (55)

The effect of Internet addiction or webaholic can be defined as an uncontrollable use of the Internet, including distress, functional impairment and psychiatric disorders. The warning signs of Internet addiction include the changing sleep patterns by staying on Internet until the early morning hours, having a hard time getting up in the morning, having difficulty concentrating in school or work. Young presented a definition of Internet addiction criteria for problematic Internet Used as followed.

1. Preoccupation with Internet
2. Need for longer amounts of time online
3. Repeated attempt to reduce Internet Use
4. Withdrawal when reducing Internet Use
5. Time management issues
6. Environmental distress (family, school, work, friends)
7. Deception around time spent online
8. Mood modification through Internet use. (16, 63-66)

From this definition, it is required that individuals meet five of eight criteria for Internet addiction in order to be labeled as an addict. The excessive Internet use is a benign problem in living that behaviors compensate for a lack of satisfaction

in other areas of life, and that behaviors lie within the scope of the ordinary person to correct. The Internet addiction can effect to the physiology, psychology and social characteristic. The effects related to the amount of high levels of Internets use have been associated with lowered time spent with other human being, lower communication and increased depression and loneliness.

2.3.3 Factor associated with the Internet behavior

2.3.3.1 Personal characteristic (age, sex, educational level)

Age

Internet activities and purpose of using the Internet were difference among younger and older adults. The survey of Internet use among young and older adults in relation to psychological well being found the age differences in psychological well being in some dimension of measurement such autonomy, environmental mastery, personal growth and purpose of life. The older adults scored higher than young adults. The individuals aged 21-55 years were more likely to receive the emotional support on chat room than younger people aged 17-20 years. Younger adolescents were more likely to be frequent Internet users than older adolescents. (60)

Sex

The effect of gender was significantly related to internet behaviors, males were more likely than females to be frequent Internet users. The survey of reading behavior in Thai youth 2003, in the topic about reading book on the Internet of children and youth, found the difference problem in male and female. 12.1 percent of female and 11.1 percent of male were more likely to read a book on the Internet and male were more frequency to read from the Internet than female. (67) The activity on the Internet in male and female were also different. Male were more likely to be exposed to violent movies and video game than female. (71) A study an observation of chat room behavior to observe the difference between male and female found that female also use the emotional icon more frequently than male and the emotional icon did not affect to the real emotion in male. (52) The study of liar in chat room found that women were more likely than men to give emotion support, Men were more likely to than women to lie, and were most to lie about their socio-

economic status. In contrast, women were more likely than men to lie for safety reasons. (49)

2.3.3.2 Internet using characteristics

Time of the Internet using

Martin and Schumacher (68) study about incidence and correlates of pathological internet use among college student found that only about 8 percent of their college students suffered severe negative outcomes such as trouble at work/school or missing social engagements from using the Internet, while these students did report spending significantly more time online than participants who either claimed limited problem behaviors or reported no pathological behavior at all. Students who had 4 or more of the 13 negative behaviors spent 8.5 hours online per week on the average, whereas participants with lesser problem behaviors spent 3.2 hours per week. Ferzetti P (69) found that students who use Internet more than 2-4 hours per day tended to have low grade point average. This study was the experimental program to reduce the time of using media in students in third and fourth grade compare with the schools, which have no media-reducing program. (55) The study found that students in school that has the media reducing program could reduce the aggressive behavior more than the school that did not have media reducing program. In the study of chat room behavior found that people who spend the least amount of time in chat rooms per week are more likely to tell lies. (49)

Placement of computer or television in home

The television in children's bedrooms is correlated with lower school performance. Children having television in their bedrooms watch television for an average 5 ½ hour more each week than children without television in their bedroom. (70) The graphic of computer monitors when children used for example, playing game or look at website was nearly the same as the display screen on television.

2.3.3.3 Family and child rearing

The characteristics of the Thai family gradually changed from extended type to nuclear family with drastically reduced in family size. The trend in increasing of nuclear family and non-traditional forms of family such as single-parents, separated-parents and childless families are obvious. The increasing of

divorce rate was the cause of changing family roles in socialization, cultural and value orientation. Thai families are now facing serious problem of family and domestic relationship. These problems mostly resulted in divorce, separate, extramarital relationship, financial problems, family violence and so on.

The family-related variables, which show statistically significant relationships with adolescent's self-esteem, were positive relationship with parents, closeness to parents, participation in various activities with parents, style of child rearing in terms of level of freedom to do things by themselves and whether adolescents were brought up by both parents. The level of education is the only non-familial variable in the study that showed statistically significant relationship with self-esteem of adolescents. The nature of family was important that could encourage emotional quotient. (72-76) The children from a strict family may have the falsified behavior by disobeying the social rule. Love and warmth, time-sharing and mutual communications in family can prevention the inappropriate behavior in children. Students who had conflict with their parent also have the problem in school performance. Chokamnuaichai B, found that the family's economic status, the level of education of the parents, the stability in the occupation of the parents, the relationship within the family and the parents' expectation on the education of the children were positively correlate with the educational achievement of the students. (77)

Many families' media habits could predict children's school performance. In the study of media consumption, it in family has been shown that the type of medias were related to a number of family variables such as the electronic and print media use, parental monitoring of children's media, parental consistency regarding rules for children's media use, parent's reports of observable media effects on their children and parent's knowledge about media. (70) Children in single parent homes watch more television, more movies, and listen more to the radio each day than children in two parents homes. High levels of Internet use have been associated with lowered time spent with other human beings, lower communication, and increased depression and loneliness.(70) Research on parental co-viewing and mediation of media messages had shown that both co-viewing and talking about media messages had the potential to be beneficial. (78) Parental supervision techniques such as requiring youth to ask permission before going online, have rules about the numbers of

hours spent online, having rules about things not to do online, checking the computer screen while youth are online, checking the history function and checking files or diskettes were not relate to solicitation risk. Family relation was associated with the sexual media use, youth who have less family relation may be the highly use of the sexual media. (38) The study of the familial control on mass media usage and Thai adolescents' psychological characteristics found that children who have the family support and reasonable rearing had the positive characteristic on mass media using.(79)

Adolescents who perceived their families to have higher income were more likely to be frequently on-line than respondent who perceived their families' incomes as below average. Children in low-income families watch more television, watch more movies, play more video games, listen to the radio and CDs more, read less and use the computer less than children in higher income families. Similar patterns are found for parental education level, such the lower the educational levels are correlated with higher electronic media used. (70)

Parents can set limits on the amount of media allowed, the types of content allowed or the context within which media consumption may take place. From the children at risk online survey found that 33 percent of the youths talked to their parent about negative experience they had but they usually preferred to talk to their friends instead and keep as a secrete. (13) 84 percent of youths have been given no guidelines or rules to use the Internet and 67 percent of youths have screening software installed on computer, but half of them said that they can easily by-pass it. Only 30 percent of children and youths perceive that their parents provided them with active support in their use of internet.

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Pornpotjaman P (80) found the effect of child rearing pattern on Internet use, children who have non-striction parents in opent time on television or game use more than 5 hours per day can be at risk of obesity in children.

2.3.3.4 Friends

The study of effect of friend in freshment students in Thailand foound that the characteristic of closed friend, process of thinking and making decision, procession of emotion, activities, attention and imitation of behavior had effected on Emotional Quotient (EQ) of the samples. In the study of the relationship with friends it was found that adolescents who had fewer close friends and fewer friends who were willing to listen to their problems were more likely to be frequent Internet users. (74, 81-82)

2.3.3.5 By chance motivation

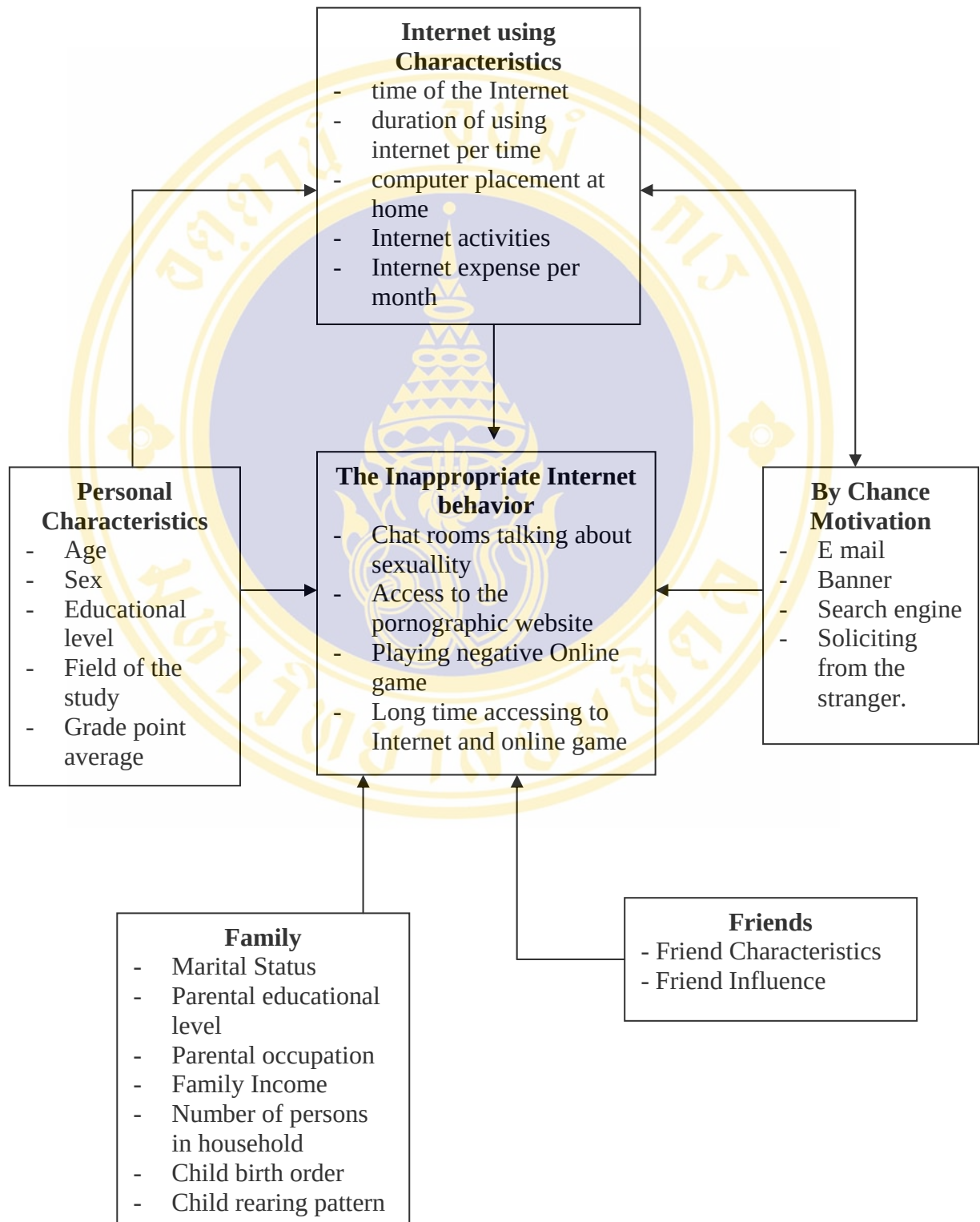
Online enticement, the use of the Internet to entice, invite, or persuade a child to meet for sexual acts or to help arrange such a meeting, is a serious offense. The Internet is an exciting new territory for many young people; however, stories from law-enforcement officials, caregivers, and young people themselves suggest that not every online adventure is a happy one. There are risks for children who use the Internet or online services. Teenagers are particularly at risk because they often use the computer unsupervised and are more likely than younger children to participate in online discussions regarding companionship, relationships, or sexual activity. A child might provide information or arrange a meeting that could risk his or her safety or the safety of other family members. Predators have used E-mail, instant messages, bulletin boards, and chat areas to gain a child's confidence and then arrange a face-to-face meeting. This sometimes leads to the child traveling to meet the person he or she is chatting with or the person traveling to meet the child. Sometimes the other party is an adult whose intention is to have sex with the child. Based on a study of 1,501 teens and preteens, approximately one in five received a sexual solicitation or approach over the Internet in 2001. (38) Less than 10 percent of these sexual solicitations were reported to authorities such as a law-enforcement agency, an Internet service provider, or a hotline. Most families do not know where to report Internet offenses. The unwanted exposure to sexual material occur when youth were not looking for or expecting sexual material but the material come up while doing

search online and surfing the world wide web, as well as material have appeared when a youth were open electronic mail or clicking on message link. 19 percent of youth that use the Internet regularly were the targets of unwanted sexual solicitation. 25 percent of the solicited youth reported high levels of distress after solicitation incidents.(13) Risk of distress was more common among the younger youth those who received aggressive solicitations.

According to Kalyanaraman (44), in an experimental study about by chance access to the pornographic website in web search engine, the researcher divided participants into 2 groups by searching condition. One group had the searching condition term in pornographic website and another group had the normal searching term condition. This study found that the group that had searching condition term in pornographic can found the pornographic website more than the normal searching term and feel negative with the pornographic website. But the group that had normal searching term condition found some the pornographic website too. (44)

In conclusion, the review of literature demonstrates that several factors were associated with the Internet behavior. Therefore, this study was interested in the association factors that can reduce risk of having inappropriate internet behavior among high school students.

2.4 Conceptual framework



CHAPTER III

MATERIAL AND METHODS

3.1 Research design

This was a Cross-sectional study to determine factors associated with the inappropriate Internet behavior of high school students in Bangkok metropolitan area.

3.2 Population and sample group

The population is high school students who study in Bangkok Metropolitan area. In this study we used the multistage random sampling to choose the sample group. The sampling processes were as follows

- Choose an academic area by simple random sampling. Bangkok metropolitan has 3 academic areas.
- The academic area and the sample academic area is area 2 was divided into 18 regions. Using simple random sampling. The Bangkok region was selected.
- There were 5 high schools in Bangkok region under the office of the Basic Education Commission and 1 high school under the Commission on Higher Education of the Ministry of Education.
- One school under the office of the Basic Education Commission was chosen by simple random sampling and the school under the Commission on Higher Education of the Ministry of Education was selected in order to compare the Internet behavior between both schools.
- The population of this study is 4,003 high school students in Satit Ramkhamhaeng School (Demonstration school) and Thepleela School who registered in first semester of academic 2004. From the total of 4,003 high school students, 1,926 students in Satit Ramkhamhaeng School were classified as 1,370 junior high school students and 707 senior high school students. 2,077 students in Thepleela School were classified as 1,176 junior high school students and 750 senior high school students.

3.2.1 Sample Size estimation

The Cross-sectional survey formula for sample size calculation is

$$n = \frac{Z_{\alpha/2}^2 NPQ}{Z_{\alpha/2}^2 PQ + Nd^2}$$

n = sample size

$Z_{\alpha/2}$ = Z score at the required significant level (α)

Q = $1 - P$

N = target population

d = maximum allowable error

α = Probability of error estimated from population

P = Proportion or Rate of population (from previous study, references sources)
high school student's Internet using rate which equal 20.8% (Summary of using information technology equipment 2003, Nation Statistic Organization, Ministry of information technology and communication (83))

d = maximum allowable error 10% from high school students Internet using rate

$$n = \frac{(1.96^2)(4003)(0.208)(1 - 0.208)}{(1.96^2)(0.208)(1 - 0.208) + (4003)(0.0208^2)}$$

$$n = 1071.29$$

3.2.2 Sampling

Selected of 1,071 students by Simple Random Sampling from Ramkhamhaeng Demonstration School and Thepleela School. About 515 students from Ramkhamhaeng Demonstration School is proportionately divided into 340 junior high school students and 175 senior high school students. The total number of 556 students from Thepleela School is divide into 339 junior high school students and 216 senior high school students.

3.3 Research Tools

A structured Questionnaires for collect personal data and a set of Guideline Questions for focus group discussion is constructed and was used as research tools. They are reviewed by academic professional was tested of validity, reliability before data collection by conducting the trials of 30 questionnaires in high school students at Vitiyawannalai school, Bangkok in December 2004.

3.3.1 Questionnaires

There are 4 parts in the Questionnaires

Part 1 Personal data consist of 5 questions on age, sex, educational level, field of the study and grade point average.

Part 2 Family status and family background consist of 9 questions on parent's marital status, parents' occupation, income, education level and number of persons in household. And 12 questions (in rating scale) on Child rearing in term of the rating scale are transformed into scores as follows control and encourage rearing or abandon and neglect rearing.

- | | |
|-----------------|---------|
| - Frequently | score 4 |
| - Occasionally | score 3 |
| - Seldom/hardly | score 2 |
| - Never | score 1 |

For negative question the answers are scored as

- | | |
|-------------------|---------|
| - Frequently | score 1 |
| - Occasionally | score 2 |
| - Seldom / hardly | score 3 |
| - Never | score 4 |

Part 3 Friends in school consist of 13 questions (in rating scale) on friend's characteristic and friends influence.

- Frequently score 4
- Occasionally score 3
- Seldom/hardly score 2
- Never score 1

For negative question the answers are scored as

- Frequently score 1
- Occasionally score 2
- Seldom / hardly score 3
- Never score 4

Part 4 Internet using characteristics and the inappropriate Internet behavior.

This part consist of 18 questions on the time of using Internet, The Internet using time until present, The Internet using frequency, Internet using place, The placement of computer at home, The Internet activities and Internet expense per month. The open questions ask about the game, website and chat room that they usually login to, including the pornographic website they'd found.

About The inappropriate Internet behavior, there are 3 major outcomes which include inappropriate chat room behavior, inappropriate website using behavior and inappropriate online game playing behavior that consist of 14 questions, and 4 questions for by chance motivation factors. If the students report seldom/hardly, occasionally or frequently, it would include that students have those behavior occur when they are using the Internet at least 1 time within 12 months.

By Chance motivation factor, the answers are scored as

- Frequently score 1
- Occasionally score 1
- Seldom/hardly score 1
- Never score 0

The inappropriate Internet behavior, the answers are scored as

- Frequently score 0
- Occasionally score 0
- Seldom/hardly score 0
- Never score 1

For negative question the answers are scored as

- Frequently score 1
- Occasionally score 1
- Seldom / hardly score 1
- Never score 0

The cut-point was determined based on distribution of scores by looked at mean of scoring factor, minimum and maximum score, and standard deviation. The cut point of score was under the standard deviation.

3.3.2 The Guideline Questions for Group discussion

There were 3-4 groups of discussion in each school which was 5-12 students per groups. The group discussion was covered junior and senior high school students in both sexes. To receive the truth and detail of information, students in each group should be friends and should know each others. The process of group discussion was as follows;

- Invited students to join in group discussion which including students who studied in different classroom and field of study.
- Introduced the objective of this study and asked permission for voice recording and note taking.
- Asked questions follow by the guideline questions.

The Guideline Questions for Group discussion was used to collect the qualitative data in the high schools students' Internet user in order to compare the result of Questionnaire with the result of group discussion.

The Guideline Question for group discussion consist of

- The Internet behavior of the high school students
- Online Game playing behavior
- Usefulness and Hazardous of the Internet
- The Inappropriate Internet Behavior
- Factor associated with the inappropriate Internet behavior
- Students suggestion

3.4 Data collection

1. Ramkhamhaeng demonstration school and Thepleela school principals were contacted to explain the study objectives and ask for permission.
2. Randomly selected classrooms in both junior high school and senior high school.
3. Ask for students to participate and explain the study objectives to students that this data only use in research and will be presented in groups, not individual.
4. Informed consent was signed under the supervision of school teachers. Information sheet would be attached to the Informed Consent and the researcher would make sure that the students understand the content on information sheet.
5. Data collection would be done between February to March 2005 by using questionnaires and focus group interview.

3.5 Variables

Dependent variable is the inappropriate Internet behavior (inappropriate chat room behavior, inappropriate website using behavior, inappropriate online game playing behavior and long duration accessing to the Internet)

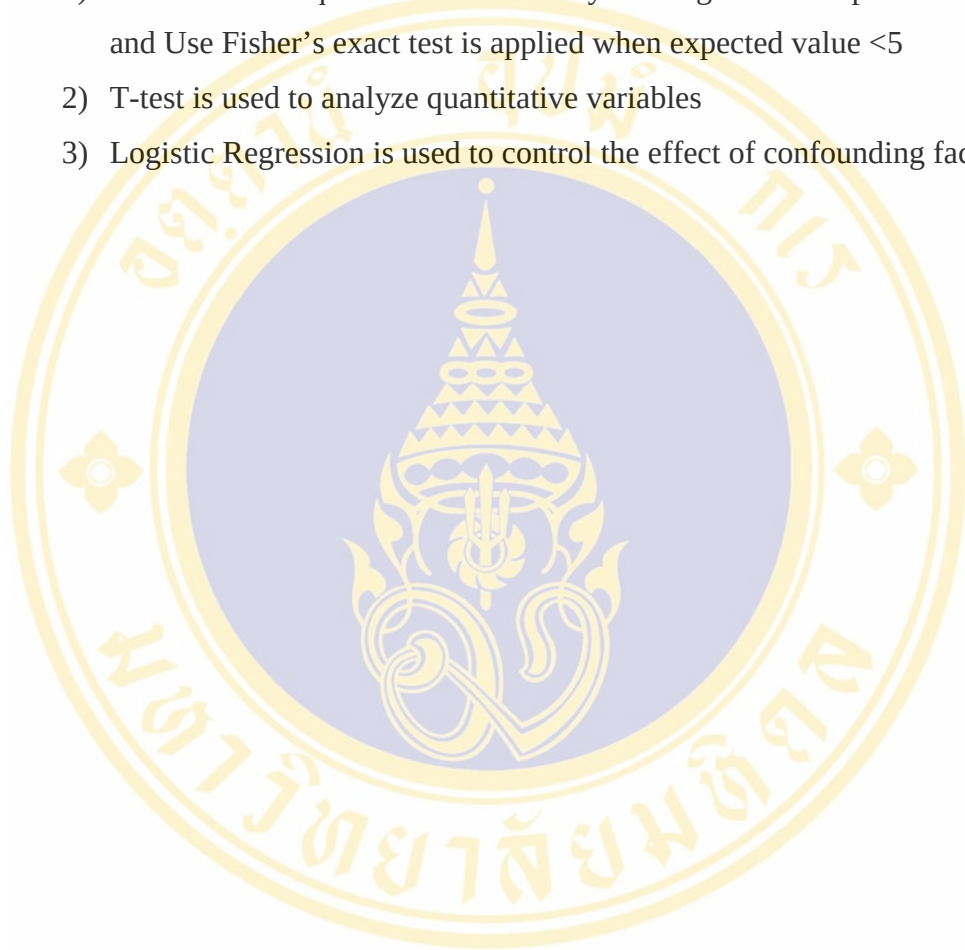
Independent variable is sex, age and education, Internet using characteristics, by chance motivation, family and friends.

3.6 Analysis

Descriptive analysis such as Rate, Proportion, Mean and Standard deviation for Personal data and Characteristics of study sample

Statistical analysis

- 1) Pearson's chi square is used to analyze categorical independent variables and Use Fisher's exact test is applied when expected value <5
- 2) T-test is used to analyze quantitative variables
- 3) Logistic Regression is used to control the effect of confounding factors



CHAPTER IV

RESULTS

In this cross-sectional study, there were 1,030 participating subjects from the sample population of 1,071. Questionnaires were distributed to all high school students grade 7 to grade 12 during February to March 2005 at Ramkhamhaeng Demonstration School and Thepleela School. There were 986 completed questionnaires which gave response rate of 92.16 percent. The results were divided in 4 parts, as follows

4.1 Description of general characteristics of study samples this included personal characteristics factors, family factors, friend factors, Internet using characteristics factors, and by chance motivation factors.

4.2 Description of the inappropriate Internet behavior which included the chatting behavior, accessing to the website, online game playing and excessive accessing to the Internet.

4.3 Univariate analysis of the association between personal characteristics, family factors, friend factors, Internet using characteristic factors and by chance motivation factors with the inappropriate Internet behavior by using chi-square test, odds ratio and 95% of confidence interval. In this part, the results were divided in 4 parts according to each type of the inappropriate internet behavior.

4.4 Multivariate analysis of the association between personal characteristics, Internet using characteristics and by chance motivation factors with the inappropriate Internet behavior.

4.1 Description of general characteristics of study samples

Personal Characteristics factors

The personal characteristics of study samples include sex, age, school, and level of education, field of study, students' grade in the previous semester and students' GPA.

The majority of high school student was female (55.27%). The mean of age was 14.5 ± 1.71 years and the age ranged from 11 to 19 years. The data was collected from students in Ramkhamhaeng demonstration school (50.41%) and Thepleela school (49.59%) which included mostly junior high school (grade 7 – grade 9) 68.66%. Most of students have studied in field of Science-Mathematic (42.36%). The mean of grade average at last semester was 2.87 ± 0.71 and average GPA (grade point average) was 3.01 ± 0.67 . (Table 2)

Table 2 Number and Percentage of general characteristic of study samples

General Characteristics	Number	Percentage
Sex	986	100
Male	441	44.73
Female	545	55.27
Age Groups	986	100
10-14 years	577	58.52
15-19 years	409	41.48
Mean $\pm$ S.D. (14.5 ± 1.716) , Max =19, Min = 11		
School	986	100
Ramkhamhaeng Demonstration School	497	50.41
Thepleela School	489	49.59
Level of Education	986	100
Junior high school (grade 7 – grade 9)	677	68.66
Senior high school (grade 10 – grade 12)	309	31.34

Table 2 Number and Percentage of general characteristic of study samples
(Continued)

General Characteristics	Number	Percentage
Field of Study	713	100
Science – Math	302	42.36
Art – Math	149	20.9
Thai – Social	79	11.08
Students' grade at last semester	528	100
Less than 2.00	81	15.34
2.01-3.00	235	44.51
3.01-4.00	212	40.15
Mean $\pm$ S.D. (2.87 $\pm$ 0.71), Min=0.47, Max = 4.00		
Students' Grade Point Average (GPA)	277	100
less than 2.00	35	12.64
2.01-3.00	113	40.79
3.01-4.00	129	46.57
Mean $\pm$ S.D. (3.01 $\pm$ 0.67), Min=1.00, Max = 4.00		

Family Characteristics factors

Family Characteristics of the studied population (sampled population) include parental marital status, child birth order, number of sisters and brothers, parent's occupation, parent's education, parent's income, the relationship with family members and child rearing pattern. (Table 3)

For parental marital status, more than half of student's parents were living together (81.51%). Most of students were first order of child birth (58.11%) and half of them have 2 brothers or sisters. Both fathers and mothers have been working in commercial business or doing their own business (fathers 35.43%, mothers 32.14%) and the majority of them had bachelor degree level of education (fathers 28.02%, mothers 30.96%). The median income per month of father's was 15,000 baht which was higher than mothers' income (10,000 baht per month) and income range from 1,000 to 500,000 baht. The median of students' allowance per month was 2,000 baht and majority of students received 1,000 – 4,999 baht per month from their parents.

Students often talk to both fathers and mothers (39.43%) and prefer to talk to only mother 30.64%. In addition, Most of students have been living with 1 – 5 family members (76.82%) which included fathers, mother, and their sisters or brothers.

Table 3 Number and Percentage of Family Characteristics

Family Characteristics	Number	Percent
Parental marital status	986	100
Father and Mother live together	804	81.54
Divorce	98	9.94
Father died	40	4.06
Mother died	9	0.91
Both died	5	0.51
Separated	30	3.04
Birth order	986	100
first child	573	58.11
second child	290	29.41
third-seventh child	123	12.47
Number of sisters and brothers (include students)	986	100
1	206	20.89
2	493	50.00
more than 2	287	29.11
Mean±S.D. (2.23±1.05),Min=1, Max=9		
Father's occupation	971	100
government/state enterprise	183	18.85
public sector	97	9.99
commerce/own business	344	35.43
Employee	288	29.66
unemployed/house husband	11	1.13
Deceased	42	4.33
Other	6	0.62

Table 3 Number and Percentage of Family Characteristics (Continued)

Family Characteristics	Number	Percent
Father's educational level	928	100
primary school	210	22.63
junior high school/vocational certificate	119	12.82
senior high school/vocational diploma	240	25.86
bachelor degree	260	28.02
higher than bachelor	99	10.67
Mother's occupation	980	100
government/semi	123	12.55
public sector	87	8.88
commerce/own business	315	32.14
general worker	189	19.29
unemployed/house husband	248	25.31
Deceased	13	1.33
Other	5	0.51
Mother's educational level	940	100
primary school	274	29.15
junior high school/certificate	110	11.7
senior high school/diploma	206	21.91
bachelor degree	291	30.96
higher than bachelor	59	6.28
Father's income per month (Baht)	701	100
1,000-4,999	36	5.14
5,000-9,999	157	22.4
10,000-24,999	263	37.52
25,000-49,999	123	17.55
>50,000	122	17.4
Mean±S.D. (28,952.1±43,636), Median = 15,000		
Min=1,000, Max=500,000		

Table 3 Number and Percentage of Family Characteristics (Continued)

Family Characteristics	Number	Percent
Mother's income per month (Baht)	643	100
1,000-4,999	84	13.25
5,000-9,999	155	24.45
10,000-24,999	247	38.96
25,000-49,999	96	15.14
>50,000	52	8.2
Mean±S.D. (20,121±33,080.7),Median = 10,000 Min=1,000, Max=500,000		
Students' allowance per month (Baht)	771	100
less than999	63	8.17
1,000-4,999	663	85.99
5,000-9,999	30	3.89
10,000-24,999	14	1.82
>25000	1	0.13
Mean±S.D. (2,419.88±2,491.24),Median = 2,000 Min=500, Max=50,000		
Family members who students often talked to	979	100
father	53	5.41
mother	300	30.64
father and mother	386	39.43
sister/brother	149	15.22
grand parent	18	1.84
uncle/aunt	30	3.06
Other	43	4.39
Number of family member who students were living with	975	100
1-5	749	76.82
6-10	200	20.51
more than 11	26	2.67
Mean±S.D. (4.74±2.21),Min=1, Max=18		

Table 3 Number and Percentage of Family Characteristics (Continued)

Family Characteristics	Number	Percent
Family members who students were living with (multiple response)		
Father	750	76.06
Mother	825	83.67
grand parent of father	88	8.92
father's brothers or sisters	105	10.65
grand parent of mother	113	11.46
mother's brothers or sisters	173	17.55
brother or sister	669	67.85
other (maid, cousin)	37	3.75

Scoring Factors

Child rearing pattern and friend factors were analyzed in rating scales. The reliability coefficient (alpha) from trial in 30 questionnaires about child rearing pattern was 0.8012 and friend behavior was 0.8424.

Child rearing pattern

The mean of child rearing pattern score was 61.55 ± 7.56 , the scores range from 31 to 79. The majority of students were living with sensible parent (93.41%) (Table 4) Sensible parents was defined as parents who take care student with love and care, allow children to make decision on their own, participation in family activity. On the other hand sensitive parents was defined as parents who were not available at home, not encourage children when they did something wrong and not reasonable. (Table 1 - 2 appendix A)

Friend Factors

The majority of students have been influenced by their friends (93.41%) and the mean of friend influence score was 30.96 ± 3.62 . Friends influence was defined as students who always follow by their friend when making decision or doing activities. On the other hand students who didn't have friends influence was defined as students

who can make decision on their own, not follow their friends. (Table 3-4 Appendix A) In friend behaviors factors, most students had good behavior friends (83.87%) which average score at 47.59 ± 6.48 . (Table 4). Good behavior friends was define as students who always intended to study, pay respect to teachers/parents, help students when they had problem and using the spare time fruitfully where as bad behavior friends was students who gamble ,go to pub and bar did not intention to studied (Table 5-6 Appendix A)

Table 4 Number and Percentage of Scoring Factors

Family Factor	Number	Percentage
Child rearing pattern	986	100
sensible parent (score ≤ 50)	921	93.41
sensitive parent (score more than 50)	65	6.59
Mean $\pm$ S.D. (61.55 ± 7.56), Min =31, Max=79		
Friend Factors	Number	Percentage
Friend Influence	986	100
non-influence (score ≤ 25)	65	6.59
influence (score more than 25)	921	93.41
Mean $\pm$ S.D. (30.96 ± 3.62), Min=18, Max=44		
Friend behavior	986	100
good behavior (score ≤ 40)	827	83.87
bad behavior (score more than 40)	159	16.13
Mean $\pm$ S.D. (47.59 ± 6.48), Min=19, Max=60		

Internet using characteristics

78.44% of students started using the Internet at age 10 – 14 years old and the average age at first using the Internet was 11.08 ± 2.02 years old. More than half of them have used the Internet for 1 to 3 years (55.24%) and nearly half of them (44.76%) have used the Internet for more than 4 years. The mean number of years of using the Internet was 3.52 ± 1.80 years. In addition, the majority of students used the Internet less than 3 hours per time (77.47%) and the number of hours ranged from 30

minutes to 30 hours with the average hours of using the Internet 3.01 ± 2.67 per time. 76.24% used the Internet 1 – 5 times per weeks and 4.29 ± 3.93 times per weeks on average. Furthermore, half of them used the Internet at time of 16.00 – 20.00 hr (50.61%) whereas, the time which students least used the Internets was at 04.00 – 08.00 hr (2.43%)

Moreover, the first person who suggested students to use the Internet was friends (35.5%), teachers (20.18%) and self (19.17%). Most students used the Internet at home (63.89%), the Internet café (37.63%) and school (26.77%). For students who used the Internet at home, 60.53% of them placed their computers in living room and 31.76% in their bed room.

In terms of the Internet activities, the most popular activities on the Internet was the access to entertainment websites (65.92%) and the download of stuffs from the Internet such as programs, songs and ring tones (63.08%). Search engine, chat room, online game and electronic mail were the popular activities on the Internet which accounted 56.29%, 52.33%, 52.03% and 48.28 respectively. On the other hand, using the remote login and shopping was less popular among students. In terms of the Internet expense, students paid about 200 – 500 baht per month for the Internet services provider (31.16%) and 26.24% of students who had played online game paid for online game less than 100 baht per month and 18.65% paid 200 - 500 baht per month. Moreover, when students had problem on the Internet, for example, met stranger or visited to pornographic websites, most of them consulted with their friends (39.23%) and their parents (28.51%) whereas 22.27% didn't consult to anybody. Students reported the health problem which affect from the Internet were about eyesore, stiffness and sleeplessness. (Table 5)

Table 5 The Internet using behavior

Internet using behavior	Number	Percent
Age at first using the Internet	937	100
5-9 years	153	16.33
10-14 years	735	78.44
15-19 years	49	5.23
Mean±S.D. (11.08±2.02),Min=5,Max=17		
Duration of the Internet using	907	100
1-3 years	501	55.24
more than 4 years	406	44.76
Mean±S.D. (3.52±1.80),Min=1,Max=11		
Number of hours using the Internet per time	972	100
< 2 hours	229	23.56
2 – 4 hours	524	53.91
more than 4 hours	219	22.53
Mean±S.D. (3.01±2.67),Min=0.5,Max=30		
Times using the Internet per week (time)	951	100
1 – 5	725	76.24
6 – 10	190	19.98
more than 10	36	3.79
Mean±S.D. (4.29±3.93),Min=1,Max=48		
Time using the Internet most frequently (multiple response)		
8.00 - 12.00 am	163	16.53
12.00-4.00 pm	369	37.42
4.00-8.00 pm	499	50.61
8.00-12.00 pm	327	33.16
00.00-04.00 am	42	4.26
04.00-08.00 am	24	2.43
The first person who invited students to use the Internet	986	100
father,mother/parent	91	9.23
teachers	199	20.18

Table 5 The Internet using behavior (Continued)

Internet using behavior	Number	Percent
friends	350	35.5
brother/sister	122	12.37
cousin	32	3.25
The first person who invited students to use the Internet		
self	189	19.17
other	3	0.3
Place of using the Internet. (multiple response)		
home	630	63.89
school	264	26.77
relative's house	65	6.59
the Internet café	371	37.63
parent's office	10	1.01
Computer placement		
(for students who answer using at home)	636	100
living room	385	60.53
private room (bed room)	202	31.76
parent's room	49	7.7
The Internet activities (multiple response)		
search engine	555	56.29
remote login	70	7.1
online game	516	52.33
chat room / instant message programs	513	52.03
electronic mail	476	48.28
access to Website for entertainment	650	65.92
download (programs,song,ringtone)	622	63.08
Shopping	60	6.09
other (Online Diary,Webboard,NEWS)	12	1.22

Table 5 The Internet using behavior (Continued)

Internet using behavior	Number	Percent
The Internet expense per month	674	100
less than 100 Baht	171	25.37
100-200 Baht	101	14.99
200-500 Baht	210	31.16
more than 500 Baht	192	28.49
Mean±S.D. (432.78±495.6),Min=10,Max=5,000	674	100
When you have problem from the Internet (e.g. Stranger, Pornographic Website),who'll you consult with	691	100
father, mother/parent	274	28.51
teacher	23	2.39
sister/brother	61	6.35
friends	377	39.23
cousin	12	1.25
don't consult anybody	214	22.27
Had you ever play online games?	986	100
no	379	38.44
yes	607	61.56
How much money do you pay for online games per month?	606	100
less than 100 Baht	159	26.24
100-200 Baht	157	25.91
200-500 Baht	113	18.65
more than 500 Baht	79	13.04
free	98	16.17
How do you think about using the Internet could affect Health? (multiple response)		
eye sore	772	78.3
stiffness	470	47.67
physical inactivity	243	24.65

Table 5 The Internet using behavior (Continued)

Internet using behavior	Number	Percent
change eating habit (not on time)	382	38.74
to be delirium	245	24.95
sleeplessness	467	47.36
have problem in studying	318	32.25
no effect on health	134	13.59
other (addict, fat, headache, back pain)	35	3.55

By chance motivation factors

In term of by chance motivation on the Internet, more than half of students (60.85%) reported that they accidentally found the pornographic websites via using search engine at least once in the past 12 months. 30.76% of them have been persuaded by stranger on the Internet to chat about sex at least once in the past 12 months whereas, 60.24% of them never chat about sex with strangers. 55.98% of students have found advertisement banners which persuaded to visit the pornographic websites and 37.22% of them have received electronic mails with pornographic content. (Table 6)

Table 6 Number and percentage of by chance motivation factors.

By chance motivation	Number	Percentage
Accidentally found pornographic website via		
using search engine	986	100
never	386	39.15
at least once	600	60.85
Ever persuaded by stranger on the Internet to		
chat about sex	986	100
never	594	60.24
at least once	392	39.76
Ever found the advertisement banner which		
persuaded to visit the pornographic website	986	100
never	434	44.02
at least once	552	55.98
Ever received e-mail which had pornographic		
content	986	100
never	619	62.78
at least once	367	37.22

4.2 Description of the inappropriate Internet behavior

Chatting Behavior

27.28% of students used chat room or instant message program frequently and 24.14% of students reported that they occasionally make friends with stranger via chat room. In addition, 7.61% of them ever made appointment with stranger who they chatted with; 24.54% of them occasionally told a lie for fun and some of them occasionally chatted in rude words (9.33%). On the other hand, 44.83% of students reported that they were always careful when giving personal information to strangers and 30.93% of students told a lie for safety reason. (Table 7. appendix) Overall score of chatting behavior showed that 56.19% of students had negative chat and 43.81% of them had positive chat. (Table 7)

Using website (www) behavior

39.55% of students liked to search some useful information on the Internet frequently and majority of them never intentionally visited pornographic websites (66.02%). In contrast, some of them intentionally visited pornographic sites (7.30%), sent pornographic content to their friends via email (6.49%), looked at those sites before closing (14.40%) and revisited again (7.51%) occasionally. Furthermore, most of them never had the Internet filter program installed on their computer (63.59%), didn't have a junk mail filter in their email inbox (33.87%), use the Internet alone frequently (29.92%) and never told their parents when they had problem on the Internet (42.70%) (Table 8. appendix). The score of using website behavior showed that half of students have negative using behavior (51.01%) (Table. 7)

Online game behavior

27.59% of students reported that they played online games frequently and 22.52% of them like to play online games which can determine the role-play in each character (RPG-Role Play Game). In addition, 17.65% of students played violence fighting game occasionally whereas 31.64% reported that they can control the time when play online game. (Table 9. appendix) The score of online game playing behavior showed that half of students had positive playing behavior (50.71%) (Table 7)

Long duration in accessing to the Internet

Majority of students were using the Internet less than 3 hours per visit (77.47%) however, 22.53% of them using the Internet more than 4 hours. (Table 7)

Table 7 Number and percentage of the Internet behavior score

The Internet Behavior	Number	Percentage
Chatting Behavior	986	100
positive chat (score $\leq$ 2)	432	43.81
negative chat (score $>$ 2)	554	56.19
Mean $\pm$ S.D. (2.81 $\pm$ 1.32),Min=0,Max=6		
Using website (www) behavior	986	100
positive using website (score $\leq$ 2)	483	48.99
negative using website(score $>$ 2)	503	51.01
Mean $\pm$ S.D. (2.89 $\pm$ 1.92),Min=0,Max=8		
Online game behavior	986	100
positive playing online game (score $\leq$ 1.85)	500	50.71
negative playing online game (score $>$ 1.85)	486	49.29
Mean $\pm$ S.D.(1.86 $\pm$ 1.44),Min=0,Max=5		
Number of hours using the Internet per time	972	100
$\leq$ 3 hours	753	77.47
more than 3 hours	219	22.53
Mean $\pm$ S.D. (3.01 $\pm$ 2.67),Min=0.5,Max=30		

4.3 Univariate analysis of the relationship between personal characteristics, family factors, friend factors, Internet using characteristics and by chance motivation factors with the inappropriate Internet behavior.

4.3.1 Chatting behavior

1) The association between personal characteristics and inappropriate chatting behavior

The results from univariate analysis showed significant association in sex, field of study, student's grade and student's GPA. Male students had 2.15 times of having negative chat behavior than female students (OR=2.15, 95%CI = 1.65 – 2.81). Students who studied in field of linguistic (OR=1.67, 95%CI=1.15-2.43) and Thai-Social (OR=1.85, 95%CI = 1.10-3.08) had more negative chat behavior. Students who

got grade less than 2.00 (OR= 2.01, 95% CI = 1.18 – 3.40) and students who got grade 2.01 – 3.00 (OR=1.68, 95% CI= 1.15 – 2.44) during last semester significantly had negative chatting behavior. Students who got GPA less than 2.00 had more negative chat (OR=2.87, 95%CI = 1.25 – 6.59) than students with GPA higher than 2.00 (Table 8)

Table 8 Univariate analysis of the relationship between personal characteristics and chatting behavior

Factor	Total	Negative Chat		Positive Chat		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Sex								
male	411	293	66.44	148	33.56	2.15	1.65-2.81	<0.001
female	545	261	47.89	284	52.11	1.00		
Age Groups								
10-14 years	409	225	55.01	184	44.99	0.92	0.71-1.18	0.532
15-19 years	577	329	57.02	248	42.98	1.00		
Level of Education								
junior high school	677	388	57.31	289	42.69	1.16	0.88-1.52	0.292
senior high school	309	166	53.72	143	46.28	1.00		
Field of Study								
science - math	302	150	49.67	152	50.33	1.00		
art – math	149	76	51.01	73	48.99	1.05	0.71-1.56	0.790
linguistic	183	144	62.30	69	37.70	1.67	1.15-2.43	0.007
thai - social	79	51	64.56	28	35.44	1.85	1.10-3.08	0.018
Students' grade at last Semester								
less than 2.00	81	52	64.20	29	35.80	2.01	1.18-3.40	0.010
2.01-3.00	235	141	60.00	94	40.00	1.68	1.15-2.44	0.007
3.01-4.00	212	100	47.17	112	52.83	1.00		
Students' Grade Point Average (GPA)								
less than 2.00	35	25	71.43	10	28.57	2.87	1.25-6.59	0.009
2.01-3.00	113	63	55.75	50	44.25	1.45	0.87-2.41	0.152
3.01-4.00	129	60	46.51	69	53.49	1.00		

2) The association between family factors and inappropriate chatting behavior

There was no association between family factors and inappropriate chatting behavior. (Table 9)

Table 9 Univariate analysis of the relationship between family factors and chatting behavior

Factor	Total	Negative Chat		Positive Chat		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Parental marital status								
father and mother live together	804	450	55.97	354	44.03	1.00		
divorce / separated	128	76	59.38	52	40.63	1.15	0.78-1.67	0.471
parent died	54	28	51.85	26	48.15	0.84	0.48-1.47	0.556
Child order								
first child	573	313	54.62	260	45.38	1.01	0.68-1.48	0.975
second child	290	174	60.00	116	40.00	1.25	0.82-1.92	0.298
third-seventh child	123	67	54.47	56	45.53	1.00		
Number of sisters and brothers (include students)								
1	206	113	54.85	93	45.15	1.00		
2	493	272	55.17	221	44.83	1.01	0.73-1.40	0.939
more than 3	287	169	58.89	118	41.11	1.18	0.82-1.69	0.373
Father's occupation								
government/state enterprise	183	104	56.83	79	43.17	1.00		
public sector	97	53	54.64	44	45.36	0.91	0.56-1.50	0.726
commerce/own business	344	178	51.74	166	48.26	0.81	0.56-1.17	0.266
employee	288	174	60.42	144	39.58	1.16	0.79-1.69	0.441
unemploy/house husband	11	6	54.55	5	45.45	0.91	0.27-3.09	0.882
Father's educational level								
primary school	210	128	60.95	82	39.05	0.89	0.54-1.46	0.651
junior high school/vocational certificate	119	69	57.98	50	42.02	0.79	0.45-1.36	0.396

Table 9 Univariate analysis of the relationship between family factors and chatting behavior
(Continued)

Factor	Total	Negative Chat		Positive Chat		OR	95%CI	p-value
		Number	Percent	Number	Percent			
senior high school/vocational diploma	240	121	50.42	119	49.58	0.58	0.35-0.94	0.027
bachelor degree higher than bachelor	260	138	53.08	122	46.92	0.64	0.40-1.04	0.072
Mother's occupation	99	63	63.64	36	36.36	1.00		
government/semi public sector	123	70	56.91	53	43.09	1.00		
commerce/own business	87	56	64.37	31	35.63	1.36	0.77-2.41	0.278
general worker	315	167	53.02	148	46.98	0.85	0.56-1.30	0.463
unemploy/house wife	189	118	62.43	71	37.57	1.26	0.79-2.00	0.331
Mother's educational level	248	131	52.82	117	47.18	0.84	0.54-1.31	0.458
primary school	274	164	59.85	110	40.15	0.95	0.53-1.69	0.869
junior high school/certificate	110	61	54.55	49	44.55	0.79	0.41-1.52	0.487
senior high school/diploma	206	114	55.34	92	44.66	0.79	0.44-1.43	0.439
bachelor degree higher than bachelor	291	158	54.30	133	45.70	0.75	0.42-1.35	0.344
Father's income per month	59	36	61.02	23	38.98	1.00		
1000-4999	36	25	69.44	11	30.56	1.00		
5000-9999	157	93	59.24	64	40.76	0.64	0.29-1.39	0.258
10000-24999	263	150	57.03	113	42.97	0.58	0.27-1.24	0.157
25000-49999	123	69	56.10	54	43.9	0.56	0.25-1.25	0.153
>50000	122	67	54.92	55	45.08	0.53	0.24-1.19	0.122
Mother's income per month								
1000-4999	84	50	59.52	34	40.48	1.00		
5000-9999	155	94	60.65	61	39.35	1.05	0.61-1.80	0.866
10000-24999	247	142	57.49	105	42.51	0.92	0.56-1.52	0.744
25000-49999	96	56	58.33	40	41.67	0.95	0.52-1.73	0.871
>50000	52	30	57.69	22	42.31	0.93	0.46-1.87	0.833

Table 9 Univariate analysis of the relationship between family factors and chatting behavior
(Continued)

(Continued)

Factor	Total	Negative Chat		Positive Chat		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Students' receipt per month								
less than999	63	38	60.32	25	39.68	1.00		
1000-4999	663	371	55.96	292	44.04	0.83	0.49-1.42	0.505
5000-9999	30	17	56.67	13	43.33	0.86	0.36-2.07	0.738
>10000	15	9	60.00	6	40.00	0.98	0.31-3.13	0.982
Number of family member of students are living with								
1-5	749	409	54.61	340	45.39	1.00		
6-10	200	124	62.00	76	38.00	1.36	0.98-1.87	0.062
more than 11	26	15	57.69	11	42.31	1.13	0.51-2.50	0.756
Child raring pattern								
sensible Parent (score ≤50)	921	551	55.48	410	44.52	1.00		
sensitive Parent (score more than 50)	65	43	66.15	22	33.85	1.57	0.92-2.66	0.093

3) The association between friend factors and inappropriate chatting behavior

The results of univariate analysis showed significant association in students who were influenced by friends (OR=1.76, 95%CI = 1.03-3.03) and had bad behavior friends (OR = 3.41, 95%CI = 2.25 – 5.26) (Table10)

Table 10 Univariate analysis of the relationship between friend factors and chatting behavior

Factor	Total	Negative Chat		Positive Chat		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Friend Influence								
non-influence (score ≤ 25)	65	28	43.08	37	56.92	1.00		
influence (score more than 25)	921	526	57.11	395	42.89	1.76	1.03-3.03	0.027
Friend behavior								
good behavior (score ≤ 40)	827	429	51.87	398	48.13	1.00		
bad behavior (score more than 40)	159	125	78.62	34	21.38	3.41	2.25-5.26	<0.001

4) The association between the Internet using characteristics and inappropriate chatting behavior

Students who started using the Internet at the age 5 – 9 years had 2.68 times (OR = 2.68, 95%CI = 1.37-5.19) of having negative chatting behavior than students who started later. Students who used the Internet more than 4 years had 1.49 times (OR = 1.49, 95%CI = 1.13-1.96) of having negative chatting behavior than students who used the Internet 1 – 3 years. For the duration of time in Internet using, univariate analysis showed significant association in students who used the Internet more than 4 hours per time (OR = 1.81, 95%CI = 1.31-2.52) and in students who used the Internet 6 – 10 times per week (OR=2.12, 95%CI=1.51-2.99). In addition, student who answered using the Internet at home in their bed room had significant risk of having negative chat behavior (OR = 2.17, 95%CI = 1.15-4.08) (Table 11)

Table 11 Univariate analysis of the relationship between Internet using characteristics and chatting behavior

Factor	Total	Negative Chat		Positive Chat		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Age at first using the Internet								
5-9 years	153	105	68.63	48	31.37	2.68	1.37-5.19	0.003
10-14 years	735	392	53.33	343	46.67	1.40	0.78-2.51	0.254
15-19 years	49	22	44.90	27	55.10	1.00		
Duration of the Internet using								
1-3 years	501	257	51.30	244	48.70	1.00		
more than 4 years	406	248	61.08	158	38.92	1.49	1.13-1.96	0.003
Number of hours using the Internet per time								
≤ 3 hours	753	399	52.99	354	47.01	1.00		
more than 4 hours	219	147	67.12	72	32.88	1.81	1.31-2.52	<0.001
Times using the Internet per week								
1-5	725	375	51.72	350	48.28	1.00		
6-10	190	132	69.47	58	30.53	2.12	1.51-2.99	<0.001
more than 10 times	36	29	80.56	7	19.44	3.87	1.67-8.94	0.002
Computer placement (for students who answer using at home)								
living room	385	208	54.03	177	45.97	1.70	0.93-3.11	0.084
private room (bed room)	202	121	59.90	81	40.10	2.17	1.15-4.08	0.017
parent's room	49	20	40.82	29	59.18	1.00		

5) The association between by chance motivation factors and inappropriate chatting behavior

Univariate analysis showed significant association among students who accidentally found pornographic websites via using search engine at least once (OR = 1.99, 95% CI = 1.52 – 2.61), students who were persuaded by stranger on the Internet to chat about sex at least once (OR = 3.93, 95%CI = 2.94 – 5.27), students who reported that they ever found advertisement banners on the Internet which persuaded to visit pornographic websites at least once (OR = 2.36, 95%CI = 1.80 – 3.08) and students who received the e-mail which had pornographic content at least once (OR = 2.85, 95%CI = 2.14-3.78) and negative chatting behavior. (Table 12)

Table 12 Univariate analysis of the relationship between by chance motivation factors and chatting behavior.

Factor	Total	Negative Chat		Positive Chat		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Accidentally found pornographic websites via using search engine								
never	386	177	45.85	209	54.15	1.00		
at least once	600	377	62.83	223	37.17	1.99	1.52-2.61	<0.001
Ever persuaded by stranger on the Internet to chat about sex								
never	594	259	43.60	335	56.40	1.00		
at least once	392	295	75.26	97	24.74	3.93	2.94-5.27	<0.001
Ever found the advertisement banner which persuaded to visit the pornographic website								
never	434	193	44.47	241	55.53	1.00		
at least once	552	361	65.4	191	34.60	2.36	1.80-3.08	<0.001
Ever received e-mail which had pornographic content								
never	619	291	47.01	328	52.99	1.00		
at least once	367	263	71.66	104	28.34	2.85	2.14-3.78	<0.001

4.3.2 Website using behavior

1) The association between personal characteristics and inappropriate website using behavior

Univariate analysis showed significant association in male (OR = 3.86, 95%CI = 2.93 – 5.08), students age 10 – 14 years (OR = 1.64, 95%CI = 1.26 – 2.13), students who studied in field of linguistic (OR = 1.71, 95%CI = 1.18 – 2.49) and Thai – Social (OR = 2.40, 95%CI = 1.42-4.06) to have the negative website using behavior. In addition, students who got grade at last semester less than 2.00 had the significant tendency to have negative website using behavior (OR = 4.54, 95%CI = 2.49 – 8.28) as well as students who got GPA (Grade Point Average) less than 2.00 (OR = 2.51, 95%CI = 1.09 – 5.78) (Table 13)

Table 13 Univariate analysis of the relationship between personal characteristics and website using behavior

Factor	Total	Negative using www		Positive using www		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Sex								
male	441	304	68.93	137	31.07	3.86	2.93-5.08	<0.001
female	545	199	36.51	346	63.49	1.00		
Age Groups								
10-14 years	409	238	58.19	171	41.81	1.64	1.26-2.13	<0.001
15-19 years	577	265	45.93	312	54.07	1.00		
Level of Education								
junior high school	677	327	48.30	350	51.70	0.71	0.53-0.93	0.011
senior high school	309	176	56.96	133	43.04	1.00		
Field of Study								
science - math	302	143	47.35	159	52.65	1.00		
art - math	149	74	49.66	75	50.34	1.09	0.74-1.62	0.644
linguistic	183	111	60.66	72	39.34	1.71	1.18-2.49	0.005
thai - social	79	54	68.35	25	31.65	2.40	1.42-4.06	0.001

Table 13 Univariate analysis of the relationship between personal characteristics and website using behavior (Continued)

Factor	Total	Negative using www		Positive using www		OR	95%CI	p- value
		Number	Percent	Number	Percent			
Students' grade at last Semester								
less than 2.00	81	64	79.01	17	20.99	4.54	2.49-8.28	<0.001
2.01-3.00	235	120	51.06	115	48.94	1.26	0.86-1.83	0.222
3.01-4.00	212	96	45.28	116	54.72	1.00		
Students' Grade Point Average (GPA)								
less than 2.00	35	26	74.29	9	25.71	2.51	1.09-5.78	0.030
2.01-3.00	113	71	62.83	42	37.17	1.46	0.87-2.46	0.143
3.01-4.00	129	69	53.49	60	46.51	1.00		

2) The association between family factors and inappropriate website using behavior

Univariate analysis showed the significant association in child rearing pattern, students who had sensitive parent had 2.11 times (OR =2.11, 95%CI = 1.23 – 3.61) than students who had sensible parent of having the negative website using behavior. (Table 14)

Table 14 Univariate analysis of the relationship between family factors and website using behavior

Factor	Total	Negative using www		Positive using www		OR	95%CI	p- value
		Number	Percent	Number	Percent			
Parental status								
father and mother live together	804	418	51.99	386	48.01	1.00		
divorce / separated	128	62	48.44	66	51.56	0.86	0.59-1.25	0.455
parent died	54	23	42.59	31	57.41	0.68	0.39-1.19	0.183
Child order								
first chid	573	285	49.74	288	50.26	0.88	0.59-1.30	0.532
second child	290	153	52.76	137	47.24	0.99	0.65-1.52	0.987
third-seventh child	123	65	52.85	58	47.15	1.00		
Number of sisters and brothers (Include students)								
1	206	93	45.15	113	54.85	1.00		
2	493	259	52.54	234	47.46	1.34	0.96-1.86	0.075
more than 3	287	151	52.61	136	47.39	1.35	0.94-1.93	0.102
Father's occupation								
government/state enterprise	183	98	53.55	85	46.45	1.00		
public sector	97	52	53.91	45	46.39	1.02	0.61-1.64	0.993
commerce/own business	344	163	47.38	181	52.62	0.78	0.54-1.12	0.178
employee	288	161	55.90	127	44.10	1.09	0.75-1.59	0.617
unemploy/house husband	11	2	18.18	9	81.82	0.19	0.04-0.92	0.039
Father's educational level								
primary school	210	107	50.95	103	49.05	0.67	0.41-1.09	0.113
junior high school/vocational certificate	119	52	43.70	67	56.30	0.50	0.29-0.86	0.013
senior high school/vocational diploma	240	120	50.00	120	50.00	0.65	0.40-1.04	0.076
bachelor degree	260	135	51.92	125	48.08	0.70	0.43-1.12	0.141
higher than bachelor	99	60	60.61	39	39.39	1.00		
Mother's occupation								
government/semi public sector	123	68	55.28	55	44.72	1.00		
commerce/own business	315	146	46.35	169	53.65	0.69	0.45-1.06	0.093
general worker	189	102	53.97	87	46.03	0.95	0.60-1.49	0.820
unemploy/house wife	248	127	51.21	121	48.79	0.84	0.55-1.31	0.459

Table 14 Univariate analysis of the relationship between family factors and website using behavior (Continued)

Factor	Total	Negative using www		Positive using www		OR	95%CI	p- value
		Number	Percent	Number	Percent			
Mother's educational level								
primary school	274	132	48.18	142	51.82	0.84	0.47-1.48	0.543
junior high school/certificate	110	60	54.55	50	45.45	1.08	0.57-2.04	0.803
senior high school/diploma	206	109	52.91	97	47.09	1.01	0.56-1.81	0.960
bachelor degree	291	149	51.20	142	48.80	0.94	0.54-1.66	0.851
higher than bachelor	59	31	52.54	28	47.46	1.00		
Father's income per month								
1000-4999	36	18	50.00	18	50.00	1.00		
5000-9999	157	90	57.32	67	42.68	1.34	0.65-2.77	0.426
10000-24999	263	138	52.47	125	47.53	1.10	0.55-2.22	0.781
25000-49999	123	62	50.41	61	49.59	1.02	0.48-2.14	0.966
>50000	122	62	50.82	60	49.18	1.03	0.49-2.17	0.931
Mother's income per month								
1000-4999	84	39	46.43	45	53.57	1.00		
5000-9999	155	89	57.42	66	42.58	1.55	0.91-2.65	0.105
10000-24999	247	132	53.44	155	46.56	1.32	0.81-2.17	0.267
25000-49999	96	48	50.00	48	50.00	1.15	0.64-2.07	0.632
>50000	52	29	55.77	23	44.23	1.45	0.72-2.91	0.291
Students' allowance per month								
less than999	63	33	52.38	30	47.62	1.00		
1000-4999	663	338	50.98	325	49.02	0.94	0.56-1.58	0.832
5000-9999	30	16	53.33	14	46.67	1.03	0.43-2.49	0.931
>10000	15	7	46.67	8	53.33	0.79	0.26-2.48	0.693
Number of family member of students are living with								
1-5	749	379	50.60	370	49.40	1.00		
6-10	200	105	52.50	95	47.50	1.07	0.78-1.47	0.633
more than 11	26	14	53.85	12	46.15	1.14	0.52-2.49	0.745
Child rearing pattern								
sensible Parent (score ≤50)	921	459	94.84	462	50.16	1.00		
sensitive Parent (score more than 50)	65	44	67.69	21	32.31	2.11	1.23-3.61	0.005

3) The association between friend factors and inappropriate website using behavior

Students who were influenced by their friends have significant tendency to have the negative website using behavior (OR = 1.85, 95%CI = 1.07 – 3.26) as well as students who had bad behavior friends (OR = 3.18, 95%CI = 2.15 – 4.76)

Table 15 Univariate analysis between friend factors and website using behavior

Factor	Total	Negative using www		Positive using www		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Friend Influence								
non-influence (score ≤ 25)	65	24	36.92	41	63.08	1.00		
influence (score more than 25)	921	479	52.01	442	47.99	1.85	1.07-3.26	0.018
Friend behavior								
good behavior (score ≤ 40)	827	386	46.67	441	53.33	1.00		
bad behavior (score more than 40)	159	117	73.58	42	26.42	3.18	2.15-4.76	<0.001

4) The association between Internet using characteristic factors and inappropriate website using behavior

Univariate analysis showed significant association in students who used the Internet more than 4 years (OR = 1.57, 95%CI = 1.19 – 2.06), used the Internet more than 4 hours per time (OR = 1.96, 95%CI = 1.42 – 2.72). In students who reported that using the Internet at home, students who have computer in their bed room have 2.04 times than the other to have the negative website using behavior. (Table 16)

Table 16 Univariate analysis of the relationship between Internet using characteristic factors and website using behavior

Factor	Total	Negative using www		Positive using www		OR	95%CI	p- value
		Number	Percent	Number	Percent			
Age at first using the Internet								
5-9 years	153	88	57.52	65	42.48	1.02	0.53-1.95	0.963
10-14 years	735	359	48.84	376	51.16	0.72	0.39-1.29	0.262
15-19 years	49	28	57.14	21	42.86	1.00		
Time of the Internet using								
1-3 years	501	231	46.11	270	53.89	1.00		
more than 4 years	406	233	57.39	173	42.61	1.57	1.19-2.06	0.001
Number of hours using the Internet per time								
≤ 3 hours	753	357	47.41	396	52.59	1.00		
more than 4 hours	219	140	63.93	79	36.07	1.96	1.42-2.72	<0.001
Times using the Internet per week								
1-10	915	460	50.27	455	49.73	1.00		
more than 10 times	36	24	66.67	12	33.33	1.97	0.94-4.39	0.053
Computer placement (for students who answer using at home)								
living room	385	183	47.53	202	52.47	1.31	0.41-2.41	0.376
private room (bed room)	202	118	58.42	84	41.58	2.04	1.07-3.87	0.028
parent's room	49	20	40.82	29	52.18	1.00		

5) The association between by chance motivation factors and inappropriate website using behavior

Univariate analysis showed significant association between by chance motivation factors and inappropriate website using behavior in students who accidentally found pornographic websites via using search engine (OR = 3.83, 95%CI= 2.89 – 5.08), ever persuaded by stranger on the Internet to chat about sex (OR = 5.88, 95%CI = 4.38 – 7.92), ever found advertisement banners which persuaded to visit pornographic websites (OR = 5.93, 95%CI = 4.37 – 8.04) and ever received e-

mail which had pornographic content (OR = 5.59, 95%CI = 4.14 – 7.56) when compare with students who never exposed to those motivation factors. (Table 17)

Table 17 Univariate analysis of the relationship between by chance motivation factors and website using behavior

Factor	Total	Negative using www		Positive using www		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Accidentally found pornographic websites via using search engine								
never	386	121	31.35	265	68.65	1.00		
at least once	600	382	63.67	218	36.33	3.83	2.89-5.08	<0.001
Ever been persuaded by stranger on the Internet to chat about sex								
never	594	206	34.68	388	65.32	1.00		
at least once	392	297	75.77	95	24.23	5.88	4.38-7.92	<0.001
Ever found the advertisement banner which persuaded to visit pornographic websites								
never	434	120	27.65	314	72.35	1.00		
at least once	552	383	69.38	169	30.62	5.93	4.37-8.04	<0.001
Ever received e-mail which had pornographic content								
never	619	224	36.19	395	63.81	1.00		
at least once	367	279	76.02	88	23.98	5.59	4.14-7.56	<0.001

4.3.3 Online game playing behavior

1) The association between personal characteristic factors and inappropriate online game playing behavior

There were the significant association between personal characteristics and inappropriate online game playing behavior in male (OR = 3.95, 95%CI = 3.01 – 5.21), students who studied in junior high school (OR = 1.82, 95%CI= 1.37 – 2.39), students who got grade during last semester less than 2.00 (OR = 3.48, 95%CI = 1.99 – 6.09) and students who got GPA less than 2.00 (OR = 6.20, 95%CI = 14.41) (Table 18)

Table 18 Univariate analysis of the relationship between personal characteristic factors and online game playing behavior

Factor	Total	Negative playing		Positive playing		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Sex								
male	441	298	67.57	143	32.43	3.95	3.01-5.21	<0.001
female	545	188	34.50	357	65.50	1.00		
Age Groups								
10-14 years	409	175	42.79	234	57.21	0.64	0.49-0.83	<0.001
15-19 years	577	234	57.21	266	46.10	1.00		
Level of Education								
junior high school	677	365	53.91	312	46.09	1.82	1.37-2.39	<0.001
senior high school	309	121	39.16	188	60.84	1.00		
Field of Study								
science – math	302	157	51.99	145	48.01	1.00		
art – math	149	73	48.99	76	51.01	0.88	0.59-1.31	0.552
linguistic	183	73	39.89	110	60.11	0.61	0.42-0.89	0.009
thai – social	79	46	58.23	33	41.77	1.28	0.77-2.13	0.322
Students' grade at last Semester								
less than 2.00	81	52	64.20	29	35.80	3.48	1.99-6.09	<0.001
2.01-3.00	235	106	45.11	129	54.89	1.59	1.08-2.35	0.016
3.01-4.00	212	72	33.96	140	66.04	1.00		
Students' Grade Point Average (GPA)								
less than 2.00	35	26	74.29	9	25.71	6.20	2.66-14.41	<0.001
2.01-3.00	113	62	54.87	51	45.13	2.61	1.54-4.40	<0.001
3.01-4.00	129	41	31.78	88	68.22	1.00		

2) The association between family factors and inappropriate online game playing behavior

Mother's income was associated to the negative online game playing, student's whose mother have income more than 50,000 baht per month had 3.31 times (OR = 3.31, 95%CI = 1.59 – 6.88) risk of inappropriate online game playing behavior than student whose mother have lower income. (Table 19)

Table19 Univariate analysis between family factors and online game playing behavior

Factor	Total	Negative playing		Positive playing		OR	95%CI	P-value
		Number	Percent	Number	Percent			
Parental status								
father and mother live together	804	418	51.99	386	48.01	1.00		
divorce / separated	128	62	48.44	66	51.56	0.86	0.59-1.25	0.455
parent died	54	23	42.59	31	57.41	0.68	0.39-1.19	0.183
Birth order								
first child	573	275	47.99	298	52.01	0.90		
second child	290	149	51.38	141	48.62	1.04	0.68-1.58	0.627
third-seventh child	123	62	50.41	61	49.59	1.00	0.61-1.34	0.856
Number of sisters and brothers (Include student)								
1	206	103	50.00	103	50.00	1.00		
2	493	247	50.10	246	49.90	1.00	0.72-1.39	0.981
more than 2	287	136	47.39	151	52.61	0.90	0.63-1.29	0.567
Father's occupation								
government/state enterprise	183	97	53.01	86	46.99	1.00		
public sector	97	46	47.42	51	52.58	0.79	0.48-1.30	0.374
commerce/own business	344	184	53.49	160	46.51	0.74	0.71-1.46	0.915
employee	288	131	45.49	157	54.51	0.33	0.51-1.07	0.112
unemploy/house husband	11	3	27.27	8	72.73	0.54	0.08-1.08	0.098
Father's educational level								
primary school	210	98	46.67	112	53.33	1.00		
junior high school/vocational certificate	119	50	42.02	69	57.98	0.79	0.49-1.27	0.337
senior high school/vocational diploma	240	114	47.50	126	52.50	0.65	0.38-1.12	0.122

Table 19 Univariate analysis between family factors and online game playing behavior
(Continued)

Factor	Total	Negative playing		Positive playing		OR	95%CI	P-value
		Number	Percent	Number	Percent			
bachelor degree	260	141	54.23	119	45.77	0.82	0.51-1.30	0.400
higher than bachelor	99	52	52.53	47	47.47	1.07	0.67-1.70	0.772
Mother's occupation								
government/semi	123	63	51.22	60	48.78	1.00		
public sector	87	50	57.47	37	42.53	1.28	0.74-2.24	0.371
commerce/own business	315	164	52.06	151	47.94	1.03	0.68-1.57	0.873
general worker	189	79	41.80	110	58.20	0.68	0.43-1.08	0.103
unemploy/house wife	248	123	49.60	125	50.40	0.93	0.60-1.44	0.768
Mother's educational level								
primary school	274	128	46.72	146	53.28	1.00		
junior high school/certificate	110	50	45.45	60	54.55	0.79	0.45-1.39	0.417
senior high school/diploma	206	98	47.57	108	52.43	0.75	0.39-1.41	0.380
bachelor degree	291	156	53.61	135	46.39	0.82	0.45-1.46	0.501
higher than bachelor	59	31	52.54	28	47.46	1.04	0.59-1.83	0.881
Father's income per month								
1000-4999	36	19	52.78	17	47.22	1.00		
5000-9999	157	77	49.04	80	50.96	0.86	0.41-1.78	0.686
10000-24999	263	139	52.85	124	47.15	1.01	0.49-2.01	0.993
25000-49999	123	60	48.78	63	51.22	0.85	0.40-1.79	0.674
>50000	122	62	50.82	60	49.18	0.92	0.43-1.95	0.837
Mother's income per month								
1000-4999	84	34	40.48	50	59.52	1.00		
5000-9999	155	82	52.9	73	47.1	1.65	0.96-2.82	0.067
10000-24999	247	122	49.39	125	50.61	1.44	0.86-2.37	0.158
25000-49999	96	43	44.79	53	55.21	1.19	0.65-2.15	0.559
>50000	52	36	69.23	16	30.77	3.31	1.59-6.88	0.001
Students' receipt per month								
less than999	63	26	41.27	37	58.73	1.00		
1000-4999	663	321	48.42	342	51.58	1.34	0.79-2.25	0.279
5000-9999	30	17	56.67	13	43.33	1.86	0.77-4.48	0.166
>10000	15	10	66.67	5	33.33	2.85	0.87-9.31	0.084

Table 19 Univariate analysis between family factors and online game playing behavior
(Continued)

(Continued)

Factor	Total	Negative playing		Positive playing		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Number of family member of students are living with								
1-5	749	375	50.07	374	49.93	1.00		
6-10	200	98	49.00	102	51.00	0.95	0.70-1.31	0.788
more than 11	26	9	34.62	17	65.38	0.52	0.23-1.20	0.122
Child rearing pattern								
sensible Parent (score ≤50)	921	450	48.86	471	51.14	1.00		
sensitive Parent (score more than 50)	65	36	55.38	29	44.62	1.29	0.78-2.15	0.309

3) The association between friend factors and inappropriate online game playing behavior

Univariate analysis showed significant association between friend factors and inappropriate online game playing behavior in students who had bad behavior friends (OR = 1.70, 95%CI = 1.20-2.42) than students who had good behavior friends. (Table 20)

Table 20 Univariate analysis of the relationship between friend factors and online game playing behavior

Factor	Total	Negative playing		Positive playing		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Friend Influence								
non-influence (score ≤ 25)	65	31	47.69	34	52.31	1.00		
Influence (score more than 25)	921	455	49.40	466	50.60	1.07	0.67-1.83	0.789
Friend behavior								
good behavior (score ≤ 40)	827	390	47.16	437	52.84	1.00		
bad behavior (score more than 40)	159	96	60.38	63	39.62	1.70	1.20-2.42	0.002

4) The association between Internet using characteristic factors and inappropriate online game playing behavior

Students who used the Internet at age 10 – 14 years and 15 – 19 years had 6.33 (OR =6.33, 95%CI= 2.83 – 14.17) and 3.22 (OR=3.22, 95%CI=1.61 – 6.44) times respectively to have the negative online game playing behavior. Univariate analysis showed significant association in students who used the Internet more than 4 years (OR=1.41, 95%CI = 1.08-1.83), students who used the Internet more than 4 hours per time (OR = 2.98, 95%CI = 2.14-4.15) and students who used the Internet more than 6-10 times per week (OR = 4.14, 95%CI = 2.89-5.93) (Table 21)

Table 21 Univariate analysis of the relationship between Internet using characteristic factor and online game playing behavior

Factor	Total	Negative playing		Positive playing		OR	95%CI	P-value
		Number	Percent	Number	Percent			
Age at first using the Internet								
5-9 years	153	99	64.71	54	35.29	1.00		
10-14 years	735	355	48.30	380	51.70	6.33	2.83-14.17	<0.001
15-19 years	49	11	22.45	38	77.55	3.22	1.61-6.44	<0.001
Time of the Internet using								
1-3 years	501	231	46.11	270	53.89	1.00		
more than 4 years	406	222	54.68	184	45.32	1.41	1.08-1.83	0.010
Number of hours using the Internet per time								
≤ 3 hours	753	329	43.69	424	56.31	1.00		
more than 4 hours	219	153	69.86	66	30.14	2.98	2.14-4.15	<0.001
Times using the Internet per week								
1-5	725	302	41.66	423	58.34	1.00		
6-10	190	142	74.74	48	25.26	4.14	2.89-5.93	<0.001
more than 10 times	36	30	83.33	6	16.67	7.00	2.88-17.03	<0.001
Computer placement (for students who answer using at home)								
living room	385	191	49.61	194	50.39	0.80	0.44-1.45	0.469
private room (bed room)	202	110	54.46	92	45.54	0.97	0.51-1.82	0.935
parent's room	49	27	55.10	22	44.90	1.00		

5) The association between by chance motivation factors and inappropriate online game playing behavior

There was significant associations between by chance motivation factors and inappropriate online game playing behavior in students who accidentally found pornographic websites (OR=2.18, 95%CI = 1.67 – 2.85) , ever persuaded by stranger on the Internet to chat about sex (OR = 2.44, 95%CI = 1.86 – 3.19), ever found advertisement banners related to pornographic website (OR= 2.55, 95%CI = 1.96 – 3.33) and ever received e-mail with the pornographic content (OR = 2.52, 95%CI = 1.91-3.31) at least once within last 12 months. (Table 22)

Table 22 Univariate analysis of the relationship between by chance motivation factors and online game playing behavior

Factor	Total	Negative playing		Positive playing		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Accidentally found pornographic websites via using search engine								
never	386	145	37.56	241	62.44	1.00		
at least once	600	341	56.83	259	43.17	2.18	1.67-2.85	<0.001
Ever been persuaded by stranger on the Internet to chat about sex								
never	594	241	40.57	353	59.43	1.00		
at least once	392	245	62.50	147	37.50	2.44	1.86-3.19	<0.001
Ever found advertisement banners which persuaded to visit the pornographic website								
never	434	158	36.41	276	63.59	1.00		
at least once	552	328	59.42	224	40.58	2.55	1.96-3.33	<0.001
Ever received e-mail which had pornographic content								
never	619	253	40.87	366	59.13	1.00		
at least once	367	233	63.49	134	36.51	2.52	1.91-3.31	<0.001

4.3.4 Long Time accessing to the Internet

1) The association between personal characteristics and long time accessing to the Internet

Univariate analysis showed significant association between personal characteristics and long time accessing to the internet in male have 1.69 times (OR=1.69, 95%CI = 1.24 – 2.32) than female to have long time accessing to the Internet and in students who got GPA (Grade Point Average) 2.01 – 3.00 (OR = 2.01, 95%CI = 1.08– 3.70) (Table 23)

Table 23 Univariate analysis of the relationship between personal characteristics factors and long time accessing to the Internet

Factor	Total	>4 hours		≤ 3 hours		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Sex								
male	434	120	27.65	314	72.35	1.69	1.24-2.32	0.001
female	538	99	18.40	439	81.61	1.00		
Age Groups								
10-14 years	404	100	24.75	304	75.25	1.00		
15-19 years	568	119	20.95	449	79.05	1.24	0.91-1.68	0.162
Level of Education								
junior high school	666	219	22.53	753	77.47	1.00		
senior high school	306	70	22.88	236	77.12	0.97	0.69-1.34	0.861
Field of Study								
Science – Math	297	76	25.59	221	74.41	1.00		
art – math	148	41	27.70	107	72.30	1.11	0.71-1.73	0.633
linguistic	179	45	25.14	134	74.86	0.97	0.63-1.49	0.913
thai – social	78	25	32.05	53	67.95	1.37	0.79-2.36	0.253
Students' grade at last Semester								
less than 2.00	80	24	30.00	56	70.00	1.68	0.93-3.03	0.078
2.01-3.00	232	51	21.98	181	78.02	1.10	0.70-1.75	0.662
3.01-4.00	212	43	20.28	169	79.72	1.00		
Students' Grade Point Average (GPA)								
less than 2.00	34	10	29.41	24	70.59	2.02	0.85-4.83	0.111
2.01-3.00	113	33	29.2	80	70.8	2.01	1.08-3.70	0.026
3.01-4.00	129	22	17.05	107	82.95	1.00		

2) The association between family factors and long time accessing to the Internet.

There was significant association between family factors and long time accessing to the Internet in students whose fathers and mothers monthly income higher than 25,000 baht. Students who had sensitive parents have 1.84 times (OR=1.84, 95%CI =1.07 – 3.16) risk of having long time accessing to the Internet than students who have sensible parents. (Table 24)

Table 24 Univariate of the relationship between family factors and long time accessing to the Internet

Factor	Total	>4 hours		≤ 3 hours		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Parental status								
father and mother live together	792	188	23.74	604	76.26	1.00		
divorce / separated	127	21	16.54	106	83.46	0.63	0.38-1.04	0.074
parent died	53	43	81.13	10	18.87	0.74	0.36-1.51	0.419
Birth order								
first child	568	120	21.13	448	78.87	0.85	0.53-1.36	0.502
second child	287	71	24.74	216	75.26	1.04	0.63-1.72	0.864
third-seventh child	117	28	23.93	89	76.07	1.00		
Number of sisters and brothers (include students)								
1	204	55	26.96	149	73.04	1.00		
2	489	106	21.68	383	78.32	0.79	0.51-1.09	0.134
more than 2	279	58	20.79	221	79.21	0.71	0.46-1.08	0.114
Father's occupation								
government/state enterprise	180	52	28.89	128	71.11	1.00		
public sector	96	23	23.96	73	76.04	0.77	0.43-1.37	0.381
commerce/own business	337	82	24.33	255	75.67	0.79	0.52-1.19	0.261
Employee	287	48	16.72	239	83.28	0.49	0.31-0.77	0.002
unemployed/house husband	11	1	9.09	10	90.91	0.24	0.03-2.00	0.187

Table 24 Univariate of the relationship between family factors and long time accessing to the Internet (Continued)

Factor	Total	>4 hours		≤ 3 hours		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Father's educational level								
primary school	209	27	12.92	182	87.08	0.22	0.13-0.39	<0.001
junior high school/vocational certificate	117	19	16.24	98	83.76	0.29	0.16-0.55	<0.001
senior high school/vocational diploma	239	48	20.08	191	79.92	0.38	0.23-0.64	<0.001
bachelor degree	254	77	30.31	177	69.69	0.66	0.41-1.07	0.091
higher than bachelor	98	39	39.80	59	60.20	1.00		
Mother's occupation								
government/semi public sector	122	34	27.87	88	72.13	1.00		
commerce/own business	86	28	32.56	58	67.44	1.25	0.68-2.28	0.467
general worker	307	78	25.41	229	74.59	0.88	0.54-1.41	0.601
unemploy/house wife	187	25	13.37	162	86.63	0.39	0.22-0.72	0.002
	246	51	20.73	195	79.27	0.67	0.41-1.12	0.127
Mother's educational level								
primary school	209	27	12.92	182	87.08	0.22	0.13-0.39	<0.001
junior high school/certificate	117	19	16.24	98	83.76	0.29	0.15-0.55	<0.001
senior high school/diploma	239	48	20.08	191	79.92	0.38	0.22-0.63	<0.001
bachelor degree	254	77	30.31	177	69.69	0.65	0.41-1.06	0.091
higher than bachelor	98	39	39.8	59	60.2	1.00		
Father's income per month								
1000-4999	35	2	5.71	33	94.29	1.00		
5000-9999	156	24	15.38	132	84.62	3.00	0.67-13.33	0.149
10000-24999	261	52	19.92	209	80.08	4.11	0.95-17.66	0.058
25000-49999	121	28	23.14	93	76.86	4.96	1.12-22.01	0.035
>50000	121	46	38.02	75	61.98	10.12	2.32-44.17	0.002

Table 24 Univariate of the relationship between family factors and long time accessing to the Internet (Continued)

Factor	Total	>4 hours		≤ 3 hours		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Mother's income per month								
1000-4999	83	11	13.25	72	86.75	1.00		
5000-9999	153	19	12.42	134	87.58	0.92	0.42-2.05	0.854
10000-24999	243	50	20.58	193	79.42	1.69	0.83-3.44	0.143
25000-49999	96	29	30.21	67	69.79	2.83	1.31-6.12	0.008
>50000	50	25	50.00	25	50.00	6.54	2.82-15.20	<0.001
Students' receipt per month								
less than999	63	7	11.11	56	88.89	1.00		
1000-4999	656	158	24.09	498	75.91	2.53	1.12-5.70	0.010
5000-9999	30	11	36.67	19	63.33	4.63	1.48-14.48	0.010
>10000	14	4	28.57	10	71.43	3.20	0.76-13.46	0.090
1-5	742	166	22.37	576	77.63	1.00		
6-10	195	45	23.08	150	76.92	1.04	0.71-1.51	0.834
more than 11	24	6	25.00	18	75.00	1.15	0.45-2.96	0.762
Child rearing pattern								
sensible Parent (score ≤50)	907	197	21.72	710	78.28	1.00		
sensitive Parent (score more than 50)	65	22	33.85	43	66.15	1.84	1.07-3.16	0.024

3) The association between friend factors and long time accessing to the Internet.

There was no significant association between friend – influence and friend behavior and long time accessing to the Internet (Table 25)

Table 25 Univariate analysis of the relationship between friend factors and long time accessing to the Internet.

Factor	Total	>4 hours		≤ 3 hours		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Friend Influence								
non-influence (score ≤ 25)	65	12	18.46	53	81.54	1.00		
influence (score more than 25)	907	207	22.82	700	77.18	1.31	0.67-2.73	0.416
Friend behavior								
good behavior (score ≤ 40)	817	178	21.79	639	78.21	1.00		
bad behavior (score more than 40)	155	41	26.45	114	73.55	1.29	0.84-1.94	0.203

4) The association between Internet using characteristics and long time accessing to the Internet.

There was significant association between internet using characteristics and long time accessing to the Internet in students who used the Internet more than 4 years (OR= 1.76, 95%CI = 1.28 – 2.43), used the Internet 6-10 times per week (OR = 5.23, 95%CI = 3.68-7.44) and had computer in their bed room (OR = 2.41, 95% CI = 1.09 – 5.31) (Table 26)

Table 26 Univariate analysis of the relationship between Internet using characteristic factors and long time accessing to the Internet.

Factor	Total	>4 hours		≤ 3 hours		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Time of the Internet using								
1-3 years	495	90	18.18	405	81.82	1.00		
more than 4 years	404	114	28.22	290	71.78	1.76	1.28-2.43	<0.001
Times using the Internet per week								
1-5	722	105	14.54	617	85.46	1.00		
6-10	189	89	47.09	100	52.91	5.23	3.68-7.44	<0.001
more than 10	36	20	55.56	16	44.44	7.35	3.69-14.63	<0.001
Computer placement (for students who answer using at home)								
living room	378	96	25.40	282	74.60	1.51	0.71-3.23	0.283
private room (bed room)	199	70	35.18	129	65.82	2.41	1.09-5.31	0.024
parent's room	49	9	18.37	40	81.63	1.00		

5) The association between by chance motivation factors and long time accessing to the Internet

Students who accidentally found pornographic websites via using search engine had 1.49 times (OR=1.49, 95%CI = 1.07 – 2.09) than students who never found it to access the Internet for long time. Univariate analysis showed the significant association in students who ever been persuaded by stranger on the Internet to chat about sex (OR = 1.38, 95%CI = 1.01 – 1.89), ever found advertisement banners which persuaded to visit pornographic websites (OR = 1.74, 95%CI = 1.27 – 2.39), ever received e-mail which had pornographic content (OR = 1.99, 95%CI = 1.45 – 2.73) (Table 27)

Table 27 Univariate analysis of the relationship between by chance motivation factors and long time accessing to the Internet

Factor	Total	>4 hours		≤ 3 hours		OR	95%CI	p-value
		Number	Percent	Number	Percent			
Accidentally found pornographic websites via using search engine								
never	376	69	18.35	307	81.65	1.00	1.07-2.09	0.013
at least once	596	150	25.17	446	74.83	1.49		
Ever persuaded by stranger on the Internet to chat about sex								
never	583	118	20.24	465	79.76	1.00	1.01-1.89	0.036
at least once	389	219	22.53	753	77.47	1.38		
Ever found the advertisements banner which persuaded to visit the pornographic website								
never	424	73	17.22	351	82.78	1.00	1.27-2.39	<0.001
at least once	548	146	26.64	402	73.36	1.74		
Ever received e-mail which had pornographic content								
never	609	109	17.90	500	82.10	1.00	1.45-2.73	<0.001
at least once	363	110	30.30	253	69.70	1.99		

Table 28 Factors associated with the Inappropriate Internet behavior by univariate analysis

Factors	OR	95%CI	p-value
Inappropriate chatting behavior			
male	2.15	1.65 – 2.81	<0.001
studied in field of linguistic	1.67	1.15 - 2.43	0.007
studied in field of thai - social	1.85	1.10 – 3.08	0.018
grade at last semester less than 2.00	2.01	1.18 – 3.40	0.010
grade at last semester 2.01 – 3.00	1.68	1.15 – 2.44	0.007
GPA less than 2.00	2.87	1.25 – 6.59	0.009
had friend influence	1.76	1.03 – 3.03	0.027
had bad behavior friend	3.41	2.25 – 5.26	<0.001
age at first using the internet 5 – 9 years	2.68	1.37 – 5.19	0.003
using Internet more than 4 hours per time	1.81	1.31 – 2.52	<0.001
using Internet 6-10 times per week	2.12	1.51 - 2.99	<0.001
using Internet more than 10 times	3.87	1.67 – 8.94	0.002
computer placement in private room	2.17	1.15 – 4.08	0.017
accidentally found pornographic website via using search engine	1.99	1.52 – 2.61	<0.001
ever persuaded by stranger to chat about sex	3.93	2.94 – 5.27	<0.001
ever found pornographic advertisement banner	2.36	1.80 – 3.08	<0.001
ever received e-mail with pornographic content	2.85	2.14 – 3.78	<0.001
Factors	OR	95%CI	p-value
Inappropriate website using behavior			
male	3.86	2.93 – 5.08	<0.001
age 10 – 14 years	1.64	1.26 – 2.13	<0.001
studied in field of linguistic	1.71	1.18 – 2.49	0.005
studied in field of thai - social	2.40	1.42 – 4.06	0.001
grade at last semester less than 2.00	4.54	2.49 – 8.28	<0.001
had sensitive parent	2.11	1.23 – 3.61	0.005

Table 28 Factors associated with the Inappropriate Internet behavior by univariate analysis (Continued)

Factors	OR	95%CI	p-value
Inappropriate website using behavior (con.)			
had friend influence	1.85	1.07 – 3.26	0.018
had bad behavior friend	3.18	2.15 – 4.76	<0.001
using Internet more than 4 years	1.57	1.19 – 2.06	0.001
using Internet more than 4 hours per time	1.96	1.42 – 2.72	<0.001
computer placement in private room	2.04	1.07 – 3.87	0.028
accidentally found pornographic website via using search engine	3.83	2.89 – 5.08	<0.001
ever persuaded by stranger to chat about sex	5.88	4.38 – 7.92	<0.001
ever found pornographic advertisement banner	5.93	4.37 – 8.04	<0.001
ever received e-mail with pornographic content	5.59	4.14 – 7.56	<0.001
Factors	OR	95%CI	p-value
Inappropriate online game playing behavior			
male	3.95	3.01 – 5.21	<0.001
junior high school students	1.82	1.37 – 2.39	<0.001
grade at last semester less than 2.00	3.48	1.99 – 6.09	<0.001
grade at last semester 2.01 – 3.00	1.59	1.08 – 2.35	0.016
GPA less than 2.00	6.20	2.66 – 14.41	<0.001
GPA 2.01 – 3.00	2.61	1.54 – 4.40	<0.001
mother's income higher than 50,000 baht per month	3.31	1.59 – 6.88	0.001
had bad friend behavior	1.70	1.20 – 2.42	0.002
age at first using the Internet 10 – 14 years	6.33	2.83 – 14.17	<0.001
age at first using the Internet 15 – 19 years	3.22	1.61 – 6.44	<0.001
using Internet more than 4 years	1.41	1.08 – 1.83	0.010
using Internet 6 – 10 times per week	4.41	2.89 – 5.93	<0.001
more than 10 times per week	7.00	2.88 – 17.03	<0.001

Table 28 Factors associated with the Inappropriate Internet behavior by univariate analysis (Continued)

Factors	OR	95%CI	p-value
Inappropriate online game playing behavior			
accidentally found pornographic website via using search engine	2.18	1.67 – 2.85	<0.001
ever persuaded by stranger to chat about sex	2.44	1.86 – 3.19	<0.001
ever found pornographic advertisement banner	2.55	1.96 – 3.33	<0.001
ever received e-mail with pornographic content	2.52	1.91 – 3.31	<0.001
Factors	OR	95%CI	p-value
Long duration accessing to the Internet			
male	1.69	1.24 – 2.32	0.001
GPA 2.01 – 3.00	2.01	1.08 – 3.70	0.026
father's income 25,000 – 49,999 baht per month	4.96	1.12 – 22.01	0.035
mother's income 25,000 – 49,999 baht per month	2.83	1.31 – 6.12	0.008
had sensitive parent	1.84	1.07 – 3.16	0.024
using internet more than 4 years	1.76	1.28 – 2.43	<0.001
using internet 6 – 10 time per week	5.23	3.68 – 7.44	<0.001
using internet more than 10 times per week	7.35	3.69 – 14.63	<0.001
computer placement in private room	2.41	1.09 – 5.31	0.024
accidentally found pornographic website via using search engine	1.49	1.07 – 2.09	0.013
ever persuaded by stranger to chat about sex	1.38	1.01 – 1.89	0.036
ever found pornographic advertisement banner	1.74	1.27 – 2.39	<0.001
ever received e-mail with pornographic content	1.99	1.45 – 2.73	<0.001

4.4 Multivariate analysis of the relationship between personal characteristics, Internet using characteristics and by chance motivation factors with the inappropriate Internet behavior.

4.4.1 The association of interested factors and inappropriate chatting behavior by multivariate analysis

Multivariate analysis showed significant association between interested factors and inappropriate chatting behavior in male (OR=1.82, 95%CI =1.26-2.63), students who studied in field of linguistic (OR = 1.62, 95%CI = 1.03 – 2.54), students who accidentally found pornographic website via using search engine at least once (OR= 1.51, 95%CI = 1.02 – 2.25) and students who ever had persuaded by stranger on the Internet to chat about sex at least once (OR = 3.21, 95%CI = 2.13 – 4.84) after adjustment for significant variables in personal characteristics, Internet using characteristics and by chance motivation factors. (Table 29)

Table 29 The association between personal characteristics, Internet using characteristics and by chance motivation factors with the inappropriate chatting behavior by multivariate analysis

Factor	Inappropriate chatting behavior		
	Adjusted Odds Ratio*	95% CI	p-value
Sex			
male	1.82	1.26-2.63	0.001
female	1.00		
Field of Study			
science-math	1.00		
art-math	0.97	0.06-1.55	0.893
linguistic	1.62	1.03-2.54	0.037
thai-social	1.17	0.65-2.13	0.599
Age at first using the Internet			
5-9 years	2.36	0.90-6.18	0.081
10-14 years	1.31	0.58-2.93	0.518
15-19 years	1.00		

* Adjusted odds ratio for other variables in the table

Table 29 The association between personal characteristics, Internet using characteristics and by chance motivation factors with the inappropriate chatting behavior by multivariate analysis (Continued)

Factor	Inappropriate chatting behavior		
	Adjusted Odds Ratio*	95% CI	p-value
Time of the Internet using			
1-3 years	1.00		
more than 4 years	1.08	0.73-1.60	0.684
Number of hours using the Internet per time			
≤ 3 hours	1.00		
more than 4 hours	1.33	0.87-2.03	0.187
Times using the Internet per week			
1-5	1.00		
6-10	1.57	1.00-2.45	0.048
more than 10	2.12	0.77-5.84	0.146
Accidentally found pornographic websites via using search engine			
never	1.00		
at least once	1.51	1.02-2.25	0.040
Ever persuaded by stranger on the Internet to chat about sex			
never	1.00		
at least once	3.21	2.13-4.84	<0.001
Ever found advertisement banners which persuaded to visit the pornographic website			
never	1.00		
at least once	0.87	0.57-1.33	0.513
Ever received e-mail which had pornographic content			
never	1.00		
at least once	1.37	0.92-2.03	0.121

* Adjusted odds ratio for other variables in the table

4.4.2 The association of interested factors and inappropriate website using behavior by multivariate analysis

Logistic regression analysis showed significant association between interested factors and inappropriate website using behavior in male (OR = 3.46, 95%CI = 2.34 – 5.12), students who studied in field of linguistic (OR = 1.78, 95%CI = 1.10 – 2.90), students who used the Internet more than 4 hours per time (OR = 1.60, 95%CI = 1.04 – 2.45) after adjustment for significant variables in personal characteristics, Internet using characteristics and by chance motivation factors. In addition, there were significant associations in students who accidentally found pornographic websites via using search engine at least once (OR=1.85, 95%CI = 1.23 – 2.80), students who ever had persuaded by the stranger on the Internet to chat about sex at least once (OR = 2.28, 95%CI = 1.51 – 2.45), students who found advertisement banners which persuaded to visit the pornographic website at least once (OR = 2.16, 95%CI = 1.41 – 3.33) and students who ever had received e-mail which had pornographic content at least once (OR = 2.32, 95%CI = 1.54 – 3.49) when adjusted for significant variables in personal characteristics, Internet using characteristics and by chance motivation factors. (Table 30)

Table 30 The association between personal characteristics, Internet using characteristics and by chance motivation factors with the inappropriate website using behavior by multivariate analysis

Factor	Inappropriate website using behavior		
	Adjusted Odds Ratio*	95% CI	p-value
Sex			
male	3.46	2.34-5.12	<0.001
female	1.00		
age Groups			
10-14 years	1.39	0.92-2.08	0.115
15-19 years	1.00		
Field of Study			
science-math	1.00		
art-math	0.91	0.55-1.52	0.717

* Adjusted odds ratio for other variables in the table

Table 30 The association between personal characteristics, Internet using characteristics and by chance motivation factors with the inappropriate website using behavior by multivariate analysis (Continued)

Factor	Inappropriate website using behavior		
	Adjusted Odds Ratio*	95% CI	p-value
linguistic	1.78	1.10-2.90	0.019
thai-social	1.57	0.82-2.99	0.170
Time of the Internet using			
1-3 years	1.00		
more than 4 years	0.97	0.66-1.44	0.878
Number of hours using the Internet per time			
≤ 3 hours	1.00		
more than 4 hours	1.60	1.04-2.45	0.031
Accidentally found pornographic websites via using search engine			
never	1.00		
at least once	1.85	1.23-2.80	0.003
Ever persuaded by stranger on the Internet to chat about sex			
never	1.00		
at least once	2.28	1.51-3.45	<0.001
Ever found advertisement banners which persuaded to visit the pornographic website			
never	1.00		
at least once	2.16	1.41-3.33	<0.001
Ever received e-mail which had pornographic content			
never	1.00		
at least once	2.32	1.54-3.49	<0.001

* Adjusted odds ratio for other variables in the table

4.4.3 The association of interested factors and inappropriate online game playing behavior by multivariate analysis

After adjustment for the significant variables of personal characteristics, Internet using characteristics and by chance motivation factors by using logistic regression, the result showed significant association in male (OR= 2.70, 95%CI = 1.98 – 3.68), students who used the Internet more than 4 hours per time (OR=1.83, 95%CI = 1.23 – 2.71), students who used the Internet 6 – 10 times per week (OR = 2.95, 95%CI = 1.93 – 4.51), student who used the Internet more than 10 times per week (OR= 4.37, 95%CI = 1.57 – 12.18) and students who ever had persuaded by stranger on the Internet to chat about sex at least once (OR = 1.49, 95%CI =1.04 – 2.12). (Table 31)

Table 31 The association between personal characteristics, Internet using characteristics and by chance motivation factors with the inappropriate online game playing behavior by multivariate analysis

Factor	Inappropriate online game playing behavior		
	Adjusted Odds Ratio*	95% CI	p-value
Sex			
male	2.70	1.98 - 3.68	<0.001
female	1.00		
Age Groups			
10-14 years	0.70	0.41-1.18	0.175
15-19 years	1.00		
Level of education			
junior high school	1.33	0.76-2.33	0.315
senior high school	1.00		
Age at first using the Internet			
5-9 years	1.40	0.48-4.09	0.539
10-14 years	1.31	0.54-3.19	0.551
15-19 years	1.00		
Time of the Internet using			
1-3 years	1.00		
more than 4 years	1.16	0.78-1.73	0.456

* Adjusted odds ratio for other variables in the table

Table 31 The association between personal characteristics, Internet using characteristics and by chance motivation factors with the inappropriate online game playing behavior by multivariate analysis (Continued)

Factor	Inappropriate online game playing behavior		
	Adjusted Odds Ratio*	95% CI	p-value
Number of hours using the Internet per time			
≤ 3 hours	1.00		
more than 4 hours	1.83	1.23-2.71	0.003
Times using the Internet per week			
1-5	1.00		
6-10	2.95	1.93-4.51	<0.001
more than 10	4.37	1.57-12.18	0.005
Accidentally found pornographic websites via using search engine			
never	1.00		
at least once	1.26	0.89-1.78	0.196
Ever persuaded by stranger on the Internet to chat about sex			
never	1.00		
at least once	1.49	1.04-2.12	0.029
Ever found advertisement banners which persuaded to visit the pornographic website			
never	1.00		
at least once	1.37	0.94-1.99	0.099
Ever received e-mail which had pornographic content			
never	1.00		
at least once	1.40	0.98-2.01	0.065

* Adjusted odds ratio for other variables in the table

4.4.4 The association between interested factors and long time accessing to the Internet by multivariate analysis

Multivariate analysis showed significant association between interested factors and long time accessing to the Internet in students who used the Internet 6-10 times per week (OR =4.35, 95%CI = 2.98 – 6.36) and students who used the Internet more than 10 times per week (OR= 5.37, 95%CI =2.58 – 11.21) when adjusted for significant variables in personal characteristics, Internet using characteristics and by chance motivation factors. (Table 32)

Table 32 The association between personal characteristics, Internet using characteristics and by chance motivation factors with long time accessing to the Internet by multivariate analysis

Factor	long time accessing to the Internet (> 4 hours/time)		
	Adjusted Odds Ratio*	95% CI	p-value
Sex			
male	1.24	0.87 - 1.78	0.230
female	1.00		
Age at first using the Internet			
5-9 years	3.51	0.94 - 13.01	0.061
10-14 years	2.18	0.63 - 7.50	0.216
15-19 years	1.00		
Time of the Internet using			
1-3 years	1.00		
more than 4 years	1.16	0.79 - 1.71	0.447
Times using the Internet per week			
1-5	1.00		
6-10	4.35	2.98 - 6.36	<0.001
more than 10	5.37	2.58 - 11.21	<0.001
Accidentally found pornographic websites via using search engine			
never	1.00		
at least once	1.00	0.67 - 1.51	0.987

* Adjusted odds ratio for other variables in the table

Table 32 The association between personal characteristics, Internet using characteristics and by chance motivation factors with long time accessing to the Internet by multivariate analysis (Continued)

Factor	long time accessing to the Internet (> 4 hours/time)		
	Adjusted Odds Ratio*	95% CI	p-value
Ever persuaded by stranger on the Internet to chat about sex			
never	1.00		
at least once	0.94	0.63 - 1.41	0.776
Ever found advertisement banners which persuaded to visit the pornographic website			
never	1.00		
at least once	1.12	0.72 - 1.72	0.620
Ever received e-mail which had pornographic content			
never	1.00		
at least once	1.26	0.85 - 1.87	0.258

* Adjusted odds ratio for other variables in the table

Table 33 Factors associated with the Inappropriate Internet behavior by multivariate analysis

Inappropriate chatting behavior	adjusted OR*	95%CI	p-value
male	1.82	1.26 – 2.63	0.001
studied in field of linguistic	1.62	1.03 – 2.54	0.037
accidentally found pornographic website via using search engine	1.51	1.02 – 2.25	0.040
ever persuaded by stranger to chat about sex	3.21	2.13 – 4.84	<0.001
Inappropriate website using behavior			
male	3.46	2.34 – 5.12	<0.001
studied in field of linguistic	1.78	1.10 – 2.90	0.0019
using Internet more than 4 hours per time	1.60	1.04 – 2.45	0.031
accidentally found pornographic website via using search engine	1.85	1.23 – 2.80	0.003
ever persuaded by stranger to chat about sex	2.28	1.51 – 3.45	<0.001
ever found pornographic advertisement banner	2.16	1.41 – 3.33	<0.001
ever received e-mail with pornographic content	2.32	1.54 – 3.49	<0.001
Inappropriate online game playing behavior			
male	2.70	1.98 – 3.68	<0.001
using Internet more than 4 hours per time	1.83	1.23 – 2.71	0.003
using Internet 6 – 10 times per week	2.95	1.93 – 4.51	<0.001
using Internet more than 10 times per week	4.37	1.57 – 12.18	0.005
ever persuaded by stranger to chat about sex	1.49	1.04 – 2.12	0.029
Long duration accessing to the Internet			
using Internet 6 – 10 times per week	4.35	2.98 – 6.36	<0.001
using Internet more than 10 times per week	5.37	2.58 – 11.21	<0.001

* Adjusted odds ratio for personal characteristic, Internet using characteristic and by chance motivation factors

CHAPTER V

DISCUSSIONS

The results of this study showed associations between personal characteristics, family factors, friend factors, internet using characteristics and by chance motivation factors with the inappropriate Internet using behavior. The similar finding had been reported in some previous studies. (13, 38, 44, 67, 70-71) The result of focus group discussion was compared and discussed to the analytical results.

Inappropriate Internet behavior

In terms of chatting behavior, chatting was the popular activities on the Internet. More than half of students (52.03%) always use chat room or instant message programs.(Table 5) However, 24.14% of students reported that they occasionally make friends with stranger via chat room, 7.61% of them ever made appointment with stranger who they chatted with, 24.54% of them occasionally told a lie for fun and 9.33% occasionally chatted in rude words. (Table 7. Appendix) On the other hand, the result had these percentages lower than those of ECPAT International survey in 2002 (13) which reported that 84% of teenagers had new friends on the internet and 24% ever met stranger on the Internet in real space. In addition, students reported on focus group discussion that they always chatted on the Internet by using MSN messenger program or when they played online games, they made new friends with other persons by chatting with them in those games. They always chatted with friends in school by adding their e-mail to contact list and sometimes seeking new friends on websites. Almost all students made friends with the opposite sex and told a lie about their name, age, education. For example, if they chatted with the university students, they would tell them that they also studied in the university too, or give personal information nearly the same as the person who they chatted with. Some students who reported that they ever made appointment with others on

Internet said that they always met new friends in public areas and be cautious not to go out in private areas with stranger. About sexual content on chat room, some students reported that they had been invited by strangers to talk about sex but they can block those e-mail from contact list. Some public chat rooms also had specific rooms to chat about sex.

For using website behavior, accessing to websites was the most popular activity on the Internet about 65.92% (Table 5.). Many of students frequently searched some useful information on the Internet (39.55%) and most of them never intentionally visited the pornographic websites (66.02%) (Table 8. Appendix). On the other hand, there were some students who like to visit pornographic sites, send pornographic content to their friends via e-mail and revisit those kinds of websites again. In addition, students reported in focus group discussion that they preferred visiting entertainment websites and they looked at academic websites and search some useful information when they had school assignment. Students also reported that there were very few of academic websites for students in Thailand. Furthermore, some students reported that sometimes they intentionally visited the pornographic websites because of their friends' persuasion and their curiosity. They also received pornographic content from e-mail and forwarded those stuff to their friends. Most students reported they have seen the pop-up advertisements about pornographic sites on the Internet and sometimes in search engines. Most students did not have the internet filter program and junk mail filter in their computers because they did not know how to install and thought that those programs could not protect them from the unwanted information. Moreover, majority of students used the Internet alone and did not tell their parents about what kinds of information that they received.

In terms of online game playing behavior, 52.33% of students like to play online game (Table 5), 27.59% played online games frequently, 22.52% like to play the role-play game and 17.65% played violence fighting game occasionally (Table 9 Appendix). In focus group discussion, students who played online game reported that most of them played online game at the Internet café rather than played at home because they paid only 10 baht per hour. The most popular game was Ragnarok which was the RPG (Role-Play-Game). They created their own character; met new friends and sometimes when they got

new items from the game that could make their game character more powerful, they could also sell those items to other persons, and gained some money. In addition, students reported that online game playing effected their study because they could not concentrate in the class when they played game for a long time and sometimes they also skipped the class to play game. Some students thought that when they played online game they were getting in to another realistic world and sometimes they dreamed about the game. In contrast, there were some students who gave up playing online games because they were bored in playing and had wasted a lot of money on the game to pay for game hours and items.

Considering length of time in accessing to the Internet, 77.47% of students were using the Internet less than 3 hours whereas 22.53% of them using the Internet more than 4 hours per visit. Furthermore, students reported in focus group discussion that students who played online game were more likely to access to the Internet more than those who used chat room or accessed to websites. Some of students who play online game reported that they used the Internet to play game at least 4-5 hours per time in school day and over 5 hours to all day in weekend and school holiday.

Factors associated with the inappropriate Internet using behavior

Personal characteristic

Age

Students age 10-14 years were 1.64 times more likely to have inappropriate website using behavior than students age 15 - 19 years.(Table 13) On the other hand, when adjusted for sex, field of study, time of the internet use and by-chance motivational factors; there was no significant association between age and inappropriate website-using behavior. Previous study showed that age was related to the chatting behavior (60) but in this study, age was not significantly associated with chatting behavior because all students in this study were high school students.

Sex

Gender significantly affects the internet using behavior. From multivariate analysis, the results showed that male were more likely to have inappropriate chatting behavior, inappropriate website-using behavior and inappropriate online game playing behavior than female. (Table. 33) This result confirm many evidences of the Internet using behavior studies that the activity on the Internet in male and female were different and male were more likely to be exposed to violent games. (67, 71, 49) Male and female students were different in term of interest and type of the Internet activity. Male play more game, more access to website and chat than female thus male were having more risk to expose to the inappropriate media than female.

Education

Multivariate analysis showed that students who study in field of linguistic were more likely to have inappropriate chatting and inappropriate website using behavior than students who study in the other fields (Table. 33). In addition, univariate analysis showed significant association between junior high school students and inappropriate online game playing behavior (Table 18), but there was no association when adjusted with the other effecting factors. Student's grade in last semester and student's GPA were not included in multivariate analysis because there were small number of students who reported their own grade and GPA (Table 2).

Family factors

Child rearing pattern was associated with the risk of having inappropriate website using behavior and long time accessing to the Internet. Students who had sensitive parents were 2.11 times more likely of having negative website using (Table. 14) and 1.84 times more likely of having long time accessing to the Internet (Table. 24) than student who had sensible parents. On the other hand, the other family characteristics such as parental status, number of family members in household, parent's occupation and parent's education were not associated with the Internet using behavior except mother's income

more than 50,000 baht per month which was significantly influence inappropriate online game playing behavior (Table. 19). Moreover, students whose mother's income more than 25,000 baht per month were more likely to have long time accessing to the internet (Table.24). However, the result contradicts to other previous studies which showed that students who had lower family income were accessing the Internet more. (70, 79) Higher income parents can support more money to their children. Student's who had higher income parents trend to have higher money allowance to buy computer, pay for internet account and pay for online game so they can used internet for a long time and played more game than students who had lower income parents.

Friend factors

Peer factors were strongly associated with the Internet using behavior in students. Students who were influenced by their friends were 1.76 times more likely to have inappropriate chatting behavior and 1.85 times to have inappropriate website-using behavior than students who were not influenced by their friends (Table.10, 15). Furthermore, students who had friends with bad behavior were 3.41 times more likely to have inappropriate chatting behavior, 3.18 times more likely to have inappropriate website-using behavior and 1.70 times more likely to have inappropriate online game playing behavior (Table.10, 15, 20). There were very few studies in Thailand which reported about the association between peer factors and inappropriate Internet behavior. However, students reported in focus group discussion that friends had influences on their Internet using behavior. For examples, kinds of Internet activities, websites and games were influenced by peers. On the other hand, peer factors had no effects on length of time in accessing the Internet. Most students in this study had friend influence, if they had good behavior friend, they should have good behavior following their friends whereas if they had bad behavior friend, they should have bad behavior following their friends too.

Internet using characteristics

Age at first using the Internet

Students who started using the Internet in younger age group tend to be more at risk of having inappropriate chatting behavior and inappropriate online game playing behavior in univariate analysis (Table 11,21). Age at first time using of the Internet had no correlations, when adjusted for personal characteristics, by-chance motivational factors and other effects on Internet using characteristic. However, students who started using the Internet in younger age groups usually exposed to the Internet for a long time, they had a chance to search information, look at websites and expose to by chance motivation factors more than students who started using the Internet in older age groups.

Time of the Internet using

Multivariate analysis showed students who used the Internet more than 4 hours at a time were risk to have inappropriate chatting behavior (Table. 33). This contrast the previous study of chat room behavior of people who spent the least amount of time in the Internet per week were more likely to tell lies in chat room. (49) In addition, students who used the Internet more than 4 hours at a time were 1.83 times more likely to have inappropriate online game playing behavior than students who used the Internet less than 3 hours at a time when adjusted for personal characteristics, by-chance motivational factors and other effects of internet using characteristic. (Table. 33)

Furthermore, students who used Internet 6-10 times per week, and more than 10 times per week were associated with the inappropriate chatting behavior, online game playing behavior and long time accessing the Internet in multivariate analysis (Table 28, 30-31). However, students who excessive used the Internet (>4hours) and frequently used Internet were having more chance of accessing to the inappropriate chatting behavior and online game playing.

Computer placement

A previous study showed the result about television placement. If children had television in their bedroom, they would watch television longer than children who didn't had one in their bedroom (70). The result of univariate analysis showed that students who had computer in their bed room were more likely to have inappropriate chatting behavior,

website using behavior and long time accessing the Internet. However, computer placement was not included in multivariate analysis because it covered only students who used Internet at home. TV watching and Internet using might be comparable because they offer the same type of media for teenager, almost of which were pictures, games, animations which were nearly the same in terms of contents and graphic.

By chance motivation factors

Several studies showed the risk of online enticement such as advertising banners, search engine content, pornographic content in e-mail and strangers in chat rooms increases the risk of inappropriate Internet behavior (13, 38, 44). The result from multivariate analysis in this study supported the previous studies that students who accidentally found pornographic websites via using search engine, had risk of having inappropriate chatting and website-using behavior (Table 28 – 29). Students who were persuaded by strangers on the Internet to chat about sex at least once, was strongly associated with inappropriate chatting behavior, inappropriate website-using and online game playing behavior. Moreover, students who had found advertisement banners which persuaded them to visit the pornographic websites and students who had received e-mail which had pornographic contents were strongly associated with the inappropriate online game playing behavior (Table 29).

The underlying association among independent factors

Although, the results showed some associations between factors and inappropriate Internet behavior, the factors which were associated with the outcome might not have direct effect because some factors might have an interaction among independent variables. For example, higher income parents could support their children to have computer at home and the age of using Internet in this group was younger than lower income family. This might increase duration and frequently of the Internet use. The web of causation is purposed described as follows;

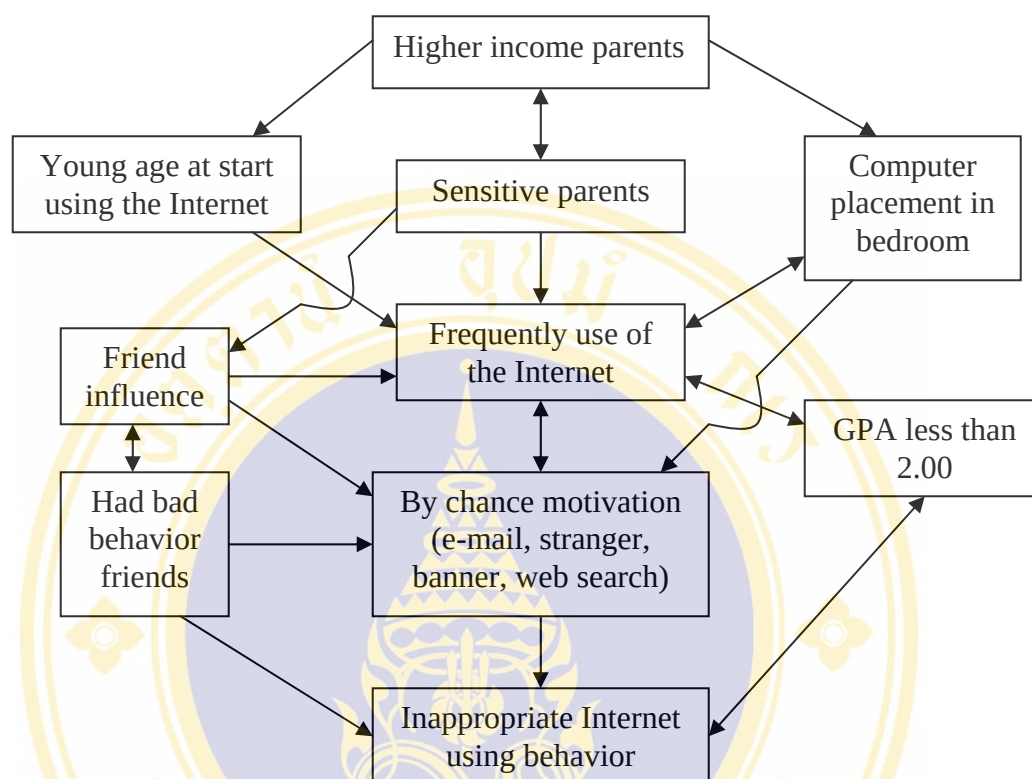


Figure7 The web of causation between factors and inappropriate Internet behavior

The limitation of this study

This study had some limitations. First, results in this study came from the cross-sectional data, thus the relationship among personal characteristics, family factors, friend factors, Internet using characteristics and by-chance motivation factors with the inappropriate Internet using behavior was the snap shot of association. Other observational studies such as case-control study, the prospective cohort study, should be performed to identify the causations between the dependent and independent factors. However, it would be difficult to conduct due to problems in identifying study samples to be case and control, or exposure and non-exposure groups.

Secondly, this study used self-administered questionnaires to measure the association between interested factors and the inappropriate Internet-using behavior without direct observation on behavior. Information bias might have occurred in this study that some students might not give the truthful information about the inappropriate

internet using behavior. To minimize this bias, before distributing the questionnaires, the researcher explained to students about the objective of this study. The researcher let them know that their information was important for this study, but not telling them about the study hypotheses. In addition, the focus group discussion about the Internet-using behavior was done to compare with the results of statistical analysis.

Finally, this study conducted in two secondary schools, one under the Commission on Higher Education, and the other one under the Office of the Basic Education Commission, Ministry of Education. The results from this study could represent the internet-using behavior of high school students in Bangkok metropolitan area but might not be generalized to vocational students and high school students in other provinces because the Internet behavior might be different in the other provinces and other groups of students. This limitation might be reduced by collecting samples from several schools around Thailand. This could not be done in this study, because of the limited budget.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

This cross – sectional study aimed to study the Internet behavior characteristic and the association of factors related to the inappropriate Internet using behavior of high school students in Bangkok metropolitan area. The study was conducted at Ramkhamhaeng Demonstration School and Tepleela School, during February to March 2005. The data was collected by using self – administered questionnaires about Internet using behavior and from focus group discussion. The interested outcomes were focused on 4 areas of the Internet using behavior, inappropriate chatting behavior, inappropriate website using behavior, inappropriate online game playing behavior, and excessive using of the internet. One thousand and thirty students enrolled in this study, which had 92.16 percent of response rate. The mean age was 14.5 ± 1.71 years, which included mostly junior high school (grade 7 – grade 9) 68.66%, male 44.73% and female 55.27%.

Conclusions

Overall, students started using the Internet at an average age of 11.08 years old. Over seventy percent (77.47%) of them used the Internet less than 3 hours each time, 50.61% of students used the Internet between 4.00 – 8.00 p.m., and 63.89% of them used Internet at home. The most popular activity on the Internet was accessing entertainment websites.

The association between factors and inappropriate Internet behavior were analyzed by multivariate analysis. Results showed the significant association with the inappropriate Internet behavior in students who were male, studied in the field of linguistic, accidentally found pornographic website via search engine, being persuaded by stranger to chat about sex, accidentally found pornographic advertisement banner, receiving e-mails with pornographic content, using Internet more than 4 hours each time,

using Internet 6 – 10 times per week and using internet more than 10 times per week. Reducing time of the Internet usage can prevent the inappropriate website accessing, inappropriate online game playing and excessive usage of Internet. In addition, reducing of by-chance motivational factors can prevent inappropriate chatting, website using and online game playing behavior.

Furthermore, univariate analysis showed the significant association with the inappropriate Internet using behavior in students who got grade, or GPA, less than 2.00 in previous semester, or having grade or GPA between 2.01 – 3.00, had peer's influence, had friends with inappropriate behaviors, had sensitive parents, had mother's income higher than 50,000 baht, had parents' income between 25,000 – 49,000 baht, and had computer in their bed room. Student's grade and GPA were associated with inappropriate chatting and online game playing behavior. Peer's influence and behavior were associated with inappropriate chatting, website accessing, and online game playing behavior. Having sensitive parents was related to the excessive using and inappropriate website accessing behavior. However, parents' income also related to the inappropriate online game playing and excessive using of the Internet. Moreover, having computer in private room was highly associated with inappropriate chatting, website accessing, and excessive use of the Internet.

Recommendations

Based on the results of this study, the following issues should be considered for prevention and control of inappropriate Internet using behavior of high school students.

1. Schools should have interventions to reduce the inappropriate Internet behavior, for example launching restriction timing of the Internet usage, educating students on risks and usefulness of Internet and peers' education.

2. By-chance motivational factors increase risk of inappropriate internet using behavior. The internet filter program and junk mail filter should be installed in home computers, school computers and Internet café. However, the risk of meeting strangers in chat rooms is personal concern. Parents and teachers should emphasized to students on being careful when make friend with strangers on the Internet.

3. Online games and websites should be rated to limit the general access, based on the age of users, violence, and limiting time of using.

4. For students who used computer at home, parents should place the computer in living room or other rooms, rather than in students' bed room in order to reduce inappropriate Internet using behavior.

5. Parents should take care of child rearing pattern, restriction time of using the Internet and type of Internet activities, characteristics of their children and their friends.

Recommendations for further study

1. Further investigators should develop research tool to measure Internet addiction and online game addiction. Employing other types of observational study, such as case-control or cohort study to identify causes of internet addiction and online game addiction in high-school students.

2. Interventions concerning changing Internet using behavior in risk groups should be done in schools and should be evaluated on the effectiveness of reducing the inappropriate Internet using behavior.

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APPENDIX A

Table 1 Percentages and number (in parentheses) of child rearing pattern

Child rearing pattern	Frequently	Occasionally	Seldom/hardly	Never	Total
1.Parent always takes care of you with love	53.14 (524)	35.5 (350)	10.75 (106)	0.61 (6)	100 (986)
2.Parent always asks you to participate in family activity	39.05 (385)	42.6 (420)	16.73 (165)	1.62 (16)	100 (986)
3.Parent allows you to make decision in family	26.06 (257)	42.29 (417)	26.27 (259)	5.38 (53)	100 (986)
4.Parent allows you to make decision on your own privacy	55.07 (543)	30.22 (298)	10.95 (108)	3.75 (37)	100 (986)
5.Parent will punish you if you do something wrong	79 (8.01)	13.69 (135)	53.25 (525)	25.05 (247)	100 (986)
6.Parent always strict you both in study and your privacy	25.46 (251)	36.71 (362)	30.83 (304)	7 (69)	100 (986)
7.Parent never makes compliment when you do something good	7.3 (72)	12.37 (122)	23.53 (232)	56.8 (560)	100 (986)
8. You always watch TV with you parent	36 (355)	37.53 (370)	22.52 (222)	3.96 (39)	100 (986)
9. Parent never take care of you	2.13 (21)	6.29 (62)	19.07 (188)	72.52 (715)	100 (986)
10. Parent know your close friends well	14.4 (142)	33.37 (329)	39.66 (391)	12.58 (124)	100 (986)
11. Your parent is not available to participate in family activity	6.09 (60)	16.63 (164)	53.75 (530)	23.53 (232)	100 (986)
12. When you have problem, you always consult parent rather than friends	25.46 (251)	34.89 (344)	33.47 (330)	6.19 (61)	100 (986)
13. You can talk to your parent in every topic	38.34 (378)	35.70 (352)	21.10 (208)	4.87 (48)	100 (986)
14. When you want to go out you have to ask for permission and describe the activity to parent	50.61 (499)	33.87 (334)	13.69 (135)	1.83 (18)	100 (986)
15. When you come back home after study, parent never ask anything	5.38 (53)	11.36 (112)	39.35 (388)	43.91 (433)	100 (986)
16. When your parent not at home, you feel comfortable	11.26 (111)	22.52 (222)	41.78 (412)	24.44 (241)	100 (986)

Child rearing pattern	Frequently	Occasionally	Seldom/hardly	Never	Total
17. When you do something wrong, parent always give you a chance to explain your reason	29.82 (294)	44.12 (435)	22.21 (219)	3.85 (38)	100 (986)
18. If you ask parent for money, you have to explain the reason why you need the money	32.35 (319)	35.60 (351)	26.57 (262)	5.48 (54)	100 (986)
19. When you do something wrong, parent never encourage you	8.62 (85)	19.17 (189)	41.08 (405)	31.14 (307)	100 (986)
20. You are happy at home	57.91 (571)	26.77 (264)	12.68 (125)	2.64 (26)	100 (986)

Table 2 Mean and Standard deviation of Child rearing pattern score.

Child rearing pattern	Mean	Std. Dev.
1. Parent always takes care of you with love	3.41	0.70
2. Parent always asks you to participate in family activity	3.19	0.77
3. Parent allows you to make decision in family	2.89	0.85
4. Parent allows you to make decision on your own privacy	3.37	0.82
5. Parent will punish you if you do something wrong	2.95	0.84
6. Parent always strict you both in study and your privacy	2.81	0.90
7. Parent never makes compliment when you do something good	3.30	0.95
8. You always watch TV with you parent	3.06	0.86
9. Parent never take care of you	3.62	0.70
10. Parent know your close friends well	2.50	0.89
11. Your parent is not available to participate in family activity	2.95	0.80
12. When you have problem, you always consult parent rather than friends	2.80	0.89
13. You can talk to your parent in every topic	3.08	0.89
14. When you want to go out you have to ask for permission and describe the activity to parent	3.33	0.78
15. When you come back home after study, parent never ask anything	3.22	0.85

Child rearing pattern	Mean	Std. Dev.
16. When your parent not at home, you feel comfortable	2.79	0.94
17. When you do something wrong, parent always give you a chance to explain your reason	3.00	0.82
18. If you ask parent for money, you have to explain the reason why you need the money	2.95	0.90
19. When you do something wrong, parent never encourage you	2.95	0.92
20. You are happy at home	3.40	0.81

Table 3 Number and percentages of friends' influent factors

Friend Influent	Frequently	Occasionally	Seldom/hardly	Never	Total
1. If your friends agree or dis-agree with something, you always follow your friend	6.49 (64)	38.95 (384)	49.59 (489)	4.97 (49)	100 (986)
2. You can't refuse your friend, if they ask you to do something wrong	4.46 (44)	12.47 (123)	43.10 (425)	39.96 (394)	100 (986)
3. If you have private problem, you'll consult to your friends	15.72 (15.72)	34.28 (338)	42.90 (423)	7.10 (70)	100 (986)
4. You always do the activity (in and outside school) follow your friends.	12.68 (125)	41.89 (413)	39.86 (393)	5.58 (55)	100 (986)
5. Your friends influence your decision	5.58 (55)	26.06 (257)	45.23 (446)	23.12 (228)	100 (986)
6. Your friends always follow you	4.06 (40)	31.44 (310)	57.71 (569)	6.80 (67)	100 (986)
7. You always go out with your friends after class	10.65 (105)	22.11 (218)	54.77 (540)	12.47 (123)	100 (986)
8. You do not follow your friends if they do something wrong	30.93 (305)	31.03 (306)	26.27 (259)	11.76 (116)	100 (986)
9. You always choose the study subjects which your friends choose	6.80 (67)	32.45 (320)	44.32 (437)	16.43 (162)	100 (986)
10. You like to do activity alone, without friends	4.67 (46)	11.87 (117)	47.57 (469)	35.90 (354)	100 (986)
11. You always have disagree point of view with your friends	7.20 (71)	18.46 (182)	64.00 (631)	10.34 (102)	100 (986)
12. You don't care of your friends' feeling	3.85 (38)	8.01 (79)	40.67 (401)	47.46 (468)	100 (986)

Table 4 Mean and Standard deviation of friends' influent factors score

Friend Influently	Mean	Std. Dev.
1.If your friends agree or dis-agree with something, you always follow your friend	2.47	0.69
2. You can't refuse your friend, if they ask you to do something wrong	1.81	0.82
3.If you have private problem, you'll consult to your friends	2.59	0.84
4. You always do the activity (in and outside school) follow your friends.	2.62	0.78
5.Your friends influence your decision	2.14	0.83
6. Your friends always follow you	2.67	0.66
7.You always go out with your friends after class	2.31	0.82
8.You do not follow your friends if they do something wrong	2.81	1.00
9. You always choose the study subjects which your friends choose	2.30	0.82
10. You like to do activity alone, without friends	3.15	0.80
11. You always have disagree point of view with your friends	2.77	0.73
12.You don't care of your friends' feeling	3.32	0.78

Table 5 Number and percentages of friends' behavior factors

Friend behavior	Frequently	Occasionally	Seldom/hardly	Never	total
1. Excessive expense a	3.85 (38)	8.01 (79)	40.67 (401)	47.46 (468)	100 (986)
2. Skip class/ Go out without permission	4.06 (40)	10.75 (106)	29.31 (289)	55.88 (551)	100 (986)
3. Go to pub and bar	2.54 (25)	7.00 (69)	13.29 (131)	77.18 (761)	100 (986)
4.Very polite	14.91 (147)	44.52 (439)	34.99 (345)	5.58 (55)	100 (986)
5. Using spare time fruitfully	16.23 (160)	44.22 (436)	31.54 (311)	8.01 (79)	100 (986)
6.Drink alcohol	2.84 (28)	5.48 (54)	16.94 (167)	74.75 (737)	100 (986)

Friend behavior	Frequently	Occasionally	Seldom/hardly	Never	total
7. Smoke cigarette	4.56 (45)	7.81 (77)	10.65 (105)	76.98 (759)	100 (986)
8. Intend to study	16.84 (166)	41.68 (411)	30.02 (296)	11.46 (113)	100 (986)
9. Drug abuse	2.33 (23)	4.26 (42)	10.24 (101)	83.16 (820)	100 (986)
10. Always have quarrel with others	3.25 (32)	9.13 (90)	38.84 (383)	48.78 (481)	100 (986)
11. Gamble	5.07 (50)	9.23 (91)	16.43 (162)	69.27 (683)	100 (986)
12. Pay respect to parent/teacher	33.37 (329)	47.87 (472)	15.11 (149)	3.65 (36)	100 (986)
13. Help you when you have problem	28.50 (281)	52.54 (518)	15.82 (156)	3.14 (31)	100 (986)
14. Warn you when you're going to do wrong	27.08 (267)	50.41 (497)	18.56 (183)	3.96 (39)	100 (986)
15. Follow the school rules	30.73 (303)	45.23 (446)	19.88 (196)	4.16 (41)	100 (986)

Table 6 Mean and Standard deviation of friends' behavior factors score

Friend behavior	Mean	Std. Dev.
1. Excessive expense a	2.54	0.80
2. Skip class/ Go out without permission	3.37	0.83
3. Go to pub and bar	3.65	0.72
4. Very polite	2.69	0.79
5. Using spare time fruitfully	2.69	0.84
6. Drink alcohol	3.64	0.72
7. Smoke cigarette	3.60	0.82
8. Intend to study	2.64	0.89
9. Drug abuse	3.74	0.65
10. Always have quarrel with others	3.33	0.77
11. Gamble	3.50	0.86
12. Pay respect to parent/teacher	3.11	0.79
13. Help you when you have problem	3.06	0.75
14. Warn you when you're going to do wrong	3.01	0.78
15. Follow the school rules	3.03	0.82

Table 7 Number and Percentage of Chatting behavior

Chatting Behavior	Frequently	Occasionally	Seldom/hardly	Never	total
1. You always use chat room, and Instant message program	27.28 (269)	27.28 (269)	33.77 (333)	11.66 (115)	100 (986)
2. You always make friends with strangers via chat room	12.47 (123)	24.14 (238)	36.51 (360)	26.88 (265)	100 (986)
3. You're careful when giving personal information to stranger via chat room	44.83 (442)	24.95 (246)	17.14 (169)	13.08 (129)	100 (986)
4. You chat with your friends that you are familiar to	34.48 (340)	22.31 (220)	24.65 (243)	18.56 (183)	100 (986)
5. You've ever made appointment with stranger who you chat with	4.87 (48)	7.61 (75)	14.81 (146)	72.72 (717)	100 (986)
6. You always tell a lie for safety reason	26.17 (258)	30.93 (305)	23.53 (232)	19.37 (191)	100 (986)
7. You always tell a lie for fun	19.68 (194)	24.54 (242)	(31.85) 314	(23.94) 236	100 (986)
8. You've chatted in rude words	3.96 (39)	9.33 (92)	22.21 (219)	64.5 (636)	100 (986)

Table 8 Number and Percentage of Website using behavior

Website using Behavior	Frequently	Occasionally	Seldom/hardly	Never	Total
1. You like to search for useful information	39.55 (390)	36.61 (361)	17.65 (174)	6.19 (61)	100 (986)
2. You've visited to pornographic website intentionally	4.87 (48)	7.30 (72)	21.81 (215)	66.02 (651)	100 (986)
3. You've sent pornographic content to your friends via email	3.14 (31)	6.49 (64)	12.98 (128)	77.38 (763)	100 (986)
4. You have the Internet filter program installed in your computer	9.74 (96)	10.34 (102)	16.33 (161)	63.59 (627)	100 (986)
5. When you found pornographic site, you'll look at it to observe before close that page	9.63 (95)	14.40 (142)	26.37 (260)	49.59 (489)	100 (986)
6. If you have a chance, you'll re-visit to the pornographic site	5.58 (55)	7.51 (74)	19.78 (195)	67.14 (662)	100 (986)
7. You have a junk mail filter in your email inbox	22.11 (218)	18.86 (186)	25.15 (248)	33.87 (334)	100 (986)

Website using Behavior	Frequently	Occasionally	Seldom/hardly	Never	Total
8. You always use the Internet alone	29.92 (295)	28.09 (277)	28.70 (283)	13.29 (131)	100 (986)
9. If you have problem on the Internet, you always tell your parent	15.31 (151)	17.24 (170)	24.75 (244)	42.70 (421)	100 (986)

Table 9 Number and percentage of online games playing behavior

Online games Behavior	Frequently	Occasionally	Seldom/hardly	Never	Total
1. You always play online game	27.59 (272)	21.20 (209)	30.02 (296)	21.20 (209)	100 (986)
2. You play online games which can determine the role-play in each character (RPG-Role Play Game)	22.52 (222)	19.07 (188)	25.35 (250)	33.06 (326)	100 (986)
3. You like to play the violence fighting games	13.79 (136)	17.65 (174)	31.54 (311)	37.02 (365)	100 (986)
4. You have to pay for game member account	10.95 (108)	13.79 (136)	21.60 (213)	53.65 (529)	100 (986)
5. You can control the time when you play online games	31.64 (312)	29.21 (288)	21.30 (210)	17.85 (176)	100 (986)

Table 10 Number and percentage of by chance motivation factors

By chance motivation	Frequently	Occasionally	Seldom/hardly	Never	total
1. You intend to search information about studying but you found pornographic website instead	8.22 (81)	16.33 (161)	36.31 (358)	39.15 (386)	100 (986)
2. Someone persuaded you to talk about sex via using the Internet	3.96 (39)	11.87 (117)	23.94 (236)	60.24 (594)	100 (986)
3. You've found advertising banners invite you to visit the pornographic website	8.32 (82)	16.02 (158)	31.64 (312)	44.02 (434)	100 (986)
4. You've received pornographic content via e-mail	4.26 (42)	9.74 (96)	23.23 (229)	62.78 (619)	100 (986)

APPENDIX B

แบบสอบถาม

พฤติกรรมการใช้อินเทอร์เน็ตของนักเรียนมัธยมศึกษาในเขตกรุงเทพมหานคร

แบบสอบถามชุดที่ _____

เลขประจำตัว _____

(จะถูกเก็บเป็นความลับไม่รวมอยู่ในการวิเคราะห์ข้อมูล)

ส่วนที่ 1 ข้อมูลทั่วไป

คำชี้แจง ส่วนที่ 1 เป็นคำถามเกี่ยวกับข้อมูลสถานะของท่านในปัจจุบัน กรุณาทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับสถานะปัจจุบันของท่านมากที่สุด

1. เพศ ☐ 1. ชาย☐ 2. หญิง

2. อายุ _____ ปี

3. โรงเรียนที่ศึกษา _____

3.1 ระดับชั้น

☐ ม.1☐ ม.2☐ ม.3☐ ม.4☐ ม.5☐ ม.6

3.2 สาขาการเรียน

☐ วิทยาศาสตร์☐ ศิลป์-คำนวณ☐ ศิลป์-ภาษา _____

4. เกรดเฉลี่ยในเทอมที่ผ่านมา _____

5. เกรดเฉลี่ยสะสม _____

ส่วนที่ 2 ข้อมูลด้านครอบครัว

คำชี้แจง ส่วนที่ 2 ถามเกี่ยวกับข้อมูลสถานะครอบครัวของท่านในปัจจุบัน และความรู้สึกที่ท่านมีต่อ “การอบรมเลี้ยงดูของครอบครัว” ที่ท่านได้รับ กรุณาทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับสถานะปัจจุบันของท่านมากที่สุด

6. สถานภาพของบิดามารดาในปัจจุบัน

☐ 1. ทั้งบิดาและมารดาอยู่ด้วยกัน☐ 2. บิดามารดาหย่าร้าง☐ 3. บิดาเสียชีวิต☐ 4. มารดาเสียชีวิต☐ 5. ทั้งบิดาและมารดาเสียชีวิต☐ 6. อื่นๆ โปรดระบุ _____

7. ท่านเป็นบุตรคนที่ _____ ในจำนวนพี่น้องทั้งหมด _____ คน

8. อาชีพของบิดาปัจจุบัน

☐ 1. รับราชการ/รัฐวิสาหกิจ☐ 2. ทำงานเอกชน☐ 3. ค้าขาย/ธุรกิจส่วนตัว☐ 4. รับจ้างทั่วไป☐ 5. ว่างาน/พ่อบ้าน☐ 6. ถึงแก่กรรม☐ 7. อื่นๆ โปรดระบุ _____

9. ระดับการศึกษาของบิดา

- ☐ 1. ประถมศึกษา ☐ 2. มัธยมศึกษาตอนต้น / ปวช.
☐ 3. มัธยมศึกษาตอนปลาย / ปวส. ☐ 4.ปริญญาตรี
☐ 5. สูงกว่าปริญญาตรี

10. อาชีพของมารดาปัจจุบัน

- ☐ 1. รับราชการ/รัฐวิสาหกิจ ☐ 2. ทำงานเอกชน ☐ 3. ค้าขาย/ ธุรกิจส่วนตัว
☐ 4. รับจ้างทั่วไป ☐ 5.ว่างงาน/แม่บ้าน ☐ 6. ถึงแก่กรรม
☐ 7. อื่นๆ โปรดระบุ _____

11. ระดับการศึกษาของมารดา

- ☐ 1. ประถมศึกษา ☐ 2. มัธยมศึกษาตอนต้น / ปวช.
☐ 3. มัธยมศึกษาตอนปลาย / ปวส. ☐ 4.ปริญญาตรี
☐ 5. สูงกว่าปริญญาตรี

12. รายได้ของบิดามารดา / ผู้ปกครอง ต่อเดือน

12.1 รายได้ของบิดา _____ บาท

12.2 รายได้ของมารดา _____ บาท

13. จำนวนเงินที่ท่านได้รับเป็นค่าใช้จ่ายต่อเดือน _____ บาท

14. บุคคลในครอบครัวที่ท่านพูดคุยด้วยบ่อยที่สุด

- ☐ 1. บิดา ☐ 2. มารดา ☐ 3. ทั้งบิดาและมารดา ☐ 4. พี่น้อง
☐ 5. ปู่ย่าตายาย ☐ 6. ลุงป้าน้าอา ☐ 7. อื่นๆ โปรดระบุ _____

15. จำนวนสมาชิกในครอบครัวที่อยู่ในบ้านเดียวกันปัจจุบัน _____ คน

16. บุคคลที่อาศัยอยู่ในบ้านเดียวกันในปัจจุบัน (ตอบได้หลายข้อ)

- ☐ 1. บิดา ☐ 2. มารดา
☐ 3. ปู่, ย่า ☐ 4. พี่/น้องของพ่อ
☐ 5. ตา, ยาย ☐ 6. พี่ / น้อง ของแม่
☐ 7. พี่และน้องของตน ☐ 8. อื่นๆ โปรดระบุ _____

17. คำถามเกี่ยวกับการเลี้ยงดูของครอบครัว ให้ท่านระลึกถึงเหตุการณ์ที่ผ่านมาแล้วว่า พ่อแม่หรือผู้ปกครองได้ปฏิบัติต่อท่านในลักษณะใด โดยการกาเครื่องหมาย ✓ ลงในช่อง เป็นประจำ บ่อยครั้ง นานๆครั้ง ไม่เคยเลย กรุณาตอบคำถามให้ตรงกับความเป็นจริงและความรู้สึกของท่านมากที่สุด เพียงข้อละ 1 ช่องเท่านั้น คำว่า “ผู้ปกครอง” ในแบบสอบถามนี้คือ พ่อแม่หรือผู้ปกครองที่ให้การอบรมเลี้ยงดูท่านมา

วิธีที่ผู้ปกครองปฏิบัติต่อท่าน	เป็น ประจำ	บ่อยครั้ง	นานๆครั้ง	ไม่เคยเลย
17.1) ผู้ปกครองจะแสดงความรักใคร่และเอาใจใส่ต่อท่านเสมอ				
17.2) ผู้ปกครองมักขอให้ท่านมีส่วนร่วมในกิจกรรมต่างๆ ของครอบครัวเสมอ				
17.3) ผู้ปกครองให้สิทธิท่านในการตัดสินใจเกี่ยวกับเรื่องต่างๆภายในครอบครัว				
17.4) ผู้ปกครองให้สิทธิท่านในการตัดสินใจในเรื่องส่วนตัวของท่านเอง เช่น การเลือกเรียน หรือการประกอบอาชีพในอนาคต				
17.5) ผู้ปกครองจะลงโทษท่านอย่างรุนแรงเมื่อท่านกระทำความผิด				
17.6) ผู้ปกครองมักจะเข้มงวดในเรื่องเรียน และเรื่องส่วนตัวของท่าน				
17.7) เมื่อท่านทำผิดต่างๆ เช่น สอบได้คะแนนดี, ชนะการแข่งขันกีฬา ผู้ปกครองไม่เคยแสดงความชื่นชมท่านเลย				
17.8) ท่านดูโทรทัศน์, ภาพยนตร์ หรือฟังวิทยุร่วมกับผู้ปกครองเป็นประจำสม่ำเสมอ				
17.9) ผู้ปกครองไม่เอาใจใส่ดูแลท่านเลย				
17.10) ผู้ปกครองมีความรู้จักคุ้นเคยกับเพื่อนสนิทของท่านเป็นอย่างดี				
17.11) ผู้ปกครองของท่านไม่ค่อยมีเวลาว่างในการทำกิจกรรมร่วมกับครอบครัว				
17.12) เมื่อมีปัญหาส่วนตัวท่านมักปรึกษา ผู้ปกครองมากกว่าปรึกษาเพื่อนเสมอ				
17.13) ท่านสามารถพูดคุยกับผู้ปกครองได้ทุกเรื่อง				

วิธีที่ผู้ปกครองปฏิบัติต่อท่าน	เป็นประจำ	บ่อยครั้ง	นานๆครั้ง	ไม่เคยเลย
17.14) เวลาท่านจะไปไหนต้องขออนุญาตผู้ปกครอง และชี้แจงเรื่องที่จะไปให้ละเอียด				
17.15) หลังเลิกเรียน เมื่อกลับถึงบ้าน ผู้ปกครองของท่านไม่เคยสนใจถามไถ่				
17.16) ถ้าผู้ปกครองไม่อยู่บ้าน ท่านจะรู้สึกสบายใจและโล่งใจ				
17.17) เมื่อท่านทำความผิด ผู้ปกครองมักให้อีกโอกาส ท่านชี้แจงเหตุผล				
17.18) ถ้าท่านขอเงินผู้ปกครองไปซื้อของ ท่านจะต้องชี้แจงถึงการใช้จ่ายให้ผู้ปกครองทราบอย่างละเอียด				
17.19) เวลาท่านทำความผิด ผู้ปกครองไม่ค่อยพอใจ				
17.20) ท่านอยู่บ้านด้วยความอบอุ่นใจ				

ส่วนที่ 3 ข้อมูลเกี่ยวกับเพื่อนในสถานศึกษา

คำชี้แจง ให้ท่านระลึกถึงเหตุการณ์ที่ผ่านมาแล้วว่า ท่านและเพื่อนสนิทของท่านปฏิบัติต่อกันอย่างไร โดยการกาเครื่องหมาย √ ลงในช่อง เป็นประจำ บ่อยครั้ง นานๆครั้ง ไม่เคยเลย โดยตอบคำถามให้ตรงกับความเป็นจริง และความรู้สึกของท่านมากที่สุด เพียงข้อละ 1 ช่องเท่านั้น

18. คำถามเกี่ยวกับเพื่อนในสถานศึกษา

ท่านและเพื่อนปฏิบัติต่อกันอย่างไร	เป็นประจำ	บ่อยครั้ง	นานๆครั้ง	ไม่เคยเลย
18.1) ถ้าเพื่อนเห็นด้วยหรือไม่เห็นด้วยในสิ่งใด ท่านมักจะคล้อยตามเพื่อน				
18.2) ท่านไม่กล้าปฏิเสธเพื่อน หากเพื่อนขอร้องให้ทำสิ่งที่ผิด				
18.3) ถ้ามีปัญหาเรื่องส่วนตัวท่านมักปรึกษาเพื่อน				
18.4) ท่านมักจะทำกิจกรรมต่างๆตามที่เพื่อนชักชวนทั้งในและนอกโรงเรียน				
18.5) เพื่อนมีอิทธิพลต่อการตัดสินใจของท่าน				
18.6) เพื่อนๆ เชื่อถือและทำตามท่าน				

ท่านและเพื่อนปฏิบัติต่อกันอย่างไร	เป็นประจำ	บ่อยครั้ง	นานๆ ครั้ง	ไม่เคยเลย
18.7) ท่านมักจะไปเที่ยวกับเพื่อนหลังเลิกเรียน				
18.8) ท่านจะไม่ทำตามเพื่อนในสิ่งที่ไม่ดี				
18.9) ท่านมักจะเลือกเรียนในวิชาที่เพื่อเลือกเรียนด้วย				
18.10) ท่านชอบทำกิจกรรมต่างๆ โดยไม่มีเพื่อน				
18.11) ท่านมักแสดงความคิดเห็นขัดแย้งกับเพื่อนในกลุ่ม				
18.12) ท่านไม่สนใจความรู้สึกรักของเพื่อน				
เพื่อนของท่านมีพฤติกรรมเหล่านี้บ่อยแค่ไหน	เป็นประจำ	บ่อยครั้ง	นานๆ ครั้ง	ไม่เคยเลย
18.13) ใช้จ่ายฟุ่มเฟือย				
18.14) หนีโรงเรียน / หนีผู้ปกครอง ไปเที่ยว				
18.15) ไปเที่ยวในสถานบันเทิง บาร์ ไนต์คลับ ดิสโกเทค ต่างๆ				
18.16) มีความประพฤติเรียบร้อย ปรึกษาจากสุภาพ				
18.17) ใช้เวลาว่างให้เป็นประโยชน์ต่อตนเองและผู้อื่น				
18.18) ดื่มสุรา				
18.19) สูบบุหรี่				
18.20) เอาใจใส่ในการเรียน ศึกษาความรู้เพิ่มเติมเสมอ				
18.21) คิดหาเหตุผลให้โทษบางชนิด				
18.22) มีเรื่องทะเลาะวิวาทกับคนอื่น				
18.23) เล่นการพนัน เช่น พนันบอล, โด๊สสนุกเกอร์ ฯลฯ				
18.24) เคารพเชื่อฟังผู้ปกครอง ครูอาจารย์				
18.25) ให้ความช่วยเหลือเมื่อท่านมีปัญหาต่างๆ				
18.26) เตือนท่านเมื่อท่านจะกระทำความผิด				
18.27) ปฏิบัติตามกฎหมายระเบียบของโรงเรียน				

ส่วนที่ 4 ข้อมูลด้านลักษณะการใช้งานอินเทอร์เน็ต

คำชี้แจง ให้ท่านระลึกถึงเหตุการณ์ที่ผ่านมาแล้วว่า ท่านมีการใช้งานอินเทอร์เน็ตอย่างไรในช่วงเวลาที่ผ่านมา โดยตอบคำถามให้ตรงกับความเป็นจริงของท่านมากที่สุด

19. ท่านใช้อินเทอร์เน็ตตั้งแต่อายุ _____ ปี

20. ระยะเวลาที่เล่นอินเทอร์เน็ตต่อครั้งประมาณ _____ ชั่วโมง

21. จำนวนครั้งที่เล่นอินเทอร์เน็ตต่อสัปดาห์ _____ ครั้ง

22. ช่วงเวลาที่ท่านใช้อินเตอร์เน็ตบ่อยที่สุด (ตอบได้มากกว่า 1 ข้อ)

- ☐ 8.00 – 12.00 น. ☐ 12.00 – 16.00 น.
☐ 16.00 – 20.00 น. ☐ 20.00 – 24.00 น.
☐ 0.00 – 4.00 น. ☐ 4.00 – 8.00 น.

23. บุคคลที่แนะนำให้รู้จักและใช้อินเตอร์เน็ตเป็นครั้งแรก

- ☐ 1. บิดา/มารดา/ผู้ปกครอง ☐ 2. ครู/อาจารย์ ☐ 3. เพื่อน
☐ 4. พี่น้อง ☐ 5.ญาติ ☐ 6. เรียนรู้ด้วยตนเอง
☐ 7. อื่นๆ โปรดระบุ _____

24. สถานที่ที่ท่านเล่นอินเตอร์เน็ตเป็นประจำ (ตอบได้มากกว่า 1 ข้อ)

- ☐ 1. ที่บ้าน/ห้องพัก (ตอบข้อ 25) ☐ 2. ที่โรงเรียน
☐ 3. ที่บ้านเพื่อน ☐ 4. ที่บ้านญาติ
☐ 5. ที่สถานบริการเอกชน/ร้านอินเตอร์เน็ตคาเฟ่ ☐ 6. อื่นๆ โปรดระบุ _____

25. (สำหรับผู้ที่ตอบว่าที่บ้านในข้อ 24.) ตำแหน่งของคอมพิวเตอร์ที่ตั้งภายในบ้าน

- ☐ 1. ห้องนั่งเล่น/ห้องดูโทรทัศน์ (ส่วนรวมของบ้าน)
☐ 2. ห้องส่วนตัวของท่าน, ห้องนอนของท่าน
☐ 3. ห้องทำงานผู้ปกครอง
☐ 4. อื่นๆ ระบุ _____

26. กิจกรรมบนอินเตอร์เน็ตที่สนใจและใช้เป็นประจำ (ตอบได้มากกว่า 1 ข้อ)

- ☐ 1. การสืบค้นข้อมูลแบบเครือข่ายใยแมงมุม
☐ 2. การเข้าใช้เครื่องระยะไกล (Remote login)
☐ 3. การเล่นเกมออนไลน์

3.1 ชื่อของเกมส์ที่เล่นประจำ (ตอบได้มากกว่า 1)

- ☐ 4. การสนทนาผ่านเครือข่าย (Chat)

4.1 ชื่อโปรแกรมที่ใช้ในการสนทนาเป็นประจำ _____

4.2 ห้องสนทนาที่เข้าประจำ _____

- ☐ 5. การรับส่งจดหมาย ไปรษณีย์อิเล็กทรอนิกส์ (E-mail)

5.1 บริษัท E-mail ที่ท่านใช้บริการเป็นประจำ _____

- ☐ 6. การเข้าชมเว็บไซต์เพื่อความบันเทิง

- ☐ 7. การดาวน์โหลดข้อมูล, เพลง, เกมส์ หรือ Software

- ☐ 8. การซื้อสินค้าและบริการผ่านเครือข่าย

- ☐ 9. อื่นๆ โปรดระบุ _____

27. โปรดระบุชื่อเว็บไซต์ที่ท่านเข้าชมบ่อยที่สุดมา 3 ชื่อ

- 1) _____
- 2) _____
- 3) _____

28. โปรดระบุชื่อเว็บไซต์ที่มีเนื้อหาสาระที่เป็นประโยชน์ในเชิงวิชาการมา 3 ชื่อ

- 1) _____
- 2) _____
- 3) _____

29. โปรดระบุชื่อเว็บไซต์ที่ท่านเคยได้เข้าและพบว่ามีความน่าสนใจในข่าวของสื่อลามกอนาจาร

- 1) _____
- 2) _____
- 3) _____

30. พฤติกรรมการใช้อินเทอร์เน็ต

คำชี้แจง ให้ท่านระลึกถึงเหตุการณ์ที่ผ่านมาแล้วว่า ท่านมีประสบการณ์การใช้งานอินเทอร์เน็ตเป็นอย่างไร โดยการกาเครื่องหมาย ✓ ลงในช่อง เป็นประจำ บ่อยครั้ง นานๆครั้ง ไม่เคยเลย โดยตอบคำถามให้ตรงกับความ เป็นจริงและความรู้สึกของท่านมากที่สุด เพียงข้อละ 1 ช่องเท่านั้น

ท่านมีพฤติกรรมการใช้อินเทอร์เน็ตดังต่อไปนี้บ่อยแค่ไหน	เป็น ประจำ	บ่อยครั้ง	นานๆครั้ง	ไม่เคยเลย
30.1) ท่านใช้โปรแกรมในการสนทนาผ่านเครือข่ายอินเทอร์เน็ต (Chat room)				
30.2) ท่านรู้จักเพื่อนใหม่ หรือ คนแปลกหน้าผ่านการสนทนาบนเครือข่ายอินเทอร์เน็ต (Chat room)				
30.3) ท่านจะระมัดระวังเป็นพิเศษในการบอกข้อมูลส่วนตัวของตนเอง เช่น ที่อยู่ เบอร์โทรศัพท์ รูปถ่าย เมื่อพูดคุยกับคนแปลกหน้าผ่านห้องสนทนา (Chat room)				
30.4) ท่านใช้โปรแกรมสนทนาผ่านเครือข่ายอินเทอร์เน็ต (Chat) พูดคุยกับคนรู้จัก				
30.5) ท่านเคยนัดพบกับบุคคลแปลกหน้าที่คุยกันทางอินเทอร์เน็ต				
30.6) ท่านให้ข้อมูลที่ไม่เป็นความจริงเกี่ยวกับตัวท่านทาง Chat room เพื่อความปลอดภัย				
30.7) ท่านมักจะโกหกในการสนทนาผ่าน Chat room เพื่อความสนุกสนาน				

ท่านมีพฤติกรรมการใช้อินเทอร์เน็ตดังต่อไปนี้บ่อยแค่ไหน	เป็นประจำ	บ่อยครั้ง	นานๆครั้ง	ไม่เคยเลย
30.8) ท่านพิมพ์คำสนทนาที่หยาบคายหรือคำพูดหรือคำพูดเกี่ยวกับการมีเพศสัมพันธ์กับบุคคลบน Chat room หรือ บนเวปบอร์ด (webboard)				
30.9) ท่านนิยมนั่งค้นหาข้อมูลทางการศึกษาและข้อมูลที่เป็นประโยชน์บนอินเทอร์เน็ต				
30.10) ท่านเคยตั้งใจที่จะสืบค้นข้อมูลการเรียนแล้วกลับพบเว็บไซต์ที่มีเนื้อหาลามกอนาจารแทน				
30.11) ท่านเคยถูกชักชวนให้พูดคุยเรื่องเพศสัมพันธ์กับบุคคลบนอินเทอร์เน็ต				
30.12) ท่านเคยพบโฆษณาเชิญชวนให้เข้าเว็บไซต์ที่มีเนื้อหาลามกอนาจาร				
30.13) ท่านเคยตั้งใจเข้าไปดูสื่อลามกอนาจารบนเว็บไซต์				
30.14) ท่านเคยได้รับไปรษณีย์อิเล็กทรอนิกส์ (e-mail) ที่มีเนื้อหาเกี่ยวข้องกับการอนาจาร				
30.15) ท่านเคยส่งรูปภาพหรือข้อความที่มีเนื้อหาลามกอนาจาร ผ่าน e-mail ให้กับเพื่อน				
30.16) คอมพิวเตอร์ที่ท่านใช้มีการติดตั้งโปรแกรมกรองเว็บไซต์ไม่เหมาะสม เช่น เว็บไซต์ลามกอนาจาร				
30.17) เมื่อพบเว็บไซต์ลามกอนาจาร ท่านจะสำรวจดูเว็บไซต์นั้นก่อนระยะหนึ่ง แล้วจึงปิดหน้าเว็บไซต์นั้น				
30.18) เมื่อพบเว็บไซต์ลามกอนาจารท่านมักจะกลับไปเยี่ยมชมอีกเมื่อมีโอกา				
30.19) ท่านมีการจัดการระบบป้องกันเมลล์ขยะ (Junk mail) ในไปรษณีย์อิเล็กทรอนิกส์ (e-mail) ของท่าน				
30.20) ท่านมักจะเล่นเกมสออนไลน์ผ่านเครือข่าย				
30.21) ท่านเล่นเกมสออนไลน์ที่ท่านสามารถกำหนดตัวละครที่เป็นบทบาทสมมุติขึ้นมาในเกมสนั้น (RPG – Role Play Game)				
30.22) ท่านเล่นเกมสเกี่ยวกับการต่อสู้ที่มีเนื้อหารุนแรง				
30.23) ท่านต้องเสียเงินค่าสมาชิกในการสมัครเป็นสมาชิกบริการเกมสออนไลน์ต่างๆ				

ท่านมีพฤติกรรมการใช้อินเทอร์เน็ตดังต่อไปนี้บ่อยแค่ไหน	เป็นประจำ	บ่อยครั้ง	นานๆครั้ง	ไม่เคยเลย
30.24) ท่านสามารถควบคุมตนเองให้เล่นเกมสัปดาห์ละกี่ชั่วโมงตามที่ท่านกำหนด				
30.25) ท่านนิยมใช้อินเทอร์เน็ตตามลำพัง				
30.26) ท่านมักจะบอกเล่าให้ผู้ปกครองทราบ เมื่อพบเว็บไซต์ลามกอนาจาร หรือพบเจอบุคคลที่ไม่พึงประสงค์บนอินเทอร์เน็ต				

31. ท่านใช้เวลาในการเล่นอินเทอร์เน็ตหรือเกมออนไลน์อย่างน้อยกี่ชั่วโมงต่อครั้ง _____ ชั่วโมง
32. พ่อแม่หรือผู้ปกครองของท่านเสียค่าใช้จ่ายในการเล่นอินเทอร์เน็ตของท่านอย่างน้อยเดือนละประมาณ _____ บาท
33. เมื่อประสบปัญหาจากบุคคลในห้องสนทนา (Chat room) หรือ จากการได้รับข้อมูลลามกอนาจาร ทางอินเทอร์เน็ต ท่านมักจะปรึกษาใคร
- ☐ 1. บิดา มารดา/ผู้ปกครอง ☐ 2. ครู/อาจารย์
- ☐ 3. พี่น้อง ☐ 4. เพื่อน
- ☐ 5.ญาติ ☐ 6. ไม่ปรึกษาใคร
- ☐ 7. อื่นๆ โปรดระบุ _____
34. ท่านเคยเล่นเกมออนไลน์หรือไม่?
- ☐ 1. เคย (ตอบข้อ 35) ☐ 2. ไม่เคย (ข้ามไปข้อ 36)
35. ถ้าเคย ท่านเสียค่าใช้จ่ายในการใช้บริการเดือนละเท่าไร
- ☐ 1. < 100 บาท ☐ 2. 100-200 บาท ☐ 3. 200-500 บาท
- ☐ 4. 500 บาทขึ้นไป ☐ 5. อื่นๆ โปรดระบุ _____
36. ท่านมีความคิดเห็นว่าการใช้อินเทอร์เน็ตหรือเกมออนไลน์เป็นประจำส่งผลต่อสุขภาพร่างกายอย่างไร? (ตอบได้มากกว่า 1 ข้อ)
- ☐ 1. ปวดตา ☐ 2. ความเมื่อยล้า
- ☐ 3. ขาดการออกกำลังกาย ☐ 4. รับประทานอาหารไม่ตรงเวลา
- ☐ 5. เกิดความคิดเพื่อฝัน ☐ 6. พักผ่อนไม่เพียงพอ
- ☐ 7. ไม่มีสมาธิในการเรียนหนังสือ ☐ 8. ไม่มีผลต่อสุขภาพใดๆเลย
- ☐ 9. อื่นๆ โปรดระบุ _____

@^_^@ ขอบขอบคุณที่ตอบแบบสอบถาม @^_^@

แผนการสนทนากลุ่ม (Group discussion)

**เรื่อง ปัจจัยที่มีความสัมพันธ์ต่อพฤติกรรมการใช้อินเตอร์เน็ตที่ไม่เหมาะสม
ของนักเรียนมัธยมศึกษาในเขตกรุงเทพมหานคร**

ผู้ดำเนินการสนทนา

นางสาว รุ่งกานต์ อินทวงศ์

ผู้ร่วมการสนทนา

ตัวแทนของนักเรียนมัธยมศึกษา ปีที่ 1-6 กลุ่มละ 5 – 12 คน จำนวน 3-4 กลุ่มต่อโรงเรียน

อุปกรณ์ที่ใช้ประกอบการสนทนา

1. ปากกา
2. กระดาษ chart
3. อุปกรณ์บันทึกเสียง
4. น้ำและขนม

ระยะเวลาที่ใช้ในการสนทนากลุ่ม

30 นาที

สถานที่

โรงเรียนสาธิตรามคำแหง และ โรงเรียนเทพศิลา

ขั้นตอนการดำเนินการสนทนากลุ่ม

1. แนะนำตัว, กิจกรรมละลายพฤติกรรม
2. ชี้แจงวัตถุประสงค์
3. เริ่มดำเนินการสนทนากลุ่ม
4. สรุปประเด็น และข้อเสนอแนะ

แนวคำถามในการสนทนากลุ่ม

1. พฤติกรรมการเล่นอินเตอร์เน็ตของนักเรียนมัธยม
 - พฤติกรรมการเล่นอินเตอร์เน็ตในสถานที่ต่างๆ เช่น บ้าน โรงเรียน ร้านอินเตอร์เน็ต
 - ความนิยมในการใช้อินเตอร์เน็ต
 - กิจกรรมที่นิยมในอินเตอร์เน็ต
2. พฤติกรรมการเล่นเกมออนไลน์
3. ประโยชน์และอันตรายที่เกิดจากการใช้อินเตอร์เน็ต
4. พฤติกรรมการใช้อินเตอร์เน็ตที่ไม่เหมาะสม ที่เคยพบเห็นจากตนเอง หรือเพื่อนร่วมสถาบัน
5. สาเหตุของการใช้อินเตอร์เน็ตที่ไม่เหมาะสม
6. ความคิดเห็นของนักเรียนต่อพฤติกรรมการใช้อินเตอร์เน็ตที่ไม่เหมาะสม
7. ข้อเสนอแนะเพิ่มเติม

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