

THE INFLUENCES OF THE SIXTH GRADERS' PARENTS' INTERNET LITERACY AND PARENTING STYLE ON INTERNET PARENTING

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ABSTRACT

This study aims to explore the sixth grade students' parents' Internet literacy and parenting style on Internet parenting in Kaohsiung County in Taiwan. Upon stratified cluster sampling, a total of 822 parents from 34 classes in 28 schools participated in this study. The descriptive statistics and chi-square test were used to analyze the responses of the "Internet parenting questionnaire." The findings of this study include: (1) the current situations of the sixth grade students' parents' behavior of Internet usage, Internet literacy, parenting style, and Internet parenting are explored and analyzed, and (2) there are significant correlations among the students' parents' behavior of Internet usage, parenting style, Internet literacy, and Internet parenting.

Keywords: Internet literacy, Parenting style, Internet parenting

INTRODUCTION

According to "Survey on current broadband, mobile and wireless applications and demands in families in Taiwan" of ACI-FIND (Foreseeing Innovative New Digservices) by Institute for Information Technology in 2006, the current popularity rate of personal computers per household in Taiwan is 79.3%. In average, each family has 1.5 computers and family Internet connection popularity rate is 71.7%, indicating that broadband and Internet popularity is 60%. With the prevailing of family Internet, Internet becomes an important entertaining and social tool for children due to the convenience, privacy, and interaction of Internet. Many of children spent plenty of time on Internet which significantly influences their mental and physical development as well as results in social and family problems (Wen & Shih, 2008). In addition, according to "Survey on junior high and elementary school students' digital capacity and opportunity" by UDN Marketing Research (2006), e-popularity rates of junior high and elementary school students are high, and it is as popular as national education.

O'Hanlon also reported that there's no difference between race, gender and academic background in student's Internet usages (2002). The average earliest age approaching computers is 7.9 years old (around 3rd grade). The findings of the survey are similar to findings of foreign studies (Mokhtar, Majid & Foo, 2008). Thus, the potential problems, such as students' Internet indulgence and addiction are concerned. Additionally, modern parents' parenting style is different from those of in the past. Some studies suggest that positive parenting will positively influence children's life adjustment; inappropriate parenting style would negatively influence children's complete life development (Kong & Li, 2009). However, elementary school students' mental development is not mature yet and if they wallow in online games, how will they return to the reality? It is an important issue for parents, educators, and policy makers.

Family education thus becomes critical. Elementary school students access Internet at home mostly (Kuiper, Volman & Terwel, 2008). Lin (2000) reported that in Taiwan, only 27% of parents will monitor their children's online activities and this result is extremely different from American parents (78%). Regarding the monitoring dimensions, most of parents in Taiwan concern about the influence of Internet usage time on children's daily schedule and neglect their online content. Shih (2003) indicated that parents' attitude toward children's Internet usage would directly influence children's Internet addiction. In order to avoid the unfortunate incidents, parents' Internet management and attitude will be extremely important. Family is the main growth and learning environment for children. Children's safe learning and

growth will rely on parents' care and monitoring. Thus, the influence of parents' Internet literacy and parenting style on Internet parenting should be concerned and cannot be neglected. The purposes of this study are to explore current situations of the sixth grade students' parents' behavior of Internet usage, Internet literacy, parenting style and Internet parenting, and to examine the relationship between the sixth grade students' parenting style, Internet literacy and Internet parenting.

LITERATURE REVIEW

The prevalence of Internet poses great threat to the safety of children, especially to their psychological and behavioral development. Many scholars have investigated parental responsibility of children's online behavior and parents' influence on children's attitudes towards Internet as well as positive behavioral development. Related literature on children's online behavior and parents' Internet literacy is illustrated as follows:

Elementary School Students' Online Behavior

As the Internet becomes widespread, the users' age tends to be lower than before. Studies on global information website of Taiwan elementary school students' learning showed that the elementary school students performed better in using browsers and data searching, and performed worse in acquiring and organizing data. In addition, the sixth grade students' learning efficacy is significantly higher than that of their fifth grade counterparts. However, there is no gender difference in learning efficacy (Huang, Lin & Lv, 2006, 2007; Hong & Liu, 2007). Furthermore, the features of the elementary school students' online behaviors are listed as follows:

1. The most common place for using the Internet is home (Huang, 2002; Ye, 2003; Valcke, Bonte, De Wever & Rots, 2010). However, Li (2004) suggested that students in different school scales have different usage sites of Internet.
2. Playing online games and collecting information are the main purposes for students to use the Internet (Huang, 2002; Liu, 2003). Li (2004) suggested that boys and girls as well as students from different residential areas have different purposes for using the Internet. Chang (2003) presented a contradictory research finding that gender and residential areas show no impact on students' online behavior.
3. Students' online hours were between 1 and 3 hours (Liu, 2003). Huang (2003) found there is not much difference in students who use Internet under 1 hour per day. Li (2004) suggested that since students spent 8.95 hours on online games only weekly, the overall Internet hours should be higher.
4. Among all types of online activities and behaviors, parents who permit children playing online games constitute the largest population, followed by those who permitted collecting data.
5. Students' "Internet addiction" phenomenon has become more and more serious (Hansen 2002; Block, 2008).

According to the literature, children's online behavior is more "entertainment-oriented," which is mainly for playing computer games. Since the sites of using Internet are mainly private homes, parents should discipline and instill their children with proper online behavior and safety (Colley & Comber, 2003; Blais, Craig, Pepler & Connolly, 2008).

Types of Parenting Styles

Sears, Macobby & Levin (1957) suggested that parental discipline is essentially interacted and correlated by parental attitudes, faith, and interests, which forms different behavioral types (Allen, 2000; Martinez, Garcia & Yubero, 2007). Ang also found that father and mother's parenting style are completely different (2006). Parenting styles can be divided into three types: one-dimensional, two-dimensional, and multi-dimensional (Koohang, 1987, Greenwood & Hickman, 1991). Definitions are stated as follows:

1. One-dimensional parenting style

Parenting style is considered as the most effective way to exercise family socialization. The three major types of the one-dimensional parenting style: authoritarian, authoritative, and permissive.

2. Two-dimensional parenting style

In reality, parents parenting styles should have different dimensions. And parental personality traits are assumed to play a role in the parenting behaviors (Huver, Otten, Vries & Engels, 2010; Winsler, 2005). The influence of each dimension of the parenting styles on children will interact with other dimensions (Soward, 2006). Two independent dimensions constitute four quadrants. For example, William (1958) broadly categorized parenting styles as authoritarian and caring with various degrees, namely high authoritative and high caring, high authoritative and low caring, low authoritative and high caring, low authoritative and low caring. Roe & Siegelman (1963) proposed ten types of parenting styles based on dimensions of caring-rejection and negligence-demands. Schaefer (1959) proposed 14 types of parenting styles based on dimensions of caring-hostility and autonomy and control. Maccoby & Martin (1983) categorized parenting types as authoritative, lax and non-interfering, authoritarian, negligent and aloof. Generally speaking, two-dimensional classification is used more frequently than the others.

3. Multi-dimensional parenting style

In categorizing types of multi-dimensional parenting styles, the most prominent one is proposed by Becker (1964). He classified parenting styles into three dimensions: restrictiveness-permissive indulgence, warmth-hostility, and anxious emotion involvement-calm detachment. Based on these dimensions, Becker subdivides them into eight types, which are permissive, democratic, anxious neurotic, neglecting, strict control, authoritative, organized effective, and overprotective. Hetherington and Frankie (1967) divided parenting styles into dimensions of warmth, dominance, and conflict. Although their classification is more complete, it is less practicable due to its complexity.

Internet Literacy

The Internet and the World Wide Web (WWW) play significant roles in revolutionizing access to location and use of information. The Internet, a network of networks, provides access to remote computers, electronic mail, file transfer, global bulletin boards, discussion lists, web blogs wikis, and a variety of tools to share and disseminate information. The concept of “Internet literacy” emerges in the era of Internet technology (Saranto & Hovenga, 2004). Some researchers suggested that Internet literacy is significantly correlated with student’s achievement. Some don’t think so. (Bayram & Comek, 2009). Internet literacy involves basic computer literacy and concepts about Internet (McClure, 1994; Revercomb, 2005). Bawden (2001) suggested that Internet literacy is part of information literacy, which is constituted by traditional literacy, computer literacy, library literacy, network literacy, and digital literacy (Bawden & Robinson, 2002).

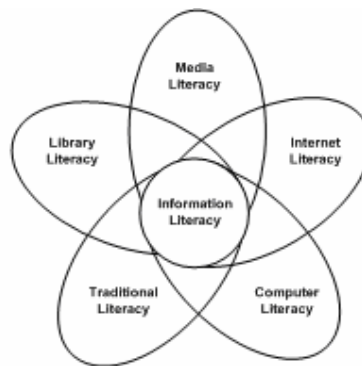


Figure 1. Conceptual map of Information literacy (Bawden, 2001; Bawden & Robinson, 2002).

Reviewing studies on the relationship between elementary school student and parental Internet literacy (Chen, 2002; Li, 2004; Hsu, 2005) found that:

1. Internet access at homes, longer Internet hours, and parental Internet literacy could increase students’ Internet literacy and skills.
2. Family and personal variables, such as grade, years of Internet use, parental Internet literacy, parental support, parental intervention, location and time of Internet use, have significant influence on elementary school students’ Internet literacy and digital literacy.

Parenting Behaviors and Attitudes

1. Internet parenting

According to the data, when parents discipline children’s use of Internet, they would establish use standard, and rely on the length of time and permission to use Internet as common disciplines. Also parents will attempt to manage children’s access to and use the Internet in the family all the time. (Livingstone, 2007; Magid, 1998). Therefore, based on Liao’s (2006) “Survey on elementary school students’ online behavior and parental involvement in children’s online activity” and Yen’s (2002) “Survey on elementary school students’ Internet use,” this study organizes parental discipline of children’s online behavior into the following types:

- (1) Frequency of discipline on children’s online behavior: 1) usually; 2) sometimes; 3) seldom; 4) non-interfering.
- (2) Ways of discipline: 1) establishing norms; 2) restriction on the length of Internet use; 3) location of Internet use; 4) applying for the web connect system.
- (3) Disciplining children’s online activities: going to Internet cafes, chat rooms, making friends, online games, online shopping, downloading illegal software and files.
- (4) Managing children’s online content: checking websites that children have browsed
- (5) Restricting children’s Internet activities: chat rooms, making friends, playing online games, and online shopping

2. Attitudes of Internet parenting

Huang (2003) found that, regarding Internet activities, students’ whose parents “encourage their use of Internet and instructing them” have higher exposure to the information learning than those with parents who “neglect and never ask” and “strictly forbid the use of Internet.” According to a report released by the National School Boards Foundation

(NSBF, 2000), most parents recognize the positive use of Internet, many of whom expect their children to use Internet for their education, and believe that Internet is safe for children. Most parents support their children's use of Internet and think that Internet brings their children positive gains (Yen, 2002; Jones, 2006).

In addition, with respect to supporting attitudes, most studies reveal that, parental support has positive effect on children's attitudes toward computers, which confirm the general belief that these two attitudes are interlinked (Na and Chia, 2008; Van, 2010). As a result, parental support will prompt children to learn, get in touch with Internet, and improve their Internet literacy. This study directs at parents' attitudes toward children's use of Internet and categorizes these parental attitudes in "survey on Internet parenting." Statements of Internet parenting are presented as follows:

1. Frequency of instructing children to use Internet: "every time," "once in a while," "seldom," and "never"
2. Frequency of encouraging children to use Internet: "every time," "once in a while," "seldom," and "never"

Based on the previous statement and literature, the study constructs a survey of parental discipline of children's Internet use, and uses it as a foundation for the study.

RESEARCH METHODOLOGY

Research Subjects

This study adopted questionnaire survey method and treated elementary school grade 6 students' parents in Kaohsiung County as research subjects. By stratified cluster sampling, according to Bureau of Education of Kaohsiung County Government, the researcher divided the administrative districts into Fengshan District, Gangshan District and Chishan District and extracted the parents of grade 6 students in 1~3 classes in 15 elementary schools in Fengshan District, 10 elementary schools in Gangshan District and 3 elementary schools in Chishan District as the participants according to proportion of number of the elementary grade 6 students. Participants included the parents in 34 classes and 28 schools. A total of 1020 questionnaires were distributed with 822 valid responded. The return rate was 80.58%.

Research Tools

The research tool was a self-designed questionnaire: "the Survey on influence of parents' Internet literacy and parenting style on Internet parenting." It was a Likert 5-point scale. The content of the questionnaire includes current Internet usage, parents' Internet literacy, parenting style, and Internet parenting. After the experts' review, the draft of questionnaire was properly modified. The researchers then conducted pretest and obtained .947 of Cronbach's α . In addition, the researchers tested the construct validity of the questionnaire through factor analysis. The cumulative explained variance of common factor was 66.765%. As to parents parenting style, the overall Cronbach's α was 0.819. Regarding the validity, its total variance explained was 58.146%. It demonstrated that the questionnaire obtained fine construct validity.

Research Procedures

There are four major stages in the study: 1) the preparation stage: started from browse and collect related information, clarified research concepts and defined the research title, and review literature; 2) the research tool design stage: based on the theoretical framework, the researchers designed the questionnaire and conducted expert validity test and the pretest prior to modify the questionnaire; 3) the implementing stage: included choosing participants to carry out the formal survey; and 4) complete the research: included data analysis, discussions of the results, and conclusion writing.

Limitations of the study

This study may be limited by several factors, such as economic and time constraints as well as the availability of resources. For instance, through the cluster sampling approach, the subjects of this study were 1020 sixth graders' parents in Kaohsiung County in Taiwan from 34 classes, 28 schools. Although there were 822 responses returned with a high return rate, due to the limit size of sampling, the results may not be able to represent the entire population and thus the potential bias on the findings may merge. Additionally, students' parents may not be fully sincere or willing to fill out the survey questionnaire under any certain circumstance. Thus, the validity and reliability of the responses from the parents may be biased.

DATA ANALYSIS AND RESULTS

All collected data were analyzed by SPSS for windows 12.0 version. The statistical methods included descriptive statistics, t-test, and chi-square test. The analysis and discussion of the results are presented as follows:

Analysis of the Sixth Grade Students' Parents' Behavior of Internet Usage

The statistical results show that about 76% of the six grade students' parents used Internet and spent less than 1 hour using Internet (46%). Regarding the Internet content, most of the parents used Internet to search information or download data (60%), followed by sending and receiving emails. Regarding types of information searched or downloaded, 90% of the parents used Internet to search or download work related information. And most of the families placed the computers in the study room (29%), followed by living room. In terms of Internet system, most of them had broadband home (76%).

Table 1: The Sixth Grade Students' Parents' Behavior of Internet Usage

Question	Item	No.	%
Do you know how to use an Internet?	eq \o\ac(0,1)1 yes	607	76.2 %
	eq \o\ac(0,2)2 no	189	23.8 %
Frequency of Internet usage:	eq \o\ac(0,1)1 more than 8 hours a day	32	5.3 %
	eq \o\ac(0,2)2 ranging from 5 to 8 hours a day	43	7.1 %
	eq \o\ac(0,3)3 ranging from 3 to 5 hours a day	190	31.3 %
	eq \o\ac(0,4)4 ranging from 1 to 3 hours a day	281	46.3 %
	eq \o\ac(0,5)5 less than 1 hour a day	61	10.0 %
Major purposes for using Internet:	eq \o\ac(0,1)1 searching for information or downloading data	363	60.0 %
	eq \o\ac(0,2)2 chatting online or making net friends	18	3.0 %
	eq \o\ac(0,3)3 sending and receiving emails	105	17.4 %
	eq \o\ac(0,4)4 online shopping	24	4.0 %
	eq \o\ac(0,5)5 playing online games	65	10.6 %
	eq \o\ac(0,6)6 other	30	5.0 %
Location of family computer in your household: (multiple-choice)	eq \o\ac(0,1)1 living room	224	26.4 %
	eq \o\ac(0,2)2 parent's room	168	19.8 %
	eq \o\ac(0,3)3 children's room	140	12.5 %
	eq \o\ac(0,4)4 study room	246	29.0 %
	eq \o\ac(0,5)5 other	69	8.1 %
Internet connection:	eq \o\ac(0,1)1 no connection	63	7.9 %
	eq \o\ac(0,2)2 dial-up	86	10.8 %
	eq \o\ac(0,3)3 broadband	605	76.0 %
	eq \o\ac(0,4)4 other	13	1.6 %
	Missing data	29	3.6 %

Analysis of the Sixth Grade Students' Parents' Internet Literacy

Speaking of Internet literacy of parents (as shown in Table 2), as to Internet knowledge, most of the parents recognize meaning of electronization, Internet devices, and keyword searching. With regard to Internet skills, most of the parents are able to add their favorite or commonly used websites to “My Favorites” folder, to search for online information and upload and download pictures, words or files. However, the parents thought website or blog construction was rather difficult. In terms of attitudes toward Internet usage, the parents thought that respecting for intellectual property rights and protecting the students' Internet security were important. The researchers split the subjects into high-score, medium-score, and low-score groups based on the total scores of the three domains. About 27% above and below percentile of scores are the criterions for dividing high-score and low-score groups. The findings indicate that the highest ratio is the subjects with medium literacy (39.2%), the next is low literacy (31.3%), and high literacy (29.5%) is the least (as shown in Table 3).

Table 2. The Sixth Grade Students' Parents' Internet Literacy

Internet knowledge	Mean	SD
1. I understand that Internet requires TCP/IP network protocols	3.43	.898
2. I understand the necessary equipment for connecting to the internet.	3.62	.889
3. I know types of broadband services provided by ISP (Internet Service Provider).	3.41	.864
4. I understand the meaning of “electronization,” For example: e-government, e-generation.	3.63	.921
5. I understand the meaning of “www,” “edu,” and “tw” in http://www.npust.edu.tw	3.45	.951
6. When I use key words to search for information, I understand the meaning and usage of “and,” as well as “or.”	3.49	.958
7. I know about common anti-virus software.	3.38	.930
8. I know about management software for rating internet sites.	3.43	.948
Internet skills		
9. I know how to add websites that I like or frequently use into “my favorite.”	3.91	1.006
10 I know how to input internet address to link to websites that I need.	3.82	0.977
11 I can download pictures, articles or files, and store them in my computer.	3.71	1.018
12. I can use internet to look for information, and to solve personal or work issues	3.89	0.960

13. I know how to search for information by key words, and use them to narrow down the scope.	3.79	0.984
14. I know how to apply for free mailbox on certain websites (such as yahoo) .	3.60	1.097
15. I know how to create personal blogs on certain websites (such as Wretch).	3.05	1.086
16. I know how to write and reply emails.	3.51	1.133
Internet Attitude		
17. I think that sharing files or using online articles, images or pictures without permission could potentially violate intellectual property rights.	3.83	1.009
18. I like to use internet to search for information and to solve my problems.	3.97	0.905
19. I think that internet could update my knowledge and help me catch up with time.	3.98	0.908
20. I think that schools should install internet filters (fire walls) to prevent students from browsing uncensored websites.	4.26	0.920

Table 3. The Sixth Grade Students' Parents' Internet Literacy Group

Internet Literacy Group	No.	%
low literacy	249	31.3 %
medium literacy	312	39.2 %
high literacy	235	29.5 %

Table 4. The Sixth Grade Students' Parents' Parenting Style

Parenting Style	No.	%
neglectful and indifferent parenting	19	2.4
laisser-faire	33	4.1
autocratic	197	24.7
open-minded and authoritative	547	68.7

Analysis of the Sixth Grade Students' Parents' Parenting Style

In terms of parenting style (as shown in Table 4), the results of analysis of the survey questionnaire show that “open-minded and authoritative (68.7%)” obtained the highest ratio, followed by “autocratic (24.7%)” and “laisser-faire (4.1%)”. Only a few parents responded “neglectful and indifferent parenting (2.4%).” Over 90% of the parents are “Open-minded and authoritative” and “autocratic parenting.”

Analysis of the Sixth Grade Students' Parents' Internet Parenting

Regarding parents' management of children's frequency of Internet usage (as shown in Table 5), occasional management takes the most portions (37.9%), followed by frequent management. About 92.6% of the parents prohibited their children from going to Internet cafe. Most of the parents set the rules of Internet usage at home (72%) for their children. As to parents' management approaches of children's Internet usage, most of the parents turn off the power (26.8%), followed by verbal warning (21.2%). Very few of them used corporal punishment (2.1%). As to parents' instruction of children's Internet usage frequency, occasional instruction is the most (34.9%) and the next is no instruction (26.4%). The reasons for no instruction are the parents did not know how to use Internet and the parents were too busy with jobs or housework. Regarding parents' encouragement of children's Internet usage, occasional encouragement is the most (44.2%); regarding the reasons of no encouragement, most of the parents worried of their children's Internet addiction (51.5%) and the next is the parents did not possess knowledge of using Internet. In terms of Internet content, educational websites (31.8%) and online games (27.5%) are the most and the next are MSN or blog. Few parents allowed children to have online shopping or browsing foreign websites. As to children's use time of Internet, most of the parents allowed children to use Internet for one hour on weekdays. On weekends, most of the parents allowed their children to use Internet for about 2 to 3 hours per day. In winter and summer vacations, children were allowed to use Internet for 2 to 3 hours every day. In addition, most of the parents prohibited children to use Internet in the time of sleeping, doing homework, before examinations, or eating indicating that most of parents concerned about children's regular daily schedule, and did not want children to be disturbed by Internet in their daily schedule.

Table 5. The Sixth Grade Students' Parents' Internet Parenting

Internet Parenting	Item	No.	%
Frequency of internet parenting:	eq \oac(0,1)1 every time	146	18.3 %
	eq \oac(0,2)2 frequently	292	36.7 %
	eq \oac(0,3)3 occasionally	302	37.9 %
	eq \oac(0,4)4 never	56	7.1 %
Do you permit your children to use internet in internet cafes?	eq \oac(0,1)1 Yes	59	7.4 %
	eq \oac(0,2)2 No	733	92.6 %
Do you establish norms regarding internet usage at home?	eq \oac(0,1)1 Yes	573	72.0 %
	eq \oac(0,2)2 No	223	28.0 %
Ways that you control children's website browsing behaviors:	eq \oac(0,1)1 no management at all.	139	17.5 %
	eq \oac(0,2)2 communicating with children regarding contents that could and could not be viewed.	285	35.8 %
	eq \oac(0,3)3 determining website contents that could be viewed by circumstances	285	35.8 %
	eq \oac(0,4)4 installing website rating management software	87	10.9 %
Have you ever taught children how to use internet?	eq \oac(0,1)1 never	210	26.4 %
	eq \oac(0,2)2 rare	207	26.0 %
	eq \oac(0,3)3 from time to time	278	34.9 %
	eq \oac(0,4)4 always	101	12.7 %
What is the major reason that you don't teach your children to use internet?	eq \oac(0,1)1 because I know nothing about it	133	45.2 %
	eq \oac(0,2)2 no computer and internet facilities installed in the household	36	12.1 %
	eq \oac(0,3)3 too busy in work or housework	66	22.1 %
	eq \oac(0,4)4 economic constraints	5	0.2 %
	eq \oac(0,5)5 because they are taught at schools	48	16.1 %
	eq \oac(0,6)6 others	13	4.3 %
Have you encouraged children to use internet?	eq \oac(0,1)1 never	163	20.5 %
	eq \oac(0,2)2 rare	173	21.7 %
	eq \oac(0,3)3 from time to time	352	44.2 %
	eq \oac(0,4)4 always	108	13.6 %
Reasons why you don't encourage your children to use internet?	eq \oac(0,1)1 knowing little or nothing about internet	51	18.8 %
	eq \oac(0,2)2 no computer and internet facilities installed in the household	37	13.9 %
	eq \oac(0,3)3 afraid that internet will cause children's behavioral problems	37	13.9 %
	eq \oac(0,4)4 worries and doubts about internet addition	142	51.5 %
	eq \oac(0,5)5 economic constraints	6	0.6 %
	eq \oac(0,6)6 others	14	1.0 %
Under such circumstances you would prohibit your children from using internet: (multiple choices)	eq \oac(0,1)1 homework time	584	17.7 %
	eq \oac(0,2)2 dinning time	552	16.8 %
	eq \oac(0,3)3 sleeping time	585	17.8 %
	eq \oac(0,4)4 class day	413	12.5 %
	eq \oac(0,5)5 holiday	35	1.1 %
	eq \oac(0,6)6 before test	584	17.7 %
	eq \oac(0,7)7 ill performance (for example: making mistakes, disobedient)	466	14.2 %
	eq \oac(0,8)8 they could use internet at any time	73	2.2 %
Length of time children are permitted to use internet every day after class:	eq \oac(0,1)1 prohibit to use internet	346	43.5 %
	eq \oac(0,2)2 less than 1 hour	362	45.5 %
	eq \oac(0,3)3 between 2 and 3 hours	84	10.6 %
	eq \oac(0,4)4 more than 3 hours	4	0.5 %
Length of time children are	eq \oac(0,1)1 prohibit to use internet	118	14.8 %

permitted to use internet every day during holidays:	eq \oac(,2)2 less than 1 hour	227	28.5 %
	eq \oac(,3)3 between 2 and 3 hours	355	44.6 %
	eq \oac(,4)4 between 3 and 4 hours	66	8.3 %
	eq \oac(,5)5 more than 4 hours	30	3.8 %
Length of time children are permitted to use internet every day during summer and winter vacation:	eq \oac(,1)1 prohibit to use internet	176	22.1 %
	eq \oac(,2)2 less than 1 hour	169	21.2 %
	eq \oac(,3)3 between 2 and 3 hours	327	41.1 %
	eq \oac(,4)4 between 3 and 4 hours	85	10.7 %
Parents' management approaches of children's Internet usage (Multiple Choice)	eq \oac(,1)1 turn off power of computers	359	26.8 %
	eq \oac(,2)2 internet connecting system	267	19.9 %
	eq \oac(,3)3 website rating management	209	15.6 %
	eq \oac(,4)4 do not apply for internet connecting system (such as ADSL)	68	5.1 %
	eq \oac(,5)5 physical punishment	28	2.1 %
	eq \oac(,6)6 no computer facilities installed	49	3.7 %
	eq \oac(,7)7 verbal warning but no actions	284	21.2 %
	eq \oac(,8)8 delegating disciplining responsibilities to teachers and schools	76	5.7 %
Which website contents do you allow your children to view? (multiple choices) :	eq \oac(,1)1 MSN or chat room	242	11.7 %
	eq \oac(,2)2 online games	570	27.5 %
	eq \oac(,3)3 online shopping	62	3.0 %
	eq \oac(,4)4 adult websites	5	0.2 %
	eq \oac(,5)5 educational websites	659	31.8 %
	eq \oac(,6)6 international websites	56	2.7 %
	eq \oac(,7)7 blog	264	12.7 %
	eq \oac(,8)8 video websites (such as TV, movie)	214	10.3 %

Analysis of the Correlation between Internet Literacy and Internet Parenting

The results of chi-square test and Post hoc comparison analyses show that there is a significant correlation between the parents' Internet literacy and Internet parenting frequency ($\chi^2_{.95(6)} = 48.804, p < .01, Vc = 0.175$). Parents with low Internet literacy tend to frequently manage children's Internet usage. Parents with high Internet literacy tend to hardly manage it. Additionally, there is significant correlation between allowing children to go to Internet Café and parents with three different kinds of Internet literacy ($\chi^2_{.95(2)} = 12.544, p < .05, Vc = 0.089$). More parents prohibit their children to go to Internet cafe. Also, there is significant correlation between setting rules of Internet usage and parents with three different kinds of Internet literacy ($\chi^2_{.95(2)} = 15.014, p < .05, Vc = 0.137$). More parents setting the rules than the no rule setting. In addition, there is significant correlation between management of children's Internet usage and Internet literacy ($\chi^2_{.95(6)} = 52.204, p < .01, Vc = 0.181$) indicating most of parents with "high Internet literacy" do not manage children's Internet usage. Furthermore, there is significant correlation between instructions of children's Internet usage and Internet literacy ($\chi^2_{.95(6)} = 156.477, p < .01, Vc = 0.314$) indicating most of parents with "high Internet literacy" do not instruct children's Internet usage. Moreover, there is significant correlation between parents' Internet literacy and encouragement of children's Internet usage ($\chi^2_{.95(6)} = 72.829, p < .01, Vc = 0.214$) indicating most of parents with three kinds of Internet literacy occasionally encourage their children to use Internet. Generally speaking, parents with "high Internet literacy" show lower frequency of managing than those of "low Internet literacy" regarding Internet parenting frequency, management, and instruction.

Analysis of the Correlation between Parenting Style and Internet Parenting

The results of chi-square test and Post hoc comparison analyses show that this study demonstrates the analytical results below: the parents' different parenting styles do not show significant difference on management ($\chi^2_{.95(9)} = 14.064, p > .05$), instruction ($\chi^2_{.95(9)} = 10.875, p > .05$) or encouragement ($\chi^2_{.95(9)} = 16.766, p > .05$) of children's Internet usage. However, it shows significant difference on the parenting of children's Internet usage frequency ($\chi^2_{.95(9)} = 32.406, p < .01, Vc = 0.116$), allowing children to go to Internet café ($\chi^2_{.95(3)} = 17.860, p < .01, Vc = 0.106$), and setting Internet

usage rules ($\chi^2_{.95(3)} = 22.252, p < .01, Vc = 0.167$). For the parents with “neglectful and indifferent” or “laissez-faire” parenting styles, their management frequency of children Internet usage: “occasional management” shows more significant than the “management every time.” On the contrary, “never manage” on children’s Internet usage was rarely exercised by the parents with “autocratic” parenting style. The parents with “open-minded and authoritative” parenting style showed “frequently manage” and “occasional manage” respectively on managing their children’s Internet usage. The parents with “neglectful and indifferent” parenting style obtained higher significance than the parents with “open-minded and authoritative” parenting style on the “no rules on Internet usage.”

DISCUSSIONS

Based on the analyses of the results, most the parents in this study were around 30 to 40 year old labors from the middle socioeconomic class with only high school or vocational school education; some of them had college education. These results are in accordance with the current distribution of human resources in Taiwan.

In terms of behavior of internet usage, around 76% of the parents knew how to use the Internet. Home Internet equipment is mainly ADSL. Motives for using the Internet are usually due to job needs, searching for information and downloading data. The prevalence of Internet use and the development of information industry as well as 3C industry all accelerate the improvement of home facility and information literacy in addition to use internet at work.

Speaking of internet literacy, this study concludes that parents’ Internet literacy is primary for obtaining knowledge, such as searching for information, downloading data, and less for sharing knowledge or knowledge transfer, such as website construction and designing blogs. This is probably because the latter involves more hardware and software knowledge, most parents are afraid to utilize it. Meanwhile, to many X-generation parents, leaving messages on the message board or sharing life experience and knowledge online tend to be very difficult or not easy to get used to. In recent years, due to Taiwanese government’s efforts in strengthening of intelligence property right and combating Internet crimes, the parents especially respect intelligence property rights and students’ online safety, which also confirms Taiwan government’s success in the promotion of information policy and implementation. This great success can be provided to other countries for their information education development.

In terms of parenting style, the findings of the study indicate that the authoritative parenting is the most common type among all the parenting styles, while negligence is the most uncommon type. Compared to other types, the authoritative parenting is the best discipline style. Parents who prefer the authoritative parenting value parenting education, and are willing to devote more care and love. It is assumed that the parents will encourage students to be independent and simultaneously restrict their lifestyle, learning and safety with authoritative and responsible attitudes (Maccoby & Martin, 1983). Since most parents possess proper parenting styles, their impact on children’s learning would be positive and profound, which can be beneficial for cultivating children’s accurate behavior and attitudes of internet usage.

Regarding the internet parenting, the results of the study indicate that 90% of the parents disciplined children’s online behavior, and most parents would communicate with their children to establish norms. This result confirms Magid’s (1998) investigation that parents would discipline the length of time children spending on the Internet and the restricted them only to view educational websites and online games. Controlled the computer power supply and the Internet connection were the most two simple and effective ways for the parents. Meanwhile, 90% of the parents opposed their children to go to Internet cafe because computers were installed with both good and bad software there and its customers vary in a wide range. The parents are worried that children may be affected negatively. Thus, all internet cafes should be managed effectively and have set up regulations and restricts for the children.

In terms of the relationship between internet literacy and internet parenting, the findings also suggested that parents’ Internet literacy had significant correlated on their Internet parenting. The lower Internet literacy the parents’ have, the more they encourage their children to use the Internet. With respect to controlling and supervising children’s use of Internet, they tend to show concern, to teach or to regulate children’s online behavior. By contrast, the parents with high Internet literacy tended to trust their children and did not regulate their children’s online behavior. Also, they seldom taught or encouraged their children to use the Internet. This phenomenon is probably because this type of parents are familiar with the usage of computer technology, such as firewalls and safety secure software, and were able to use them to prevent bad influence of Internet. Thus, they appear to be less controlling in this matter.

Regarding the relationship between parenting style and internet parenting, the results of this study also indicate that different parenting styles are significantly and positively correlated with the frequency of online parenting. Parenting styles are also significantly and positively correlated with establishing norms for children and parental permission for going to Internet cafes. With respect to the difference between the “neglecting” and “permissive” parenting, the number of the parents who “never discipline” was more than those who “usually discipline”; while the number of “authoritarian” parents who “always discipline” was more than those who “never discipline.” On the other hand, the “authoritative” parents tended to “discipline children regularly” than “discipline very time children use Internet.” Huang

(2002) suggested that parenting attitudes will affect children's information learning. Positive encouragement and appropriate guidance will promote children's information learning. On the contrary, overindulgence or strict forbiddance will hinder children's development in information learning. Hsu (2005) surveyed the sixth grader students, and found that a higher percentage of children were addicted to the Internet due to neglecting parenting. This study found that the "neglecting" and "permissive" parenting parents seldom disciplined their children's online behavior, so that their children might be less resistant to Internet addiction. Thus, how to educate and cultivate parents' positive parenting styles and internet parenting has become an important lesson for the development of information education worldwide.

CONCLUSIONS

1. The parents' current Internet parenting: the "occasional management" is the most frequent and the next is "frequent management" for the sixth grade students' parents' management of children's Internet usage. Over 90% of the parents prohibit children to go to Internet café and over 70% of parents set up Internet usage rules at home. Educational websites and online games were mostly allowed for browsing. In addition, controlling the power of the computer is the most common managing approach for parents. In addition, over 50% of the parents allow children's playing online games but limit other Internet activities, particularly meeting online friends or going to their gatherings, indicating most of the parents are more open-minded about students playing online games than other Internet activities.

2. Correlations between the parents' Internet usage and Internet parenting: the parents' average Internet usage time is less than one hour every day. Acquiring and downloading information for work are the most common activities. In addition, the parents' Internet usage, Internet usage time, and Internet content are significantly related to Internet parenting. Internet parenting attitude, such as instructing and encouraging children to use Internet, is also significantly related. Thus, the more familiar with Internet the parents are, the more concerns on the rules for children's Internet usage and attention on their behavior the parents have.

3. Correlations between the parents' Internet literacy and children Internet parenting: there is a significant correlation between the parents' Internet literacy and Internet parenting. The parents with low Internet literacy are significantly higher than those with high Internet literacy in terms of Internet parenting frequency and instruction and encouragement of children's Internet usage. The parents with high Internet literacy tend to trust their children and do not manage them and hardly guide and encourage children's Internet usage. In contrast, the parents with low Internet literacy who do not use Internet often or cannot use it agree that Internet would enhance children's learning. They will encourage children to use Internet. Additionally, the parents tend to manage and monitor children's Internet usage. The parents with high Internet literacy who are familiar with Internet environment and using skills are less aware of Internet security and tend to trust children or to be *laissez-faire*. However, they still worry about children's Internet addiction, and do not encourage children's Internet usage.

4. The relationship and influence between the parents' parenting style and Internet parenting: the parents' parenting styles show a significant correlation with their management of children's Internet usage frequency, allowing children to go to Internet café, and setting Internet usage rules. The parents with "neglectful and indifferent" and "laissez-faire" parenting styles show more significant in "no management" than "frequent management." The parents with "autocratic" parenting style show more significant "management every time" than "no management." The parents with "open-minded and authoritative" parenting style tend to be more significant "frequent management" than "management every time." Also, only the parents with "laissez-faire" parenting show significant different attitudes. In addition, both encouragement and instruction of children's Internet usage and the parents' different parenting styles are not correlated. Thus, the parents with different parenting styles only regulate children's behavior of Internet usage, such as regulation of using time and setting rules but not significantly influence children's Internet use, such as content browsed and attitude.

RESEARCH SUGGESTIONS

1. Internet contents browsed by children should be monitored: the parents with different levels of Internet literacy or different parenting styles hardly concern about children's browsed Internet content. Therefore, the parents should not only regulate children's Internet usage time, but also should instruct and assist with Internet usage and content in order to establish the children's positive concepts and habits.

2. The parents with open-minded and authoritative parenting style can stably and positively enhance children's Internet usage behavior: most of the parents with "open-minded and authoritative" parenting style encourage the children to be independent with open-minded and responsible attitude. They also regulate the children's life, learning, and safety. Additionally, the parents with "neglectful and indifferent" and "laissez-faire" parenting styles reveal low Internet parenting frequency. In order to avoid students' Internet addiction, the parents should possess "open-minded and authoritative" parenting style to ensure children's safety learning and growth.

3. Website classification software should be used: only few parents used website classification software at home. Most of parents allow their children to play online games. Thus, the authority should fulfill the management of computer software classification for parents. In addition, the government, educational units, and schools should provide more classified online games for children.

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