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An analysis of multiple factors of cyberbullying among junior high school students in Taiwan

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ABSTRACT

Cyberbullying, as a serious kind of repeated, intentional, and harmful aggressive behavior, cannot be ignored. In light of the limited studies and inconsistent findings on the matter, this study explores cyberbullying's frequency and other factors (gender, academic achievement, types of technologies used, and anonymity) relevant to both the issue itself and the East Asian context. The interrelationship of different roles (bullies, victims, and bystanders) in cyberbullying is also examined. A survey was conducted with 545 Taiwan junior high school students. The results indicate that male students were more likely to bully others in cyberspace and that cyberbullying was not affected by one's level of academic achievement. Regarding the various technologies and various country-specific cyberbullying forms pertinent to technology users, instant messenger (IM) users experienced significantly more cyberbullying than users of other technologies. The survey results also indicate that the anonymity of cyberbullying was not a pertinent factor. The study found that the dominant attitude toward cyberbullying was indifference, raising alarms about the lack of cyberbullying prevention. Peers, who were the people most teenagers would likely turn to when experiencing cyberbullying, usually took no action because of their tendency to avoid conflicts and to maintain group harmony. In its interpretation of the findings, this study emphasizes Taiwan's context, including Confucian philosophy.

1. Introduction

Bullying, as a serious kind of school violence, has long been recognized as a common aggressive behavior among peers and has negative effects on mental development and learning (Flanagan, Erath, & Bierman, 2008). The problem of bullying in middle school is serious and cross-cultural, and it has attracted considerable attention in Europe, North America, and Japan (e.g., Akiba, 2004; Olweus, 2003; Pepler, Jiang, Craig, & Connolly, 2008). Regardless of whether the participants are victims, bullies, or witnesses, experiencing bullying can increase the possibility of other victimization, including child maltreatment, conventional crime, and psychological problems (Holt, Finkelhor, & Kantor, 2007a, 2007b). Bullying behavior is now happening in cyberspace and in an even more powerful way than has been the case in conventional contexts, because cyberspace is quicker, more comprehensive, and almost unstoppable and unavoidable. The physical scars of a beating can heal, and it is often possible for the would-be victim of such a beating to run away; stalked by someone online, even the strongest mind can break and there is no place to hide.

Young people are socially connected with others through the Internet and other communication technologies, and these tools have become the new medium of bullying behaviors. Cyberbullying hurts teenagers emotionally, rather than result directly in physical damage, and operates by means of cell-phone text messages, photos posted online, mean words on personal blogs, and rumors that spread faster than ever through e-mail, instant messengers (IMs), or any other such communication devices. With the growing popularity of social-networking sites, instant messengers, and mobile technology among adolescents, the risk and extent of cyberbullying cannot be underestimated (Juvonen & Gross, 2008).

Owing to the limited number of cyberbullying studies in Taiwan (e.g., Hokoda, Lu, & Angeles, 2006; Wei, Jonson-Reid, & Tsao, 2007), to the studies' omission of pertinent issues, and to the studies' inconsistent results, this study explores the cyberbullying problems among Taiwanese teenagers and examines the frequency, types of tools, gender differences, and other factors relevant to both the issue itself and the East Asian context. It is hoped that the results illustrate how the new form of bullying happens in the context of Taiwan. In addition to examining the prevalence of cyberbullying, the current study emphasizes the cultural differences between Taiwan and Western countries.

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2. Literature review

2.1. Definition of cyberbullying

As a prominent researcher in bullying studies, Olweus (1993) explained that bullying occurs when children (1) say mean things about or make fun of another person, (2) ignore or exclude him or her from their group, (3) hit, kick, push, or physically restrain him or her, or (4) tell lies or spread false rumors or send mean notes and try to make other students dislike him or her.

Later, Olweus and Limber (1999) summarized notable features of bullying: "it is aggressive behavior or intentional 'harm-doing', which is carried out repeatedly and over time in an interpersonal relationship characterized by an imbalance of power" (p. 31). The definition covers four features of bullying behaviors: they are intentional, harmful, repeated, and imbalanced in a power relationship. The definition helps to distinguish accidental and just-one-time events from bullying, a willful aggressive behavior.

Cyberbullying, the bullying behavior in cyberspace, is a new kind of bullying happening through Internet applications, cell phones, or any other information technology. According to *Bullying Beyond the Schoolyard* (Hinduja & Patchin, 2008), cyberbullying is "the intentional and repeated harm of others through the use of computers, cell phones, and other electronic devices" (p. 5). The aforementioned text points out that the difference between traditional bullying and cyberbullying concerns basically the tools and methods used; the intentional, repeated, and harmful nature remains the same.

Indeed, the different tools and methods have been changing the face of bullying; the communication gadgets make cyberbullying generally indirect. Without physical presence, cyberbullying happens in chiefly verbal and relational ways. Relevant behaviors include harassment, denigration, impersonation, outing, exclusion, and cyber-stalking, which are all classified as cyberbullying (Willard, 2006). These new forms of bullying facilitate attacks on teenagers not only during school time, but also after school and at home, outside the awareness of parents. We should never underestimate the harmful effects of cyberbullying, especially on children and teenagers.

The tools that could be used in cyberbullying, meaning all the communication technologies available, bring bullying to a new space and transform bullying into a new form. The tools include cell phones and Internet tools (instant messengers, social-networking sites, chat rooms, e-mails) and result in the two unique characteristics of cyberbullying, which are rapid dissemination and anonymity; the latter feature remains an issue for further discussion.

2.2. The cyberbullying characteristics of rapid dissemination and anonymity

Owing to the features of information technology, cruel words can spread very quickly through simple copy-and-paste or forward actions in e-mails and instant messages, and the harmful content could be text, photos, drawings, videos, audio, and any combination of these multi-media forms. Once the materials are posted online, school teachers or parents can take notice and ask the authors to delete the original file, but the numerous copies elsewhere in cyberspace remain; and the victim's fear or embarrassment persists. The maelstrom of cyberbullying can spread quickly and is almost unstoppable. This first unique characteristic of cyberbullying, rapid dissemination, has been confirmed by the vast majority of studies so far (Kowalski, Limber, & Agatston, 2008; Li, 2005).

The second characteristic, anonymity, remains relatively inconsistent. Different from face-to-face traditional bullies, cyberbullies usually can easily remain anonymous in cyberspace (Li, 2007b, 2005). The bullies theoretically can hide behind computer screens and keep themselves safe from being recognized and punished. Teenagers have access to free e-mail accounts and other web-based applications and thus have the power to threaten, tease, and spread rumors, without implicating themselves. Physically stronger teenagers, usually male students, no longer hold advantages in this form of bullying. Traditional victims of bullying, who probably are weak and shy, can fight back, or even take revenge in cyberspace. The anonymous nature of cyberbullying may reverse the bully-victim relationship, or reinforce the role-turning cycle.

Yet, the results of an anonymous Internet-based survey of 1454 teenagers (Juvonen & Gross, 2008) are inconsistent with the common assumption that cyberbullies are usually anonymous, suggesting that teenagers are aware of cyberbullying behavior and know exactly who did what. Anonymity is one good cover in cyberspace, but it cannot be inferred that every cyberbully would use it at all or would use it successfully. It is also possible that teenagers simply transfer the bullying field from the school bathroom or the school storage room to blogs and IMs and that teenagers do not tend to hide their identity, just as they typically do not wear masks when beating up a peer in a face-to-face confrontation. While cyberbullying accompanies traditional bullying, the victims might be able to guess the cyberbully's identity. Interestingly, online materials quite obviously are more open to the public than are the bathrooms or the storage rooms in schools; but teen cyberbullies might not be aware of this fact. They do not expect that teachers, parents, or other adults would read their blog online or check their IM records, and most adults are indeed neither aware of such goings-on nor able to do anything about the matter if they are.

While it is assumed that the bullies would make the best use of a given technology's features to remain anonymous (e.g. Li, 2005), there are other findings suggesting that cyberbullies are no different from the traditional face-to-face bullies who would not try to hide their identities (e.g. Juvonen & Gross, 2008). Owing to the inconsistent findings of the existing literature, the present study aims to explore whether anonymity is a unique feature of bullying in cyberspace.

2.3. Factors influencing cyberbullying

Previous research on school bullying has identified several factors that likely contribute to cyberbullying. Among them are the significant factors of gender, academic achievement, and culture. In addition, research on cyberbullying has reported that computer-use frequency is a key factor (Li, 2005).

Gender has long been a significant factor influencing aggressive behavior, and it may result in different types of bullying among teenagers. Nabuzoka (2003) found that males usually were involved in physical and direct bullying (i.e., hitting someone) and that females were more involved in psychological bullying (e.g., rumor-spreading and relational aggression). Another study conducted in Taiwan found that boys and girls were equally likely to be victimized by indirect bullying (Hokoda, Lu, & Angeles, 2006). In cyberspace, where bullying has no physical form and no face-to-face contact, the gender difference might be changed. Li (2006) reported that there is no significant difference between genders, although males were still slightly more likely to cyberbully than females in the Canadian case. There has been debate on which gender is more likely to engage in or to experience cyberbullying, and the findings so far are inconsistent.

Academic achievement is another key factor involved in bullying. Especially in East Asian countries (Lai, Ye, & Chang, 2008), which tend to be highly test-oriented comparatively, teenagers generally have suffered under intense academic pressure from par-

ents, teachers, and peers. Ma (2001) identified bullying connected to academic achievement: students with high academic achievement, the so-called "good students," usually were the targets of bullying behaviors. Focusing on Canada, Li (2007a) reported that half of cyber victims had above-average school grades and suggested that academic achievement might be a universal factor of cyberbullying. In a similar vein, being bullied could result in a drop in school grades and academic performance (Holt, Finkelhor, & Kantor, 2007a, 2007b). Academic achievers are likely targets of bullies, and the bullying can negatively affect the achievers' academic achievement, suggesting that academic achievement is a possible factor acting diversely in different cultures.

Clear cultural difference was also found between English and Zambian pupils (Nabuzoka, 2003). While boys reported more bullying experience than girls in both of the cultural settings, it was indicated that English pupils exhibited proportionally more bullying-related behaviors than Zambian pupils. In addition to socioeconomic diversity, the difference might result from various cultural definitions and understandings of bullying behaviors. Li (2005) pointed out that a Canadian student is four times more likely to cyberbully than a Chinese student and concluded that culture was a significant predictor. Different patterns in China and Canada were found in another study by Li (2008), which highlights the importance of culture to the design of effective prevention programs. While athletics often functions as a ticket to elevated social status in American schools (Bishop et al., 2004), the opposite might be true in Taiwan, where the culture is greatly influenced by Confucianism and where academic achievement garners the greatest value. A study showed that bullying of Taiwanese adolescents may be similar to Japan-based bullying (*Ijime*), owing to the shared norms of a collective cultural (Hokoda, Lu, & Angeles, 2006). In collective societies, witnesses of bullying may refrain from intervening for fear of upsetting a sense of security and harmony, and victims might endure the sufferings to avoid conflicts with others. Another study of *Ijime* (Maeda, 1999) suggested that Japanese students were more likely than Western children to use indirect relational tactics, such as spreading nasty rumors, and that the tendency was strongly associated with general social conformity. Social context and norms could account for significant differences in bullying behaviors.

In terms of cyberbullying, electronic devices constitute the medium of choice. Frequency of and knowledge of technology use can create circumstances where bullying or being bullied takes place. It was noticed that the widespread availability of cell phones may result in a high incidence of text-message bullying (Raskauskas & Stoltz, 2007). It is reasonable to assume that the same patterns would surface in the use of other electronic devices. Ybarra and Mitchell's study (2004) confirmed that both online aggressors and targets are intense Internet users. In addition to intense use, it is no surprise that networking sites and chat rooms, among various web tools providing frequent interaction among users, may become fertile ground for cyberbullying (Mesch, 2009). However, how these tools are used for cyberbullying and the reasons behind it remain unclear, along with the differences between social-networking sites, chat rooms, and other communication tools (e-mail, blogs, instant messengers, etc.).

The types of tools, access to the tools, and the usage patterns (frequency and location) of communication technology are important indicators of cyberbullying behaviors and typically differ from the tools attributable to traditional school bullying. The present study tests and discusses these possible indicators.

2.4. The cyberbullying issues of interrelationship and peer support

To date, few studies have examined the interrelationships among different roles of cyberbullying. As Olweus and Limber (1999) noted, in traditional bullying, the victim can hardly defend himself or herself, owing to the physical, mental, or social imbalance of power. In contrast, the cyberbullying victim can comparatively easily fight back with a computer or a cell phone and just a bit of ill intent. The imbalance of power structures in cyberbullying seems not as strong as it has been in traditional bullying. In cyberspace, everyone with Internet access and basic operation skills can easily spread rumors and send harassing e-mails and so can the victims. Even with less physical strength or relational resources, victims can more easily fight back or justify themselves through communication technology. The difficult part of revenge might be to identify the bully who hides behind the computer screen and who spreads rumors by anonymous e-mail accounts and cell phone numbers. Whether the power differential still exists in the cyberbullying realm is an issue requiring more empirical data.

The interwoven relationship among cyberbullies, victims, and the huge group of online bystanders has not yet been comprehensively discussed. In fact, a majority of teens are aware of or have witnessed bullying, and studies have pointed out that these teens, both individually and as a group, wield effective power to stop or to minimize bullying (Gini, Pozzo, Borghi, & Franzoni, 2008). Research has proposed a peer-support model to enhance bystanders' responsibility to take action against bullying (Menesini, Codecasa, Benelli, & Cowie, 2003), and the model rests on the active intervention of groups of outsiders. The power of peer support might be regarded as an effective factor in combating cyberbullying, as well as traditional bullying. Especially because a usually sizable population witnesses online bullying, these witnesses' attitudes toward bullying and the power of their collective voice should not be underestimated.

Our review of studies on traditional bullying and on cyberbullying reveals that there are similarities and also differences between traditional bullying and cyberbullying. The repeated and intentional nature of bullying remains, but the power differential might change. The differences also lie in the tools used, the ways rumors spread, and the interrelationships among the involved roles. A unique characteristic of cyberbullying – anonymity – merits more investigation. Online bystanders' actions could be a key to preventing or minimizing the phenomenon. Therefore, this study explores the following issues:

(1) Do gender and academic-achievement differences influence cyberbullying?
(2) Do different technologies result in any differences in cyberbullying?
(3) Is there a correlation among the experiences attributable to different roles (cyberbullies, victims, and bystanders)?
(4) Could cyberbullying be characterized as anonymous behavior?
(5) How do bystanders respond to cyberbullying?

The current study also explores two cyberbullying features, repetition and harmfulness, by asking about frequency and by posing open-ended questions. The focus of the survey is mainly the electronic tools used in cyberbullying and their impact on the behavior. Thus, the remaining two features of cyberbullying, intention and power imbalance, do not receive full coverage in the survey insofar as their identification is difficult to attain in a self-report questionnaire.

3. Methodology

Self-report and peer-report surveys are the most frequently used methods of collecting data on school bullying (Wei & Huang, 2005); surveys are comparatively low-cost and are preferred for

large-scale data collection. Because surveys lack flexibility, six open-ended questions were added for more comprehensive feedback in this study. Students, rather than teachers and other adults, were chosen to be the source because they are present in most bullying incidents (O'Connell, Pepler, & Craig, 1999). Whether being active participants or bystanders, peers are typically the best informants on bullying events.

3.1. Instrument

Olweus (1993) in *Bullying at School* described eight roles involved in bullying behaviors: the bully, the follower, the passive supporter, the supporter, the onlooker, the possible defender, the defender, and the victim. The variety of and the interwoven relationships among these roles reveal the complex nature of bullying behaviors. These roles may change places and overlap; that is, a victim might be a bully at the same time or change from one role to another. The current study has condensed the eight roles, for practical application, into the categories of bullies, victims, and bystanders.

This study's anonymous survey comprises two major parts: one on personal information and the other on cyberbullying experiences. The first part asks about gender, grade level, academic achievement, and computer use, as reported above. The second part of the questionnaire was adapted from Kowalski and Limber's survey (R. Kowalski, personal communication, December 18, 2008); the original questions were revised substantially for both content and language-use in this study to fit the Taiwanese context, and some original questions were deleted. A new section on bystander experience was added to investigate the perceptions attributable to the relatively sizable population of stakeholders. The newly added section aims to combine the advantages of self-report measures and peer-nomination measures. In every question, wording and phrases were changed to better fit the Taiwanese context; the survey's language (the wording, including computer-related phrases) was carefully chosen and reviewed by other stakeholders (two junior high school students and two junior high school teachers) so that the language would be familiar to teenagers.

The second part of the questionnaire includes 37 questions in total and was developed from three different roles' perspectives of cyberbullying events: respectively, the questionnaire explores the experiences and attitudes of bystanders, victims, and bullies. The second part starts with the topic of bystanders' experiences to avoid directly asking for bullying confessions, and proceeds to the topic of victims and then the topic of bullies.

The three sections in the second part of the survey are (1) knowing/being aware of cyberbullying experiences (Cronbach's $\alpha = .913$), (2) victimization experiences (Cronbach's $\alpha = .904$), and (3) bullying experiences (Cronbach's $\alpha = .958$). Also, in the questionnaire's second part, each section includes six open-ended questions asking about both the reasons for not reporting cyberbullying to adults and reactions to cyberbullying; the aim, herein, was to further explore the mechanism underlying the aggression behaviors.

3.2. Terminology

The translation of the English word 'bullying' has been debated, and the concept of bullying differs from culture to culture (Smith, Cowie, Olafsson, & Liefooghe, 2002); both the term 'bullying' and the term 'cyberbullying' are not so often used in Chinese as they are in English. The direct Chinese translation of the word 'bullying' (ba-lin) is considerably negative and is not often used in daily contexts. Concerning the ambiguities of the concept among students, the term ba-lin was replaced by a longer elaboration of the meaning. In order to minimize the possibility of confusion, the beginning of each section featured a textual paragraph both explaining the cyberbullying concept and identifying examples to avoid possible misunderstanding of bullying-related behaviors; the textual paragraph also serves as a reminder to participants that they should bear in mind the correct cyberbullying concept when answering the questions. The English translation of the paragraph is as follows:

> You will be asked about experiences regarding ill-intended behaviors in cyberspace, and these behaviors include threats, harassment, humiliation, insults, and any other emotional put-downs by means of words, fake pictures, peeping-Tom videos, or any combination of digital content. In the following questions, the "online" environment suggests all kinds of electronic communication tools, such as e-mails, instant messengers, chat rooms, online polls, web forums, weblogs, and cellphone text messages. Please bear in mind that the following questions concern ill-intended behavior and content performed and transmitted online through any and all means. You will be asked about how often – and in what ways – you have come across the above behaviors or content. The behaviors that you mention are not necessarily bad behaviors. Please answer the questions honestly according to your actual experiences.

3.3. Sample

Data were collected from 16 classes of eight junior high schools in both northern and southern Taiwan, including urban and rural areas. Junior high school students were chosen (1) because they would be the most likely to suffer from both online and traditional bullying, (2) because teachers and parents would likely be unaware of cyberbullying, and (3) because teenagers would likely be reluctant to report the cyberbullying (Kowalski, Limber, & Agatston, 2008). Among the total of 545 participants, 228 students completed the questionnaire online and the remaining 317 students completed the same questionnaire in print form. The data collected online and in print were assumed equal, because no significant difference was found between the mean scores of the print survey and the mean scores of the online survey relative to each of the three groups (bystanders $t_{(545)} = .-1.334$, victims $t_{(466)} = .810$, bullies $t_{(540)} = .686$, respectively, $p < .001$).

3.4. Procedure

The anonymous survey was completed at school during school hours and was administered by the students' teacher. The survey required 15–20 min for each student. Sixteen classes completed the survey, and there were about 35 students in each class. So that students would understand the survey, they were asked to pay attention to the instructions at the beginning of each section, explaining the concept of cyberbullying. Both the hardcopy survey and the online survey followed the same procedure.

3.5. Analysis

This study accounts for the demographics and cyberbullying experiences of participants. The majority of the outcomes were either single dichotomous (yes–no) or 5-point Likert-style ordinal variables, and before the analysis, some 5-point ordinal data regarding frequency were grouped into a "no cyberbullying experience at all" category and an "at least one cyberbullying experience" category (once, twice in a month, once a week, and several times a week). Effects of various factors (gender, culture, academic achievement, type of tool, etc.) and three roles in cyberbullying (bystander, victim, and bully) were also examined. We conducted a *t*-test, a bivariate-correlations test, and a multivariate repeated one-way ANOVA to examine differences among pertinent media/

tools and to explore discrepancies in cyberbullying events as perceived by different types of role-players. The SPSS 15 package (SPSS, 2006) was used for statistical analyses.

4. Results and discussion

4.1. Participants' demographics

The total of 545 students were asked personal information regarding only their gender, grade level, academic achievement, and computer use; in this way, this study ensured the anonymity of the participants. As shown in Table 1, the participants comprised 256 (47.1%) males and 288 (52.9%) females and were fairly evenly distributed from grade to grade (7th graders 31.9%, 8th graders 37.1%, 9th graders 31.0%). Regarding academic work, 225 (41.6%) students reported theirs as above average, 210 (38.4%) reported theirs as average, and 109 (20.0%) reported theirs as below average.

As Table 1 shows, the majority of students got online at home (86.5%), and some less common places were school (5.5%), Internet cafés (3.1%) and friends' homes (2.8%). The Internet availability at home (91.5%) was almost universal. As for the frequency of using computers, almost one-third reported that they used computers everyday (27.6%) and another one-third several times a week (38.5%). Instant messengers (83.1%) and e-mails (66%) were the two most frequently used tools for online activities. Other popular Internet tools were various, including BBS (28.2%) and chat rooms (16.4%).

Our sample of students indicated that among their various purposes for using computers, the purpose of entertainment was the most common one (87%), including playing online games, watching videos, and listening to music. The second most common purpose was to use computers for communication (76.7%), through instant messengers particularly; other purposes include academic work (67.9%) and self-expression (53.6%), suggesting the editing and the reviewing of personal profiles and blogs.

Table 1
Demographics of participants.

	n	Percentage (%)
Gender		
Male	256	47.1
Female	288	52.9
Grade level		
7th grader	174	31.9
8th grader	202	37.1
9th grader	169	31.0
Internet availability at home		
ADSL or cable connection	458	83.3
Dial-up connection	45	8.2
None	46	8.4
Academic achievement		
Above average	225	41.6
Average	210	38.4
Below average	109	20.0
Most frequent computer-use location		
Home	472	86.5
School	31	5.5
Internet café	18	3.1
Friend's home	16	2.8
Other	8	1.5
Computer-use frequency		
Everyday	152	28.6
Several times a week	210	39.5
Once a week (and less)	170	31.9
Purpose of using computer (multiple answers)		
For entertainment	474	87.0
For communication	418	76.7
For academic work	370	67.9
For self-expression	292	53.6

Also confirmed in the survey was that many of the teens were learning from the online resources, but that more of them were looking for fun, a sense of belonging, and interaction with others. The data again confirmed that the teens' lives were now rooted in an online culture; they used the Internet for multiple purposes, in contrast to older computer users, who tended to use computers for specific tasks. Among all sampled students, 78% reported that they had been using the Internet for more than 4 years and 75% reported using the Internet at least 1 h a day, in addition to their 8-h or more school-based daytime studying. Teenagers take online communication, both verbal and textual, for granted as a daily communication medium. The phenomenon has contributed to teens' mental dependence on communication technology. Being disconnected from the Internet signifies isolation, with no direct news from friends and no direct interaction with peers.

4.2. Cyberbullying experiences

As shown in Table 2, 346 (63.4%) of the students reported having witnessed or having been aware of cyberbullying, 190 (34.9%) had been cyberbullied, and 111 (20.4%) had cyberbullied others. The overall results present a picture wherein Taiwanese adolescents have frequent involvement in cyberbullying. The prevalence of the new bullying behaviors cannot be ignored.

Also shown in Table 2, from bystanders' perspectives, there was generally an even distribution or frequency of different forms of bullying. Of the different forms of cyberbullying, the form of making jokes about/ making fun of others was the most frequent (64.3%) and spreading rumors was less frequent (60.9%). Both victims and bullies experienced being made fun of or being the butt of jokes quite frequently (32.3% and 18.2%, respectively). A possible explanation for the prevalence of this category in cyberspace is that making jokes and fun of others may not be considered particularly harmful by people in general.

Victims' most common type of cyberbullying experience was "being threatened," and bullies' most common type of cyberbullying experience was "to threaten or to harass." This type of cyberbullying might happen only between the victim and the bully, completely escaping the notice of other people. Compared to making fun of others, threatening might generally be perceived as serious and wrong behavior, and for this reason, the bullies would have issued the threats secretly. This type of cyberbullying might actually be the most frequent but appears to remain unnoticed by most stakeholders, including peers, teachers, and parents.

It is noteworthy that the bystander-related part of the survey generally presented the highest percentage of cyberbullying experiences, the victim-related part presented the second-highest percentage, and the bully-related part presented the lowest percentage. According to the observed pattern, bystanders seem to have been the group most frequently involved in bullying episodes; also shown in the survey results was that this very same group was the least likely to report a bullying incident in which they were not directly involved. Conforming to the nature of self-report surveys, the bullies themselves seemed the least willing to report their own behavior, particularly in comparison with the victims, while the overall experience score of the bully-related part is generally higher than that of the victim-related part. Even though

Table 2
Bullying method witnessed/suffered/used by different role-players.

Form	Bystander	Victim *n* (%)	Bully
To threaten or harass	346 (63.5)	190 (34.9)	111 (20.4)
To make jokes about/fun of	350 (64.3)	176 (32.3)	99 (18.2)
To spread rumors	332 (60.9)	137 (25.2)	66 (12.2)

the current study has preserved the anonymity of the participants, the participants who were more involved in bullying were less willing to discuss the bullying. Another possible explanation of the least-frequent reporting of cyberbullying is that the bully group was indeed the smallest group, much smaller than the bystander group and the victim group. A cyberbullying event may, rather than exhibit a one-bully-to-one-victim pattern, rest on a multiple-victim combination.

4.3. Gender difference

As shown in Table 3, the results of this study reveal that male students have a mean score of 1.91 on a 5-point Likert scale for each questionnaire item on bystander experiences, 1.41 on victim experiences, and 1.33 on bullying experiences. Female students, compared to male students, have a lower mean score of 1.82 on bystander experiences, 1.29 on victim experiences, and 1.11 on bullying experiences. Male students generally have higher scores on all three kinds of cyberbullying experiences. The *t*-test revealed significant gender differences regarding both victim score and bullying score. In spite of the anonymous and indirect nature of cyberbullying, male-student bullying outdid female-student bullying in terms of both victimization and bullying experiences.

The results are consistent with results from previous studies on traditional face-to-face bullying (e.g., direct physical and direct verbal abuse), but not with results from earlier studies on cyberbullying. Previous studies have not reached agreements on the gender difference in bullying; some found that boys were more likely to bully and to be involved in direct bullying (Hokoda, Lu, & Angeles, 2006; Nabuzoka, 2003) and some found that there was no gender difference (Nabuzoka, 2003). However, it is generally believed that females are less likely to bully than their male peers and it is also suggested that females prefer to apply indirect or relational bullying tactics, such as acts of isolating and acts of ignoring (Crick, Grotpeter, & Bigbee, 2002). Communication mediums thus could be a less direct way of bullying and could lessen or erase or even reverse the gender difference in cyberbullying.

In this study, male students reported greater levels of both bullying and victimization experiences than females, and the result was aligned with previous bullying studies (Olweus, 2003). Although cyberbullying usually is more indirect and relational than traditional bullying and would, in theory, be preferable to girls, our cyberbullying-survey results show no difference between bullying with communication technology and bullying without communication technology. The trend of less-direct bullying behavior in girls may be obvious in relation to use of communication tools, but there is a possibility that boys use computers more often and are better at operation skills than is the case with girls. As a possible factor influencing the inconsistency of gender difference in cyberbullying, technology-use background receives further discussion in a later section of this article.

4.4. Academic-achievement difference

In this study, a one-way ANOVA was conducted with the experience scores of the three cyberbullying-related roles (i.e., of bystanders, victims, and bullies) serving as dependent variables for examining the differences in the three groups of academic achievement (above average, average, and below average). A test of the homogeneity of variances was conducted before analysis. As Table 4 indicates, all three academic-achievement groups had no significant difference in their cyberbullying experiences.

These results were not consistent with those of Ma's study (2001), which suggested that students who perform better in academics are, in general, the target of bullying. In contrast, all three academic-achievement groups from the current study revealed no difference among one another regarding cyberbullying experience, irrespective of one's role as a bystander, victim, or bully. The possible reason is that Taiwan society is more test-oriented than the United States or Canada owing to Taiwan's deep-rooted Confucianism (Hokoda, Lu, & Angeles, 2006). In Taiwan, 7–9th graders usually study 8 h or more a day in school in order to pass entrance exams for high schools. Studying and academic performance play a huge part in teenagers' lives and constitute more of an ultimate goal pertaining to three-year school life than an emotional commitment or or a personal marker. The current study's results indicate that academic performance affects neither daily relationships nor the harmony and balance of the class nor a certain group in regards to their cyberbullying experiences. Therefore, there should be relevant factors influencing cyberbullying in addition to the relevant factor of academic achievement in the Taiwan context. However, in this study, academic-achievement level was self-reported (41.6% above average, 38.4% average, and 20.0% below average), and the distribution was not totally even. Therefore, the results of our study should be interpreted conservatively, and definitely more research is needed to explore the relationships between academic achievements and cyberbullying experiences.

4.5. Technology-use difference

Do these different technologies make any difference regarding cyberbullying experience? In order to investigate the differences among technologies used in cyberbullying, we conducted a MANOVA. The results show that Wilks' lambda was significant on all bystander ($F = 17.96$, $p < .001$), victim ($F = 8.37$, $p < .001$), and bully ($F = 3.98$, $p < .001$) experiences. As Table 5 shows, for bystanders, a post hoc test further revealed that the mean score of using IM was greater than the mean scores of the other four tools, and that the mean score of using websites and BBSs was greater than the mean scores of using chat rooms, e-mails, and cell phones. The same type of analysis was conducted on victims and bullying (Table 5). IM was the dominant tool in all three kinds of cyberbullying experiences. Websites and BBSs were the second most common environment where one would witness cyberbullying. For victims, the most likely bullying tool was chat rooms, the second most likely tool being IM. Also, the results on bullies reveal that both of the synchronous environments, IM and chat rooms, were the two most frequently used spaces in which bullies cyberbullied others.

While social-networking sites and chat rooms have served as fertile ground for cyberbullying in the United States (Mesch, 2009), the current study found that IM was the space in which

Table 3
Mean scores on bystander, victim, and bullying experiences.

	Male		Female		*T*
	Mean	SD	Mean	SD	
Bystander	1.91	8.62	1.82	7.66	1.40
Victim	1.41	7.33	1.29	4.79	2.46**
Bully	1.33	7.62	1.11	3.65	4.10**

**$p < .01$.

Table 4
Cyberbullying-experience scores of the three academic-achievement groups.

	Above average		Average		Below average		*F*
	Mean	SD	Mean	SD	Mean	SD	
Bystander	1.85	7.50	1.86	8.31	1.88	7.10	.025
Victim	1.33	5.86	1.36	6.45	1.34	6.18	.121
Bully	1.21	5.99	1.21	5.96	1.25	5.93	.182

Table 5
Results of the MANOVA and the post hoc test of bystander, victim, and bully experience scores.

Role tool	Mean	SD	*F* value	Sorting of different paired samples in the post hoc test
Bystander				
IM	1.90	1.128		
Chat room	1.79	1.124	17.96**	IM > chat room > website & BBS > e-mail > cell phone
Website & BBS	1.87	1.067		
E-mail	1.80	1.083		
Cell phone	1.60	.920		
Victim				
IM	1.42	.858	8.37**	IM > e-mail > chat room > cell phone > website & BBS
Chat room	1.31	.792		
Website & BBS	1.25	.673		
E-mail	1.32	.808		
Cell phone	1.25	.699		
Bully				
IM	1.23	.701	3.98**	IM > chat room > website & BBS > cell phone > e-mail
Chat room	1.22	.816		
Website & BBS	1.19	.637		
E-mail	1.16	.615		
Cell phone	1.17	.667		

**$p < 0.01$.

teenagers in Taiwan were most likely to experience cyberbullying. Among Taiwanese teenagers, social-networking sites, such as Facebook and MySpace, are far less popular than the five technologies investigated in the present study. The cases of social-networking sites cannot be put on par with one another in different contexts (e.g., Taiwan and the United States). It is interesting to note that there are basic differences between IM operations and chat-room operations. Chat rooms, as Mesch (2009) states, provide potential contact with motivated cyberbullies who might be total strangers to the victim. In contrast, IM requires log-in identification, and participants in an IM conversation must be users who have, first, mutually approved of both the conversation and its participants. Our finding that IM in Taiwan is the dominant tool of cyberbullying conforms with another finding of our study: that cyberbullying victims and also bystanders can identify the bully, meaning that the anonymity of cyberbullying does not always exist (for more details on this matter, see Section 3.7).

The current study notes that, among participants, cell phone messages constituted the least common tool of cyberbullying. All three groups of roles in cyberbullying reported significantly lower scores when using cell phones. The present study found that the majority of cyberbullying happened online through personal computers, which was a finding whose subject matter differs strikingly from Japan-based *Ijime* (Akiba, 2004; Rios-Ellis, Bellamy, & Shoji, 2000), whose chief characteristics are the rapid spread of rumors and the extensive use of cell phones. There were also quite a few cell phone users among Taiwanese teenagers participating in the present study but they seemed not to use the tool for bullying. Although Taiwan and Japan have similar collectivistic cultures, and although bullying in Taiwan may be similar to *Ijime* in Japan (Hokoda, Lu, & Angeles, 2006), the related technology-use habits in Taiwan seem to differ considerably from those in Japan.

4.6. Interrelationships in roles of cyberbullying experiences

The experience scores of each role were calculated, and bivariate correlations were examined. The results show that all three groups are correlated with each other, while the correlation between the bully group and the victim group is highly significant (Pearson's $r = .720$, $p < .01$). Bystanders were more likely to be victims (Pearson's $r = .660$, $p < .01$) and to be bullies (Pearson's $r = .456$, $p < .01$).

The high correlation between victims and bullies in our results indicates that there may exist a bully-victim phenomenon in cyberspace. Bully-victims, who bully others and also are bullied, represent a highly intricate relationship in cyberbullying. In traditional bullying, the victims hardly can fight back because of an imbalanced physical-power relationship between victims and bullies. Cyberspace changes the rules, so that everyone with an e-mail account or other such tools can spread rumors quickly and harass others by text messages, provocative images, and the like. The imbalanced power relationship is no longer a matter of course; therefore, there could be more bully-victims in cyberspace, and the role-turning cycle gains strength.

The roles involved in cyberbullying seem more complicated than the roles involved in traditional bullying, which are not limited to bystanders, victims, and bullies (see also Olweus & Limber, 1999). Owing to the nature of communication technology, bullies can easily hide behind the computer screen and there could be many accessories or followers who forward the cruel words and embarrassing pictures that typically characterize cyberbullying. In this case, bystanders who forward the ill-intentioned messages to others can be considered members of the bully group. Similarly, bystanders who receive the ill-intentioned messages about friends may consider themselves members of the victim group. That is possibly why these three roles are highly related to each other in this study. It is also very possible that the original message provider does not intend to harm, but that anyone in cyberspace might viciously alter or widely disseminate the out-in-the-open message, thereby creating a vicious cycle that does not rest on an initial act of ill will. In contrast, it is also very possible that anyone in cyberspace might put either a permanent stop or a temporary stop to vicious out-in-the-open messages that do, indeed, rest on an initial act of ill will. Therefore, the ability of the many bystanders viewing ill-intentioned materials to take positive actions to stop the spread of the materials could be a powerful key to cyberbullying prevention.

4.7. Anonymity of cyberbullying

The findings of this study suggest that most of the teenage participants knew the given bully's identity and that bullies in cyberspace did not try to disguise themselves by using the Internet as a cover. As Table 6 indicates, among those who were bullied (n = 281), only 25.1% of participants had no idea who had bullied them. Among bystanders of a cyberbullying event (stating that they had witnessed cyberbullying), 43.1% were unaware of the given bully's identity. More than a half of each of the two groups claimed that they were aware of the given bully's identity.

Table 6
Awareness of a bully's identity.

	Number of answers	Unaware (%)	Aware (%)
Bystander	459	198 (43.1)	261 (57.9)
Victim	281	70 (25.1)	211 (74.9)

The current study's findings are inconsistent with (Li, 2007a, 2007b) identifying anonymity as a characteristic of cyberbullying. On the other hand, the current study's findings confirmed the findings of Juvonen and Gross (2008), showing that more than two-thirds of victims knew or at least could suspect who had bullied them in cyberspace. A possible explanation of this last finding concerns the prominent IM usage, where account names identify for users the correspondent with whom they are communicating; thus, less impersonation happens. Another possible reason is that cyberbullying was not independent of face-to-face bullying and, more generally, of daily school life. Cyberbullying might happen alongside traditional bullying, and the victim would consequently know the identity of the bullies. Victimized students could clearly make connections between people who would perpetrate an act of bullying to the victims' face and on-line bullies who would perpetrate an act of similar content but of different form.

Therefore, the assertion that anonymity is a universal characteristic of cyberbullying should remain in doubt. The topic may reflect influences from technology used (e.g., with or without log-in identification, synchronous or asynchronous) and social factors (e.g., the classroom climate as either actively anti-cyberbullying or not, the classroom climate as exhibiting more individualism than collectivism or vice versa, the teacher's attitude toward and response to cyberbullying).

4.8. Response to cyberbullying

This study confirms the findings of Li's study (2007b) that teenagers are reluctant to report cyberbullying. In each section of the current study's survey, students were asked to report their response to cyberbullying in multiple-answer questions and open-ended questions. If they had had no previous experience as a bystander, as a victim, or as a bully in such an event, then they might have skipped these questions. When asked about the person to whom they would talk about or report the event, 545 respondents yielded 200 answer counts in the as-a-bystander section, 342 in the as-a-victim section, and 321 in the as-a-bully section. Bystanders, as the largest group involved in cyberbullying, actually were the least likely to take action. A prevalent idea was that people considered the act of reporting neither their business nor their responsibility and that the cyberbullying itself was "no big deal." In short, bystanders did not feel responsible for reporting to adults or taking action against cyberbullying events. Moreover, bystanders radically suggested that these events constitute others' privacy in which the bystanders should not get involved. A few argued that they did not report the events because the people involved were not their friends. As Table 7 shows, among those 200 who did report as bystanders of cyberbullying, only 11.2% told parents and 3.7% told teachers. Reasons for not reporting either at all or to adults include (1) being afraid of getting into trouble and (2) feeling a sense of uselessness in looking to adults for assistance. Fear of getting into trouble might refer to being threatened by the bully, being regarded as an informer or a gossip, or being excluded from an "in" group. The clear and common attitude of apathy and indifference should be a worry for prevention efforts.

In this study's survey, many more victims than bystanders reported cyberbullying events. According to the multiple-choice and open-ended questions (Table 7), peers, especially classmates (33.4%) who knew the involved people and the corresponding school's context, and siblings (16.1%) were the participants to whom victims would most likely turn. This finding is consistent with previous research (Gini, Pozzoli, Borghi, & Franzoni, 2008; Unnever & Cornell, 2004). Also as Table 7 indicates, the participants in the current study were clearly less likely to turn to adults, including parents (11.6%) and teachers (5.9%). According to the reasons provided in the open-ended part, many victims told no one because they wanted to avoid both triggering parental concern and appearing to be the "the weak one." The lowest percentage of reporting to teachers, combined with the open-ended questions' results regarding reasons, shows that students possibly did not believe that teachers would handle the matter effectively and that reporting an event might be not only useless but indeed counterproductive. As for bullies, the pattern was the same but all percentages were the lowest of the bunch, which is reasonable insofar as the bullies were typically unwilling to admit their own behavior to people.

The current study has noted that, in comparison with the individualism in many Western countries, Taiwan and Japan exhibit collectivism, where people would put the group's well-being ahead of individuals' well-being (Bond & Hwang, 1986). The social conformity might, in the context of these two societies, contribute to the indifference among bystanders of cyberbullying. Teenagers are taught to obey orders and to follow rules, and social norms can contribute to the teens' passive responses. Partly in line with Japan's *Ijime*, Taiwanese teenagers responding to this study's open-ended questions did not report that they were afraid of becoming the next victim if they took some action against the bullying. On the whole, they neither justified cyberbullying nor tried to stamp it out.

Classmates were the students to whom teenagers would like to talk about cyberbullying experiences, regardless of whether they (the respondents) were involved in the event as bystanders, victims, or bullies. The results herein provide a direction for cyberbullying prevention, which should start with and focus on schoolmates. Education on responsible reactions by teenagers is imperative, for they would always be the first to know about and to suffer from cyberbullying before teachers, parents, or any other stakeholder enters the picture.

5. Implications

Cyberbullying, a mixture of traditional bullying behaviors and modern technology, is an offshoot of advances in technology. As discussed, gender, academic achievement, and the use of technology might contribute to cyberbullying, but these factors are not as significant in this study as they are in other contexts. For example, academic achievement in Taiwan did not reflect a significant

Table 7
People who reported cyberbullying (by role).

	Number of answers	Participants to report, as determined from the total number of answers (%)					
		None	Sibling	Classmate	Net-pal	Parent	Teacher
Bystander	200	22.9	15.8	36.7	9.7	11.2	3.7
Victim	342	21.6	16.1	33.4	11.4	11.6	5.9
Bully	321	58.7	7.9	17.8	7.5	5.5	2.6

difference in cyberbullying experiences as it did in a Canadian case (Ma, 2001). Technology with the greatest effect on cyberbullying is instant messaging programs (e.g., MSN), rather than the popular social-networking sites (e.g., Facebook) in the United States and Canada (Kowalski et al., 2008). Insofar as Taiwan has an enormous population of Internet users, and insofar as many Taiwanese teenagers (76.7%) go online for communicative purposes, it is reasonable to conclude that bullying behavior characterizes cyberspace experiences in Taiwan. Furthermore, it appears that the methods and the tools accompanying this new form of bullying are varied. Cyberbullying behavior might be highly context-dependent and influenced by educational systems, school climates, and cultural norms, which differ from country to country. Although the definition of *cyberbullying* refers to certain standard themes such as intention, repetition, and harm, the factors that influence the cyberbullying seem different across cultures.

The results of this study indicate that the attitude of Taiwanese teenagers toward cyberbullying is generally one of indifference. Bystanders' responses could be a key to preventing the spread of cyberbullying. As the major group involved in bullying behavior in cyberspace, everyone with Internet access could become a member of the bystander group. In this regard, the questions of critical importance are how to transform bystanders' general indifference to active and positive reactions, and how to equip bystanders with power and tools that facilitate such reactions. In the United States, there are specific laws addressing bullying through electronic communication, but they vary from state to state (Kowalski et al., 2008); however, because Chinese culture values peace and harmony and the avoidance of conflict in daily life, seldom would Chinese display their personal disagreement and caring in public. Students' answers to our open-ended questions about why they did not report cases of cyberbullying point to a strong tendency to avoid personal and group conflicts, a tendency that might be a formidable obstacle to cyberbullying prevention in Taiwan.

Being in a highly IT-rich environment, most Taiwanese teenagers nowadays are equipped with cell phones and get online everyday. Compared with many other countries, Taiwan is unique in both the electronic communication tools that its teenagers use and the communication-related attitudes that its teenagers hold. It seems that Taiwan's most popular electronic communication tool is neither the cell phone (which dominates in Japan), nor social-networking sites (which are increasingly a "cultural requirement" among U.S. high school students) (Kowalski et al., 2008). In Taiwan, the most popular tool is instant messengers (IMs), such as MSN, Yahoo Messenger, and Skype. The trend might serve as a unique fertile ground for cyberbullying.

Cyberbullying is serious but has gone relatively unnoticed so far in Taiwan, partly owing to the novel nature of the phenomenon and to most teachers' and parents' lack of familiarity with the technology and the media (Dehue, Bolman, & Vollink, 2008). Adults' unawareness of cyberbullying reflects the relative absence of adult supervision in cyberspace. And yet, the majority of teenagers use the Internet at home, where parental mediation has proven to be effective for cyberbullying prevention (Mesch, 2009). Middle school teachers, parents, and policymakers should all be concerned with the issue and facilitate prevention in the near future. While technology use differs from country to country, more empirical studies and detailed examinations of factors influencing cyberbullying in East Asian contexts are needed for development of a rigorous and more effective prevention program. The findings of this study constitute an important step in addressing these issues.

5.1. Limitations and recommendations for future studies

We acknowledge limitations of this study and hope to provide avenues for further exploration and research. First, this study adopted the self-report method, that is, participants were asked to answer the survey concerning their perception (knowledge) of cyberbullying. Though relevant terms were defined and relevant behaviors were explained throughout the survey, participants' judgments were, in all likelihood, unavoidably subjective to a certain degree. Future research should use other methods, such as those involving focus groups, in-depth interviews, and observations, to triangulate and verify the findings. Second, owing to its limited resources, the current study collected research data only from students. Future studies can collect data not only from students but also parents, teachers, school staff, and any other stakeholders. Various types and sources of data would be helpful in gaining a more comprehensive view on the phenomenon.

Third, only correlations of possible factors about cyberbullying were identified in the present study. However, causal relationships might also exist among these factors. Other statistical analyses (e.g., multiple regression), if applied to this topic, could shed more light on the bullying behaviors taking place in cyberspace. Fourth, though perhaps not yet included in existing literature, other possible factors, such as school climate and the psychological conditions of the three different cyberbullying roles (bystander, victim, and bully), should receive serious attention in future studies.

Appendix A. The first section of the cyberbullying survey

1. Have you ever been aware of classmates being harassed, hurt emotionally, or threatened online?
2. Have you ever been aware of classmates being made fun of or humiliated online?
3. Have you ever been aware of classmates being slandered or defamed online?
4. Have you ever been aware of others' malicious Internet-based behaviors or others' fake e-mail/IM accounts?
5. Have you ever been aware of classmates being hurt emotionally on websites (e.g. web forums)?
6. Have you ever been aware of classmates being hurt emotionally in chat rooms?
7. Have you ever been aware of classmates being hurt emotionally through e-mails?
8. Have you ever been aware of classmates being hurt emotionally through instant messengers (e.g., Skype, Yahoo Messenger, or MSN Messenger)?
9. Have you ever been aware of classmates being hurt emotionally through cell-phone text messages?
10. Have you ever been aware of classmates being hurt emotionally through any other tools online? If you have, please specify: _____.
11. If you have ever seen or been aware of somebody being threatened, harassed, or humiliated online, what type of person was this victim? Siblings, classmates, netfriends, strangers, cannot identify, other _____ (please specify)
12. To whom have you ever reported online bullying incidents? Siblings, classmates, netfriends, strangers, school teachers or staff, parents, other (please specify)
13. If you have told no one, why? And did you take any other action?

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