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Published: 01/08/2004

[Link to publication](#)

Citation for published version (APA):

Chan, K., Shen, F., & Wilkinson, J. S. (2004). *Parental guidance of children's internet use in Hong Kong: An explanative model*. Paper presented at Association for Education in Journalism and Mass Communication (AEJMC) 2004 Convention, Toronto, Canada.

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rev March 20, 2004

Parental guidance of children's Internet use in Hong Kong:

An explanative model

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Paper submitted to Mass Communication and Society Division of Association for Education
in Journalism and Mass Communication annual conference, August 04-07, 2004, Toronto,
Canada

Running Head: Parental guidance Internet

**Parental guidance of children's Internet use in Hong Kong:
An explanative model**

Abstract

This study examined the relationship between parental attitudes toward the Internet, use of restrictive or non-restrictive guidance approaches, and family communication patterns. A total of 354 Chinese parents in Hong Kong were surveyed. Structural equation modeling (SEM) determined that parents' demographic factors and family communication patterns exert the greatest influence on attitudes and guiding behaviors. Parental computer and Internet literacy also held a pivotal mediating role.

Keywords: parental guidance-children-Internet use-family communication

Parental guidance of children's Internet use in Hong Kong: An explanative model

Introduction

The potential negative impact of media on children has long been a serious concern for parents, educators, scholars and policy makers. Traditionally, the focus has been on television's undesirable content such as violence, pornography or an unreal dramatized world (Nathanson, 1999, 2001). But media use now includes time spent on the Internet (e.g. Mitchell, Finkelhor, & Wolak, 2003; Valkenburg & Soeters, 2001) as the World Wide Web (WWW) has become an integral part of everyday life. Previous generations of parents never had to worry about something as pervasive and potentially disruptive as the Internet. The Internet represents a fantastic world of opportunity for children, fraught with both good and bad. Thus, considerable attention and concern are now focused on children and how they use the Internet because they are seen as a 'the digital generation,' at the vanguard of new skills and technologies, yet also vulnerable and at risk (Livingstone, 2003).

Internet household penetration in Hong Kong is one of the highest among cities in the world, reaching 60% in 2003 (Census and Statistics Department, 2003). About 56 percent of the population aged 10 years and older has used the Internet in the preceding twelve months (Census and Statistics Department, 2003). As in the other countries, users were more likely to be younger and better educated (Rogers, 1995). Among 10-14-year-olds, 90 percent reported using the Internet, a figure almost double (49%) that of adults between 35-44 years of age (Census and Statistics Department, 2002). This supports other reports that children

tend to be more experienced in using the Internet than their parents. The implications of this “digital gap” are worthy of scholarly investigation.

Although research about the Internet has grown exponentially along with the development and spread of ICTs (Information and Communication Technologies), it still remains a comparatively small body of literature (Kim & Weaver, 2002). The study of children’s Internet use is similarly inchoate, although key questions of academic and policy significance have focused on the dangers of such use (Livingstone, 2003). Conversely, family communication pattern and parental guidance on children’s media consumption, especially on television, has long been studied and has produced clearer findings resulting in content policy and regulation (Fujioka & Austin, 2002; Krcmar, 1998; Larson, 1993; Nathanson, 1999, 2001).

It is problematic that these two frames—parental control and the mediation of children’s Internet use—have not converged. As Livingstone (2003) summarized, few answers are forthcoming to questions regarding children’s Internet use and the appropriate role of parents and teachers.

Therefore, this study, explores how factors such as family communication patterns, parental attitudes toward Internet and other demographic variables help to shape parental guidance of their children’s Internet use. The current study draws upon established literatures to construct a model that will map the source and extent of influence that can be attributed to these factors.

Children, Internet and Parental Guidance

Children are generally enthusiastic adopters of the Internet, for communication,

entertainment and education. Although developmentally they are under the protective umbrella of their parents, on the subject of the Internet they often consider themselves to be more expert than their parents (Livingstone & Bober, 2003). Children regard the Internet as a flexible medium, and research has identified (in rank-order) the following motives for using it: affinity with computers, information, entertainment, boredom avoidance, online social interaction, and off-Line social interaction (Valkenburg & Soeters, 2001).

Notwithstanding the fact that children enjoy their digital web experiences and integrate them into their daily lives, it must also be noted that the Internet harbors negative impacts, both real and potential. According to the research literature, there are three categories of online danger (Turow, 1999; UCLA, 2001; Williams, 2002). These three categories are (1) exposure to improper content, (2) the incidence of exploitative and dangerous contacts, and (3) issues of privacy, advertising and commercialism.

While media have an important role in children's socialization, parents are even more important. In their role as gatekeepers, parents screen out undesirable content and prohibit overuse. Research on children's use of television found that parental involvement in children's media consumption enhances comprehension, learning, and skill acquisition (Abelman, 1985; Reizer, Testmer, & Phelps, 1984; Salomon, 1977; Collins, Sobol, & Westby, 1981). It would be anticipated that parents would fulfill the same role regarding their children's Internet use.

Employing factor analysis, Bybee, Robinson, and Turow (1982) identified three types of parental guidance related to children's use of television: (1) *Restrictive Guidance*, which involves imposing limits and restrictions on viewing time (when to watch), viewing amount

(how many hours are allowed to watch) and viewing content (e.g. which TV program or channel to watch); (2) *Evaluation Guidance*, which involves discussing media content with their children for the deliberate purpose of offering evaluation on meaning, morality and characterization; and (3) *Unfocused Guidance*, a more general type of guidance, where parents simply sit and watch television with the children and talk to them while watching.

As the control and mediation of the Internet is far more complex than traditional media, it may be difficult to differentiate Evaluation Guidance from Unfocused Guidance. Web sites do not provide as many visual or aural cues for prompting a parent to comment or ask questions.

Therefore, this study adopted Atkin, Greenberg and Baldwin's (1991) conceptualization of 'Nonrestrictive Guidance' (comprised of Evaluative and Unfocused Guidance) and include additional behavior items that help describe the unclearness of the situation. Thus, parental guidance in this study was divided into two categories: (1) *Restrictive Guidance*, which involves imposing limits on the child's Internet use time and monitoring restrictions on content (checking web sites visited and downloaded material, installing tracking and blocking software); and (2) *Nonrestrictive Guidance*, which involves holding deliberate discussions about and teaching specific skills regarding Internet use.

Based on the taxonomy illustrated above, two research questions are proposed:

RQ1: What is the extent of Restrictive and Nonrestrictive Guidance on children's Internet use demonstrated by Hong Kong parents?

RQ2: How do parental guidance behavior vary for parents with different demographic profile?

The degree to which parents will control their children's media consumption varies

across family, country and culture, and is contingent on several direct and indirect factors. Perhaps the most critical among these are family communication patterns, the way that parents communicate with their children.

Family Communication Patterns (FCP)

The family communication model (Chaffee, McLeod, & Atkin, 1971; McLeod & Chaffee, 1972) was developed to explain media socialization issues. According to Chaffee et al, parental communication focuses on two relatively independent dimensions. The Concept-oriented communication dimension stresses the value of questioning or challenging ideas in order to better understand them. The Socio-oriented communication dimension emphasizes deference and harmony and the avoidance of controversy. Although this model has received critical reexamination by some scholars (e.g., Ritchie, 1991), other research suggests the FCP model effectively predicts parental guidance and socialization outcomes in a variety of contexts.

Family communication patterns have been extended to family norms and behaviors regarding television (Krcmar, 1996). Specifically, this was applied to parental mediation, defined as the active discussion of television content with children (Fujioka & Austin, 2002). These studies found that parental type can predict the kinds of guidance behaviors that will then be exerted by parents regarding the media use of their children. Therefore, a parent's choice of communication should correspond to the type of guidance they offer regarding media use—in this case, Internet use—along the two dimensions of socio-oriented communication and concept-oriented communication. In guiding TV viewing, socio-oriented communication parents tend to display their desire for more control than discussion (Carlson, Grossbart, & Stuenkel, 1990; Krcmar, 1996), while concept-oriented communication

encourages more open discussion. Therefore, it can be hypothesized that:

H1a: Parents with high socio oriented-communication tend to adopt restrictive guidance towards children's Internet using.

H1b: Parents with high concept oriented-communication tend to adopt nonrestrictive guidance towards children's Internet using.

Parental concern about children's use of media reflects both personal and cultural differences in the perceived desirability of controlling outside influences on their children. Empirical studies identified cultural differences in family communication patterns, such as American mothers' emphasis on concept-oriented communication, while Japanese mothers' stress socio-oriented communication (Rose, Bush, & Kahle, 1998). As a former British colony for one hundred fifty years, Hong Kong culture has been depicted as a combination of East and West. The Eastern emphasis on filial piety and demands of obedience to adults or superiors has played an important role in the patterns of child training (Ho & Kang, 1984; Yang, 1989). However, Hong Kong parents probably tend to fall in the middle area of the continuum between a traditional Chinese parenting style and a Western one. Chan's (2001) study of Chinese children in Hong Kong indicated that parents use television commercials to teach children about restrictive consumption and desirable moral behaviors.

When parents are upset, they tend to proactively protect their children from what they perceive to be negative influences lurking on the Internet. Therefore, variables should be included that map the underlying processes of parental control and mediation behavior toward children's Internet use.

The Digital Divide

A number of studies have identified attitudinal and behavioral differences between societies and cultures that use the Internet (Lenhart, Rainie, Fox, Horrigan, & Spooner, 2000; NTIA Report, 2000; Bonfadelli, 2002). Unlike television viewing, where parents can execute mediation and control confidently and smoothly, monitoring Internet use is much more complicated. For example, certain television program genres (cartoons and educational shows) can quickly be judged as safe. But for the Internet, parents generally can't engage in the same behaviors. Even if parents logged online, they would have a narrower range of personal goals online and with a pattern of using Internet at a smaller range of places (Loges & Jung, 2001). Not surprisingly, Internet applications and jargon tend to be unfamiliar to parents. According to one 17-year-old girl, for example, "My dad hasn't even got a clue. (He) can't even work the mouse" (Livingstone & Bober, 2003). This is not to say that parents are well-versed in the jargon of other media, but that the generation gap for the Internet is large and conspicuous.

This "Digital Divide" fuels the concerns of parents, and their (lack of) proficiency and knowledge of computers and the Internet constitute an independent variable that affects their attitudes toward their children's Internet use. Knowledge of the Internet not only influences the parents' attitude, but their actions too. Therefore, we can hypothesize that:

H2: Parents with high computer and Internet literacy will have a more positive attitude toward their children's Internet use.

H3a: Parents' computer and Internet literacy will correlate positively with nonrestrictive guidance.

H3b: Parents' computer and Internet literacy will correlate negatively with restrictive

guidance.

Some research suggests that most parents believe “a lot” or “some” harm and danger can come to young people through the Internet (Lenhart et al., 2001; Livingstone & Bober, 2003). Therefore, many parents cope by imposing rules on Internet use, monitoring online activities and installing filter software (Lenhart et al., 2001). The fact that parents worry enough to impose such actions bears investigation. Imposing rules generally produces mixed results. Research by Bybee et al. (1982) found that parents who believed TV had a negative influence tended to use restrictive guidance and those who did not view TV as mostly negative tended to use evaluation guidance. The same type of relationship can be extended to parental views of Internet use.

H4a: Parents who have relatively positive attitude towards Internet will be more likely to use nonrestrictive guidance.

H4b: Parents who have relatively negative attitude towards Internet will be more likely to use restrictive guidance.

Methodology

Sample

This study used a non-probability sample for data collection. From October to November 2003, students of a public university in Hong Kong distributed a structured, close-ended paper questionnaire through personal sources to friends with children age 6-19. A total of 367 questionnaires were collected from Hong Kong Chinese parents with children (children being defined as between the ages of 6-19). Any questionnaire collected that was less than 50% was considered unusable. Also, any questionnaire respondent who did not

have a child within the specified age range was deemed unusable. This resulted in a total of 354 usable questionnaires.

The sample profile is summarized in Table 1.

(Table 1 here)

Two thirds of the samples were mothers and one third were fathers. About eighty percent of the respondents reported being between the ages 30-49 and more than eighty percent had at least secondary school education. The median household income of the sample was HKD\$20,000 per month (around USD\$32,000 annually), which was marginally higher than the official median household income in Hong Kong (around USD\$28,800 annually)(Census and Statistics Department, 2001).

The target population for the study was parents with children ages of 6-19 years old. Regardless of whether parents have additional children out of the age range, their responses were considered valid as long as one child fell within the age range of 6-19 years. Previous studies suggested that, children aged 5-15 were most likely to be subjected to parental concern and control over television viewing (Cardoza, 2002). While considering Internet use involves more intellectual and physical maturation, the age group of the child in this study was adjusted to 6-19 years of age.

Questionnaire

The questionnaire was based on previous research on family communication and parental mediation of television use in Mainland China (Chan & McNeal, 2002). For this study, the instrument was adapted to compare family communication patterns, guidance behaviors and attitudes towards children's Internet use. The draft questionnaire was revised based on a pilot study of five parents. Likert scale items (5 points; 1= very seldom, 5= very often) were used

to measure family communication patterns, the extent of parental guidance and parental attitudes. Demographic data such as sex, age, education, occupation, household income, and number and age of children in the family were also collected.

Measures

Four major groups of variables were included: family communication patterns, computer/Internet literacy, attitudes toward children's Internet use, and parental guidance. The first two groups of variables were treated as independent (exogenous) variables, whereas the latter two were identified as dependent variables (endogenous).

Family communication patterns. Twelve statements about family communication regarding general consumption were adopted to measure two dimensions of family communication. For example, one item was "I ask my child what he/she thinks about things that he/she buys for him/herself." Socio-oriented communication was operationalized as the aggregate of responses on five items taken from a scale developed by Moschis, Moore, and Smith, (1984). Similarly, concept-orientated communication was operationalized as the aggregated responses of four items from that same scale plus three related items taken from the family communication scale developed by Ward, Wackman, and Wartella (1977). The inter-item reliability (Cronbach's alpha) was 0.76 for socio-oriented communication and 0.69 for concept-oriented communication. The means formed the index of concept-oriented and socio-oriented communication.

Computer and Internet literacy. Computer literacy and Internet literacy were obtained by asking respondents to report their proficiency in computer and Internet use. These two items were subjected to reliability analysis and produced an index of computer and Internet literacy ($\alpha=.95$).

Parental attitudes toward children's Internet use. Eleven statements measured parental attitudes toward Internet, including two positive items and nine negative ones respectively. Negative statements reflected parental concerns about potential harm that might arise from Internet use. These concerns include the effect on children's academic performance, improper content such as pornography or violence, pirated software, exposure to predators online, etc. The nine items were internally consistent ($\alpha = .81$). In addition, there were two positive statements reflecting parental acknowledgement of the legitimate information and entertainment functions of the Internet. After recoding the negative items into positive statements, the eleven items were aggregated into a single index reflecting parental attitudes toward the Internet (higher score=more positive attitude). Reliability analysis produced an acceptable alpha coefficient ($\alpha = .75$).

Parental guidance. Eight statements were used to measure parental guidance of children's Internet use, comprising four restrictive guidance items and four nonrestrictive ones. The four restrictive guidance items reflected (a) setting limits on time-use, (b) limiting the sites the child is allowed to visit, (c) checking Internet use, and (d) installing monitoring or filter software. Nonrestrictive guidance items asked degree to which parents (a) co-used on weekdays, (b) co-used on weekends, (c) discussed Internet content, and (d) parental guidance on how to use the Internet. SPSS Reliability indicated acceptable alpha coefficients for both the indices of restrictive guidance ($\alpha = .73$) and nonrestrictive guidance ($\alpha = .84$) behavior.

Model Specification

Since this research measured several concepts with multiple variables and indicators, structural equation modeling (SEM) method was adopted to test the hypotheses, with AMOS 5.0 student edition (Arbuckle, 2003). In addition, SEM can test the direct/indirect cause and

effect relationships between variables, as well as the overall model goodness of fit (Maximum Likelihood) estimates for the model. The overall model is presented in Figure 1.

(Figure 1 here)

To simplify the figure, residual (error) variables for endogenous variables and covariances between exogenous variables were omitted from the model. It should be noted that socio and concept-oriented communication were both supposed to link with parents' attitudes and guidance behaviors to explore the potential relationships. In addition, the residual variables for restrictive guidance and nonrestrictive guidance were supposed to be co-varied. In order to enhance the model fitness, concept-orientated communication was supposed to link with socio-oriented communication.

Findings

The Extent of Parental Guidance. The first research question was presented as "What is the extent of Restrictive and Nonrestrictive Guidance on children's Internet use demonstrated by Hong Kong parents?"

The percentage distribution, means, and standard deviations of perceived parental guidance on their children's Internet use are summarized in Table 2.

(Table 2 here)

Overall, parental guidance of children's Internet use, including restrictive and nonrestrictive ones, was low. In general, parents adopted nonrestrictive guidance (M=2.14, S.D.=.8) less often than restrictive guidance (M=2.29, S.D.=.8), ($t=-4.3$, $p<0.001$). The most commonly used restrictive guidance methods were limits on time use (M=2.9, S.D.=1.1) and banning visits to certain types of web sites (M=2.6, S.D.=1.2). For nonrestrictive guidance, the most

frequently used guidance methods were discussing web surfing habits ($M=2.4$, $S.D.=1.0$) and teaching skills ($M=2.3$, $S.D.=1.1$). Hong Kong parents seldom co-used the Internet with their children.

Demographic Factors. The second research question was stated as "How do parental guidance behavior vary for parents with different demographic profile?" This question was analyzed through bivariate correlation analysis, and presented in Table 3.

(Table 3 here)

According to the table, gender was not a significant variable. There was little difference in guiding behaviors between mothers and fathers, except for the item 'teaching Internet skills.' Fathers ($M = 2.6$, $S.D. = 1.2$) were more likely to teach children Internet skills than mothers ($M = 2.2$, $S.D. = 1.0$; $t= 3.08$, $p < .01$). However, parental guidance was negatively correlated with age. Older parents were less likely to exert guidance on their children's Internet use. In addition, except for installing filter software, all guidance measures were significantly correlated with parents' education. Household income showed positive correlation with two guidance behaviors including teaching Internet skills and co-using on weekends. Parental guidance behavior was negatively correlated with child's age¹. Parents of younger children were more likely to adopt both restrictive as well as nonrestrictive guidance.

To investigate whether parental guidance behavior varied with the occupation of the parents, a one-way ANOVA was conducted. Results indicated that occupation had significant impact on discussing Internet contents ($F=5.1$, $p < .001$) and teaching Internet skills ($F=8.1$, $p < 0.001$). Parents engaged in production, construction, and domestic household work were

less likely to discuss Internet contents, and to teach Internet skills.

The Determinants of Parental Guidance. Overall, the structural model was supported, as displayed in Figure 2.

(Figure 2 here)

Although the Chi-square statistics were significant ($\chi^2=22.7$, $df=2$, $N=354$, $p<.001$), other indices (NFI= .96, IFI= .97, CFI= .97) suggested a good model fit according to the criterion for testing the structural model fitness (Holbert & Stephenson, 2002). The significant χ^2 was due to the reason that the dependent variables of restrictive guidance (Skewness=. 43) and nonrestrictive guidance (Skewness=. 45) were not normally distributed². However, because the incremental index indicated a good model, it is justified to believe the fitness of the current model. The model accounted for 28 percent of variance in parents' restrictive guidance and 41 percent of variance in parents' nonrestrictive guidance.

As shown in Table 4, the total effects of computer and Internet literacy on both restrictive guidance ($\beta^3= .34$) and nonrestrictive guidance ($\beta= .53$) were significant ($p<.001$).

(Table 4 here)

(Table 5 here)

The direct effects of socio-oriented communication on attitudes toward children's Internet use ($\beta=- .37$), restrictive guidance ($\beta= .23$) and nonrestrictive guidance ($\beta= .18$) were significant ($p<.001$). The indirect effect of socio-oriented communication on restrictive guidance was significant ($\beta= .07$, $p<.001$). The effects of concept-orientated communication on non-restrictive guidance ($\beta= .18$, $p<.001$) were significant. The attitude's effect on restrictive guidance ($\beta=-.20$) was significant ($p<.001$).

H1 stated that parents with high socio-orientated communication tend to adopt restrictive guidance towards children's Internet using and parents with high concept-oriented communication tend to adopt nonrestrictive guidance towards children's Internet using.

The model indicates that the parent-child total effect of socio-oriented communication on restrictive parental guidance was significant ($\beta = .30, p < .001$). Hence, H1a was supported. Also parent-child's concept-oriented communication was positively associated with non-restrictive parental guidance ($\beta = .19, p < .001$). Thus, H1b was supported.

In addition, H2 predicted that parents with high computer and Internet literacy will have a more positive attitude toward their children's Internet use.

The model did not show that parent computer and Internet literacy was a significant predictor for attitude toward children's Internet use. Therefore, H2b was not supported.

H3a hypothesized parents' computer and Internet literacy will correlate positively with nonrestrictive guidance. H3b hypothesized parents' computer and Internet literacy will correlate negatively with restrictive guidance.

The model indicated that computer and Internet literacy was a significant predictor of non-restrictive parental guidance ($\beta = .57, p < .001$). Nevertheless, computer/Internet literacy was not related to restrictive parental guidance. Therefore, H3 was partly supported.

H4a hypothesized parents who have positive attitude towards Internet will be more likely to use nonrestrictive guidance and H4b hypothesized parents who have negative attitude towards Internet will be more likely to use restrictive guidance.

The model did not find a significant correlation between positive attitude towards Internet and non-restrictive guidance; Therefore H4a was not supported. The model showed that

parents' attitude toward the Internet correlated negatively with restrictive parental guidance ($\beta = -.20, p < .001$). Therefore, H4b was supported.

Discussion

This study examined the scope and intensity of parental guidance on children's Internet use. Subsequently, the study developed a statistically-generated theoretical model to predict parental attitude towards Internet and guidance behaviors. The predictor variables were family communication patterns and computer and Internet literacy. While previous studies of parental guidance focused on TV viewing, this study examined Internet use. The results suggest that both family communication patterns and Internet knowledge were significant predictors of parental attitudes and guidance behaviors.

It is not uncommon to find that parents do not maximize their abilities to provide the most beneficial guidance. For example, the adoption rate of direct restrictions on use time and website has been relatively high, but indirect guidance such as discussion, co-use, teaching or filter installation tend to be unfamiliar to many parents (Comstock, 1975; Corder-Bolz, 1980). Our findings revealed that the level of restrictive guidance among Hong Kong parents is comparable to that of U.S. parents. However, we also found Hong Kong parents lagged far behind in non-restrictive guidance. One possible reason also suggested by previous studies on television in the U.S. (e.g., Austin & Nach-Ferguson, 1995), was that Hong Kong parents were not aware of the importance of their guidance behaviors. Our data suggest that the digital divide is a possible factor accounting for Hong Kong parents' low involvement.

Findings regarding the parental guidance behaviors and demographic difference have

indirectly provided evidence of the following: A gender digital divide (between mothers and fathers), a generational divide (between older and younger parents), an educational divide (between parents with low education and those with high education), and an occupational divide (parents engaged in production jobs or housewives and parents engaged in white collar work). This affirms some scholar's idea that the digital divide is not merely a generation effect (Loges & Jung, 2003). These divides are also shaped by parents' own Internet use habits, and indirectly reflected through their guidance behaviors.

Therefore, the digital divide acts as a barrier preventing parents from implementing healthier guidance strategies for their children. The findings indicate that guidance on Internet use, unlike television, was subject to parents' ability and knowledge to control and mediate their children's Internet use.

The current study demonstrates there is a strong relationship between family communication patterns and parental guidance behaviors. This was consistent with previous study of Chinese parents' mediation of children's TV viewing (Chan & McNeal, 2003). Thus the current study extended the relation of family communication patterns with parental guidance to the area of new media, specifically, the Internet, which demonstrated the theoretical validity of FCP in a new area. Family communication patterns provide a consistent, sometimes subtle, guide for children's media consumption.

Socio-oriented communication was positively linked to both restrictive guidance and non-restrictive guidance, while concept-oriented communication was positively related with nonrestrictive guidance only. This suggests that socio-oriented communication can be considered an expression of parents' desire to seek conformity and quiescence through the

assertion of control and power. This finding was consistent with previous finding of parental mediation of children's television viewing (Fujioka & Austin, 2002). For example, socio-oriented parents tend to make rules for using the Internet, but are less likely to engage in discussion, teaching and co-use behaviors. This is problematic because nonrestrictive guidance seems important to the development of children's media literacy skills.

Comparison of regression weights indicates that the overall relationship between family communication patterns and guidance behaviors was less significant than the relationship between parents' computer and Internet literacy and guidance behaviors. Computer and Internet literacy exerts more influence on nonrestrictive guidance than restrictive guidance. This should be expected, that knowledge of the Internet empowers parents to channel their children's Internet use in an instructive way, rather than just imposing regulations.

Overall, parents' attitudes weren't a crucial factor for shaping their guidance behavior, and it didn't serve as an influential mediate variable as well. Subsequently, indirect effect appeared to be weak in this model. Parents who view the Internet more positively were less likely to implement restrictions on their children. However, parental attitude was not significantly linked to nonrestrictive guidance. Since exercising nonrestrictive guidance needs knowledge and skill, attitude would not be expected to change too much. Only restrictive guidance—a relatively easy guidance method—was sensitive to parental attitudes. Thus parents' attitude, as expected, predicted restrictive guidance behaviors. This was again consistent with previous findings related to television viewing guidance (Van der Voort, Nikken, & Van Lil, 1992).

The model identified three factors which shaped nonrestrictive guidance. In order of

importance, these were (a) computer and Internet literacy, (b) concept-oriented communication and (c) socio-oriented communication.

For restrictive guidance, the predictors in order of importance were (a) computer and Internet literacy, (b) socio-oriented communication, and (c) attitude.

Computer and Internet literacy was therefore the most influential on parental guidance, followed by family communication patterns. Parental attitudes played the least important role.

Conclusion

The findings of this study suggest four conclusions. First, in terms of guiding and controlling their children's Internet use, Hong Kong parents have much room for improvement. Most parents exert restrictions on time use and web sites the children can visit, but it is not known to what extent these restrictions are enforced, or are effective. Restrictive guidance that involves computer and Internet skill was rarely adopted, indirectly reflecting parents' overall lack of Internet knowledge.

A second point of emphasis is that family communication patterns are related to parental guidance behaviors. Socio-oriented communication was positively related to both restrictive and nonrestrictive guidance, and concept-oriented communication was positively related to nonrestrictive guidance. Only socio-oriented communication was negatively related to parental attitudes.

A third finding of this study is that parents' computer and Internet literacy played a critical role in predicting both parental guidance behaviors and parental attitudes toward children's Internet use. Compared to other factors shaping the guidance behavior, this was

the most important criterion.

Finally, it seems parents' negative attitudes toward the Internet resulted in more restrictive behaviors. Conversely, parents' holding positive attitudes about the Internet and its capabilities tended to employ less restrictive guidance.

Therefore, this study has several implications for parents and policy makers. As computer and Internet literacy plays such a pivotal role in parental guidance behaviors, parents need extra skills to empower themselves to meet the new challenge and responsibility. Echoing the findings of Livingstone & Bober (2003) in their study of parents in the UK, this help may come from schools, communities or the Internet Service Providers (ISPs). The Hong Kong government and Hong Kong Internet Service Provider Association (HKISPA) is now working together to implement an Internet content rating system to minimize the impact of unhealthy Internet information on young people and children. Another possibility would be for the ISP to develop and offer an easy-to-use monitoring device for parents.

A balance between children's safety and their privacy is important to maintain a harmonious parent-child relationship. Parental monitoring and restrictions may encourage evasive responses and discourage mutual understanding (Livingstone & Bober, 2003). Too much restrictive guidance can frustrate children and encourage them to engage in the very activities that parents wish for them to avoid. Parents should be educated to employ nonrestrictive guidance strategies that are most effective in protecting their children.

In addition to the significant research findings, there are a number of limitations. First, the use of a convenience sample prohibits generalizability, and care must be taken not to overextend the study findings. Second, the paper and pencil survey reflects only the

perceptions of parents; the views of children were not collected. Third, some variables potentially useful for the study were not included in the current study. For example, the gender of the child has been linked to guidance behaviors regarding television viewing (Gross & Walsh, 1980). Also, Lenhart et al. (2001) noted that parents of girls are more concerned about online victimization than parents of boys. Finally, the parental attitude scale did not contain items related to undesirable effects of children's Internet use on the society.

This study examined parent-child communication and the Internet from the perspective of parental guidance behavior strategies. It is still unknown how this guidance is actually implemented, and it is unknown how children actually respond to these strategies. Also, although the family environment is important for a child's development, the school surroundings and peer relationships are crucial to consider. Therefore, to further understand how children experience the Internet, effects and determinants should be implemented in multiple-contexts, so that a fuller snapshot could be taken of this complex and important process. (5200 words)

TABLE 1 Sample profile (N=354)

Demographic	Number	%
Sex		
Male	115	32.5
Female	234	66.1
<i>Age</i>		
20-29	15	4.2
30-39	106	29.9
40-49	182	51.4
50+	50	14.1
Education		
Primary or below	66	18.6
Secondary	199	56.2
College degree or above	88	24.9
Occupation		
Housewives	119	33.6
Clerical, services and sales	99	28.0
Professionals and sub-professionals	55	15.5
Managerial, executive and administrative	34	9.6
Production and construction	27	7.6
Others (unemployed/retired)	14	4.0
Monthly household income		
\$10,000 or below	69	19.5
\$10,001-30,000	192	54.2
\$30001-50,000	58	15.8
\$ 50,001 or above	33	9.3
No. of Children		
1	104	29.4
2	193	54.5
3 or more	58	13.0

Cells may not add up to total due to missing cases

TABLE 2
Parental Guidance on Children's Internet Use

Items	Seldom/ Extremely Seldom None %	Some times %	Very Often/ Often %	Mean %	S.D. %
Restrictive Guidance				2.3	1.1
I will restrict the time of internet using of my child.	34.2	33.2	32.5	2.9	1.1
I will tell my child what kind of website are not allowed to browse.	49.0	23.6	27.4	2.6	1.2
I will check child's using history and see whether my child download pirate software or files from internet. (e.g. MP3)	74.7	16.8	8.6	1.9	1.0
I will install software to track my child's online behavior.	82.2	10.3	7.5	1.6	1.0
Nonrestrictive Guidance				2.2	1.0
I discuss with my child about the content of Internet.	54.1	32.2	13.7	2.4	1.0
I will teach my child some knowledge and skill on Internet.	58.2	26.4	15.4	2.3	1.1
I co-use internet with my child on weekends.	67.8	23.6	8.6	2.0	1.0
I co-use internet with my child on weekdays.	80.1	15.1	4.8	1.8	0.9

TABLE 3 Bivariate Associations of Demographic Factors of Parents with Parental Guidance

	Gender [@]	Age	Education	Income	Age of Child
Discussing with children	-.30	-.23**	.29**	.09	-.25**
Teaching Internet Skills	-.16**	-.34**	.39**	.22**	-.31**
Restrictions on website	-.00	-.32**	.16**	-.01	-.33**
Restrictions on using time	.05	-.32**	.12*	.09	-.35**
Filter installation	-.07	-.11*	.07	-.07	-.12*
Co-using on weekdays	-.11*	-.23**	.19**	.02	-.27**
Co-using on weekends	-.04	-.26**	.29**	.11*	-.35**
Checking history and downloads	-.04	-.13*	.16**	.01	-.13*
Restrictive guidance	-.02	-.31**	.18**	.00	-.32**
Non-restrictive guidance	-.11*	-.33**	.36**	.13*	-.36**

* p<0.05 level **p<0.01 level.

@ 1=male, 2=female

TABLE 4 Maximum Likelihood Estimates for the Model

		Estimate Beta		
<i>Structural Component</i>		<i>Direct</i>	<i>Indirect</i>	<i>Total Effect</i>
Computer and Internet Literacy	→ Attitude	.11		
Computer and Internet Literacy	→ Restrictive Guidance	.36 ***	-.02	.36 ***
Computer and Internet Literacy	→ Nonrestrictive Guidance	.57 ***		.57 ***
Socio-oriented Communication	→ Attitude	-.37 ***		-.37 ***
Socio-oriented Communication	→ Restrictive Guidance	.23 ***	.07 ***	.30 ***
Socio-oriented Communication	→ Nonrestrictive Guidance	.18 ***	-.01	.18 ***
Concept-oriented Communication	→ Attitude	-.11		
Concept-oriented Communication	→ Nonrestrictive Guidance	.19 ***		.19 ***
Concept-oriented Communication	→ Restrictive Guidance	.11	-.02	
Attitude	→ Nonrestrictive Guidance	.03		
Attitude	→ Restrictive Guidance	-.20 ***		-.20 ***
<i>Correlation</i>				
Socio-oriented communication	<-> Concept-oriented communication	.31 ***		
Residual: Nonrestrictive Guidance	<-> Residual: Restrictive Guidance	.58 ***		

Notes: Estimate are standardized Beta. Residual variables are supposed to correlate with observed variables with the regression weight of 1.

p<.01, *p<.001.

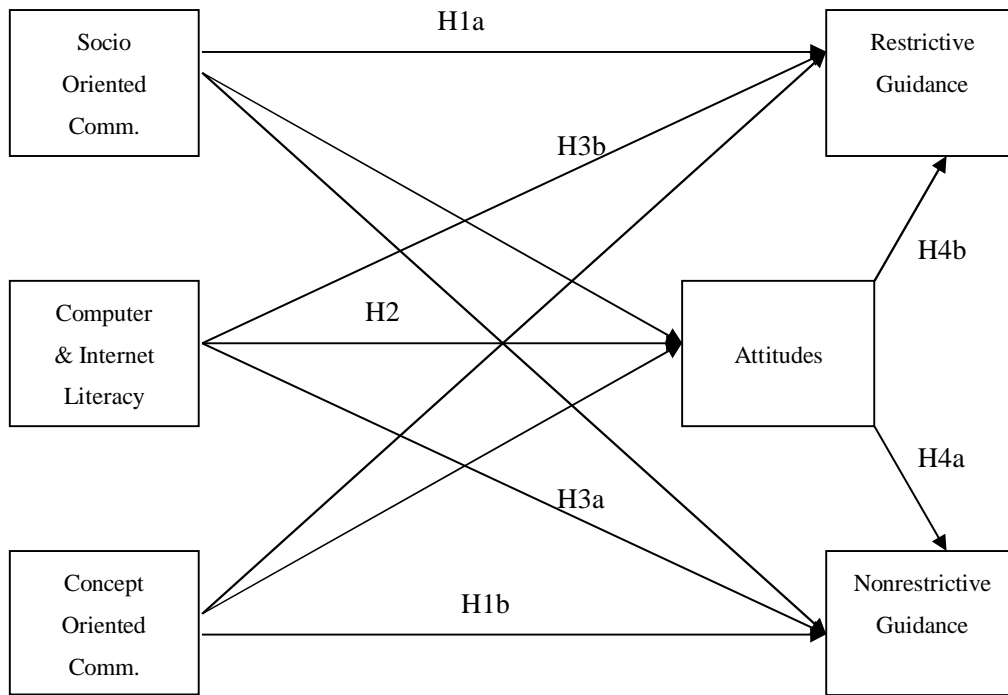


Figure 1 Hypothetical model for parental guidance of children's Internet use

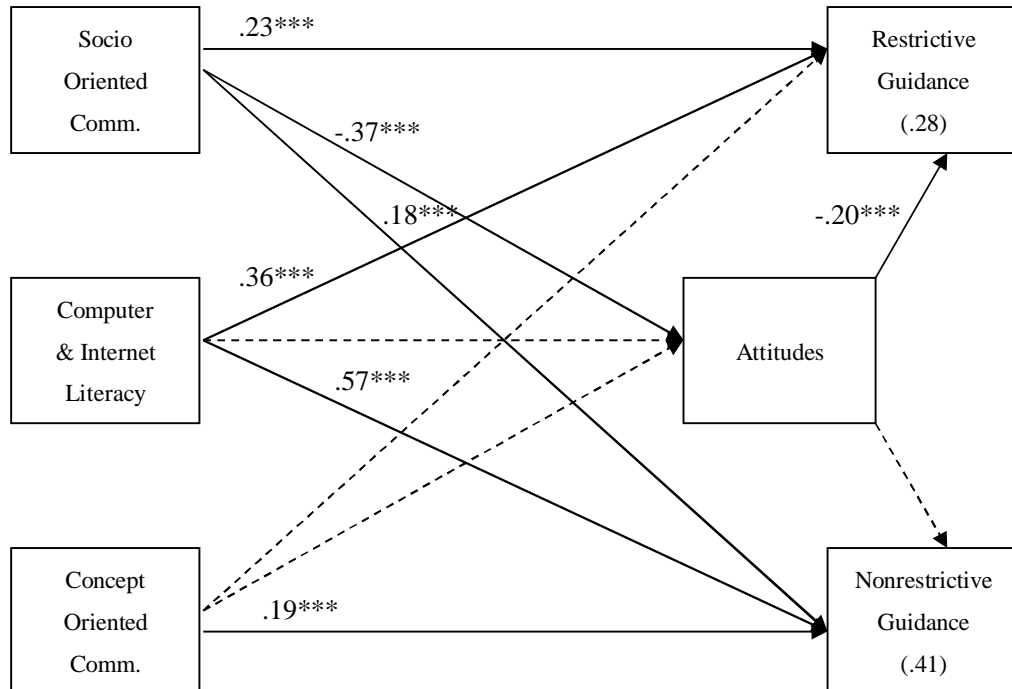


Figure 2 Standardized ML estimates for the structural model

*** $p < .001$ R^2 value are reported in parentheses. $\chi^2=22.7$, $df=2$, $N=354$, NFI= .96, IFI= .97, CFI= .97.

Notes

- 1, Since some families have more than one child, the child's age here referred to the age of the youngest child in a family for they generally receive more parental attention.
- 2, Researchers desire a non-significant χ^2 to demonstrate the specified model is not a null model. However, the χ^2 -distributed test is often problematic. The χ^2 distributed test statistic is based on the statistical properties of T , and T is asymptotic. Therefore, T may not χ^2 distributed with small samples. Moreover when a model lacks multivariate normality, the T may not be χ^2 distributed. Increasing skewness, and particularly differential skewness leads to increasingly inflated χ^2 values (Byrne, 1998).
- 3, All β (Beta) stands for the standardized regression weight.

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