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Comparison of the Internet Literacy of Youths and Their Parents for Evidence-Based Youth Protection

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Abstract: A contemporary problem in societies is that of youths becoming involved in various online troubles. For enhancing Internet literacy, providing support to not only youths but also their parents has become a major policy challenge. This study evaluated and analyzed the Internet literacy of youths and parents to discuss effective policy making, as defined in Article 3 of the supplementary provision of the “Act on Establishment of Enhanced Environment for Youth’s Safe and Secure Internet Use.” The results revealed that parents had significantly higher Internet literacy than youths did, according to the total score and subscores in each risk category. However, for questions related to “online game billing” and “understanding of the ‘Act on Regulation on Soliciting Children by Using Opposite Sex Introducing Service on Internet,’” high school students performed better than their parents did. Therefore, it is crucial to provide support for enhancing parents’ literacy regarding unfamiliar risks.

1. Background

Since 2000, radical development of online environment has brought so many contributions to our societies. These merits have been accepted not only by adults but also by youths. On the other hand, the youths’ internet use brought various risks such as online bullying, online addiction, and contacts with strangers. Social system should protect especially youths because they are vulnerable against these risks.

Aimed to protect youths against these risks, the “Act on Establishment of Enhanced Environment for Youth’s Safe and Secure Internet Use” was enforced in 2009 in Japan. As a basic principle of the Act, Article 3 defines the youths’ “acquisition of skills for the appropriate utilization of the Internet”. It aimed to empower youths so that they can cope with online risks and can handle internet appropriately. For its sake, Article 13 defines roles of government and local authorities to give appropriate supports for

providers of awareness education such as teachers and parents. Also, Article 6 defines parents' roles that they should involve youths' internet use to control it appropriately.

Article 3 of the Act on Establishment of the "Act on Establishment of Enhanced Environment for Youth's Safe and Secure Internet Use" defines the role of the government in terms of conducting reviews: three years after the implementation, appropriate measures will be summarized and undertaken. It aimed to review the development of protection policy for youth constantly and improvement of the policy based on the evidence provided.

It is important to evaluate the development of the youths' online environment to achieve the goal of the Article 3 of the appendix. This study aimed to evaluate the development of the youths' online environment, especially the gap of the coping abilities between youths and parents based on data collected by a nationwide survey. Moreover, it aimed to get insights on the future policy for protecting youth online.

2. Literature Review and the Target Area of This Study

To contextualize this work, international and domestic studies about the protecting youth online are reviewed. Subsequently, the importance of this study will be clarified.

The Organisation for Economic Co-operation and Development (OECD) emphasized the importance of evidence-based policymaking to each country. The OECD Council adopted a "Recommendation on the Protection of Children Online" in February 2012, aimed at establishing the foundation to promote co-regulation by each stakeholder for efficient policy implementation against the identified problems (OECD 2012). In this recommendation, it focused on the need for an evidence-based policy-making approach for managing complex policy through enhanced policy co-ordination. For example, it suggested that enhanced Internet literacy of children and their parents would be a viable solution, to be determined by evaluating actual usage situation.

As a political measure to achieve the evidence-based policymaking approach which was advocated by the OECD Council, Saito (2015) reported development of an Internet Literacy Assessment Indicator for Students (ILAS) and its survey results. This report found the regional disparity in the ILAS test score and it recommended providing appropriate awareness education according to the literacy level.

Livingstone, et. al. (2012) conducted a quantitative study on youths in 25 European countries. The survey investigated key online risks which youths may encounter: pornography, bullying, receiving sexual messages, contact with people not known face to face, offline meetings with online contacts, potentially harmful user-generated

content and personal data misuse. The findings had political implications for multiple stakeholders such as awareness-raising for parents, industry efforts to provide reports as well as improvement of internet safety. Also, importance of skill training for children to develop their digital citizenship was emphasized.

Byron (2008) conducted an evidence-based policymaking study from the psychological view-point. From the results of qualitative research on youths, it produced detailed policy proposals aimed at clarifying the different roles of the government and private sector. Following Byron's review, the Office of Communications released "Ofcom's Response to the Byron Review" in March 2008, which high-lighted the need to enhance the media literacy of children and their parents as well as implement self-regulation by industry groups. In addition, this report identified the regulation of content delivery and user access regulation as crucial methods for industry groups' self-regulation (Office of Communications 2008).

Saito and Aragaki (2011) analyzed the relationship between educational experience with information literacy and filtering use, based on data collected by the Cabinet Office. The results suggested no relationship between educational experience and filtering use according to increasing their grade. Moreover, the limitation of knowledge-based education methods was mentioned as one of the reasons for the dysfunction of awareness education. To solve this problem, the possibility of adopting collaborative learning methods based on social constructivism was also mentioned.

On the other hand, Jansen and Nutt (2015) pointed out the similarity between the behaviors of youths who depend too much on Internet use and those of patients with drug addiction, based on the brain science. In addition, they claimed that parents must play an appropriate role at home to monitor Internet use and prevent its excess.

Given Jansen and Nutt's suggestion, it is imperative that parents acquire the knowledge and skills necessary to guide their children effectively through appropriate Internet use. Saito and Aragaki (2012) focused on the political challenges of awareness education in supporting parents. They mentioned that providing nonformal education to parents as a national policy is crucial because parents have limited systematic educational opportunities, despite their crucial role in protecting youths online. Moreover, Saito et al. (2014) classified awareness education in Japan into formal education, which is provided by schools, and nonformal education, which is provided by industries. They advocated providing more opportunities to parents by offering them nonformal education.

As mentioned by Saito and Aragaki, empowering parents is essential for effective youth protection, and providing support to parents necessitates identifying their abilities

to cope with Internet risks. This study evaluated and compared the Internet literacy of youths and parents to discuss effective policy making for youth protection and support for parents, based on the evidence.

3. Study Concept

3.1. Indicator for Assessing the Internet Literacy of Youths and Parents

To discuss effectively the protection of youths online, it is essential to evaluate and analyze the ability of youths and parents to use the Internet appropriately. The research group of this study collaborated with the Japan Internet Safety Promotion Association to develop the Internet Literacy Assessment Indicator for Students (ILAS JISPA) in 2014, for evaluating the Internet literacy of both youths and their parents. In this study, by analyzing the nationwide ILAS JISPA data, the Internet literacy of youths and parents was evaluated to discuss future policy making for providing support to parents.

The original Internet Literacy Assessment Indicator for Students (ILAS) was developed by the Ministry of Internal Affairs and Communications in 2012, for evaluating the Internet literacy of 15-year-old youths⁽¹⁾. For comparing the Internet literacy of youths and parents, the ILAS was modified into the ILAS JISPA, which contains a systematically edited knowledge test for evaluating the skills necessary for coping with various risks, based on the Internet literacy risk categorization list developed by the Ministry.

Table 1: The Internet literacy risk categorization list

Major category	Medium category	Sub-category
<i>I. Illegal and harmful Information risks</i>	<i>A. Illegal information</i>	<i>1. Copyrights, portrait rights, criminal threats, dating sites, etc.</i>
	<i>B. Harmful information</i>	<i>1. Content offensive to public order and morality, adult-only content, etc.</i>
<i>II. Inappropriate usage risks</i>	<i>A. Inappropriate contact</i>	<i>1. Libel</i>
		<i>2. Anonymous social networking site (SNS)</i>
		<i>3. Non-anonymous SNS</i>
		<i>4. Spam</i>
		<i>5. Applications</i>
	<i>B. Improper transactions</i>	<i>1. Fraud, sale of improper products, etc.</i>
<i>C. Inappropriate usage</i>	<i>1. Excess Internet consumption</i>	
	<i>2. Dependence</i>	
<i>III. Privacy and security risks</i>	<i>A. Privacy risks</i>	<i>1. Leakage of private and/or personal information, inappropriate disclosure</i>
	<i>B. Security risks</i>	<i>1. Impersonation through unauthorised access, etc.</i>
		<i>2. Viruses</i>

Source: Japan Internet Safety Promotion Association (2015)

Online literacy is systematically collected by ILAS JISPA version. ILAS JISPA version defines 3 online abilities as follows: The ability to cope appropriately with illegal and harmful contents on the Internet, the ability to communicate appropriately on the Internet, and the ability to protect privacy and security on the Internet. Online risks are classified into major 3 categories: I. Illegal and harmful Information risks, II. Inappropriate usage risks, and III. Privacy and security risks. In addition, 7 medium categories and 13 sub-categories are defined (see table 1). The indicator contains 21 questions to evaluate the level of online literacy (see table 2) (Japan Internet Safety Promotion Association, 2014).

Table 2: Sample questions

category	sample questions
1a	<p>I posted my favorite singer's lyrics on my personal page of the SNS. Which of the following describes best on this action?</p> <p><input type="checkbox"/> 1. If it was a part of the lyrics, no problem at all.</p> <p><input type="checkbox"/> 2. It's illegal to post lyrics without permission regardless how much I love the singer.</p> <p><input type="checkbox"/> 3. No problem, because I released it only for my friends.</p> <p><input type="checkbox"/> 4. I don't understand words/contents of the question.</p>
1b	<p>Which of the following describes best when minors play portable game?</p> <p><input type="checkbox"/> 1. There is no concern about compromising your personal information when you use a portable gaming console.</p> <p><input type="checkbox"/> 2. You should use filtering when you connect to internet with your portable gaming console.</p> <p><input type="checkbox"/> 3. It's safe because the online network of portable game is designed for children.</p> <p><input type="checkbox"/> 4. I don't understand words/contents of the question.</p>
2a	<p>Which of the following describes best on online bullying?</p> <p><input type="checkbox"/> 1. It can be a crime even though the bullying occurred online.</p> <p><input type="checkbox"/> 2. You can make a snide remark about someone because nobody can detect your name when you hide your name online.</p> <p><input type="checkbox"/> 3. There is no possibility that you bully someone online without your intention.</p> <p><input type="checkbox"/> 4. I don't understand words/contents of the question.</p>
2b	<p>When you were using a smartphone, you clicked a link by mistake. Then it showed "This is a paid site. Please pay 5,000 yen as soon as possible". Which of the following is the best solution?</p> <p><input type="checkbox"/> 1. Mailing to the showed address that you won't pay for it.</p>

	<input type="checkbox"/> 2. Paying for that to avoid collecting. <input type="checkbox"/> 3. You can ignore it. You can discuss about it with your family to ease your anxiety. <input type="checkbox"/> 4. I don't understand words/contents of the question.
2c	<p>Some games can be connected to internet to play with someone online. Which of the following is the best way when you play the online game?</p> <input type="checkbox"/> 1. You can trust the online gaming buddy because the person is your genuine friend. <input type="checkbox"/> 2. You shouldn't get out from the game for taking meals because it is rude for gaming buddy. <input type="checkbox"/> 3. When you play online games, you should decide when to quit it beforehand. <input type="checkbox"/> 4. I don't understand words/contents of the question.
3a	<p>I want to introduce my 3 friends by posting their picture on my blog. Which of the following is the best solution?</p> <input type="checkbox"/> 1. I don't need my friends' permission if the picture was taken by myself. <input type="checkbox"/> 2. I should get permission from all of them. <input type="checkbox"/> 3. I don't need my friend's permission if the picture shows their side face. <input type="checkbox"/> 4. I don't understand words/contents of the question.
3b	<p>Using smartphone by walking/ riding a bicycle may be very dangerous. Which of the following describes best to avoid accident?</p> <input type="checkbox"/> 1. Avoid busy street when you use smartphone by walking. <input type="checkbox"/> 2. Avoid controlling it, and you can just watching the display by walking. <input type="checkbox"/> 3. You can be charged when you use smartphone by riding a bicycle. <input type="checkbox"/> 4. I don't understand words/contents of the question.

3.2. The data which was used for analysis

This study uses the data which was collected from the survey conducted by Japan Internet Safety Promotion Association in 2015. The sample was collected from all over the Japan. Guardian's sample number was 1,327 (valid response 1,261) which were collected from 4 areas in Tohoku district and 2 areas in Kanto district. High school student's sample number was 365 (valid response 350) which were collected from 1 area in Tohoku district, 1 area in Kanto district, and 1 area in Kansai district. Junior high school student's sample number was 601 (valid response 560) which were collected from 1 area in Kanto district, and 1 area in Tokai district. The total number was 2,293 (valid response 2,171) (see table 3).

Table 3: Overview of ILAS JISPA version survey in 2015

Date	Sep. 1, 2015 to Jan. 30, 2016
Research area	Parents: 4 areas in Tohoku district and 2 areas in Kanto district
	High school students: 1 area in Tohoku district, 1 area in Kanto district, and 1 area in Kansai district
	Junior high school students: 1 area in Kanto district, and 1 area in Tokai district
Sample number	Parents: 1,327 (valid response 1,261)
	High school students: 365 (valid response 350)
	Junior high school students: 601 (valid response 560)

Source: Japan Internet Safety Promotion Association (2015)

3.3. Conceptual framework of the analysis

First, to evaluate the gap of online literacy between youths and parents, average score of ILAS JISPA version test was calculated. By analyzing this score, it will give one of the measuring factors to know the gap between youths and parents in online literacy area.

Second, literacy on each risk was evaluated. Risks which youth may encounter during online activities were systematically collected by ILAS JISPA version. To evaluate the ability to cope appropriately with illegal and harmful contents on the internet, ILAS JISPA version defines risks related to “Illegal information (1a)” and “Harmful information (1b)”. Also, to evaluate the ability to communicate appropriately on the internet, risks related to “Inappropriate contact (2a)”, “Improper transactions (2b)”, and “Inappropriate usage (2c)” are defined. In addition, to evaluate the ability to protect privacy and security on the internet, “Privacy risks (3a)” and “Security risks (3b)” are defined (see table 2). By analyzing each literacy on these 7 risks, it will identify which knowledge has been acquired and will allow comparison between students and parents.

4. Analysis on literacy scores

4.1. Comparison on literacy scores between students and parents

① The average percentages which were answered correctly and Kruskal Wallis test results

The average percentages which were answered correctly on total 21 questions of ILAS JISPA version test were calculated on parents, high school students, and junior high school students. The average percentage of parents was highest (90.6%). It was

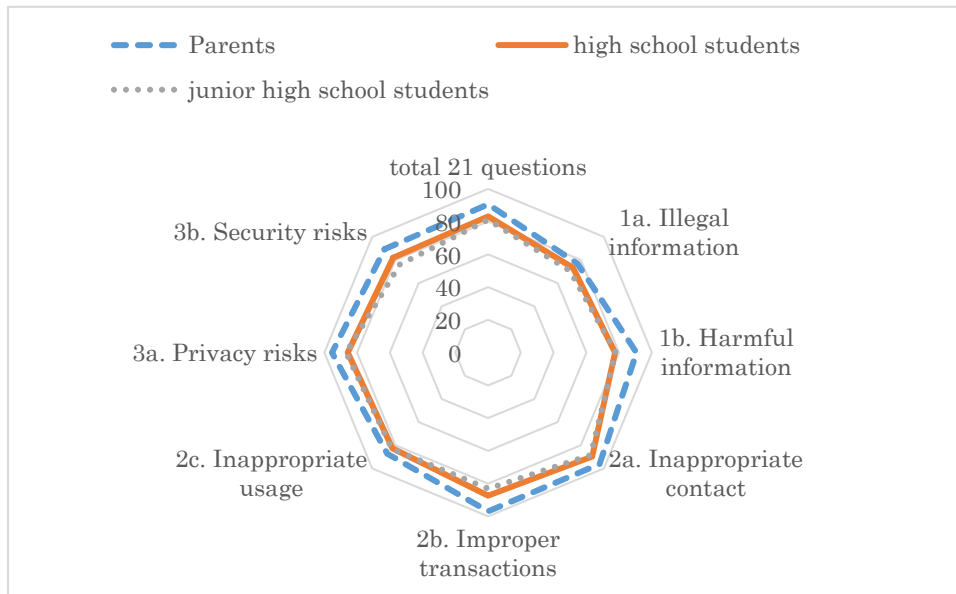
followed by high school student (83.1%), and junior high school students (81.2%). Significant difference was shown between these 3 average percentages by Kruskal Wallis test ($p<0.01$) (see table 3 and figure 1).

Next, the average percentages which were answered correctly on sub-total of each 7 medium categories of ILAS JISPA version test were also calculated on parents, high school students, and junior high school students. The result showed that average percentages of parents' were higher than that of youths in all 7 medium categories (see table 3 and figure 1). On the other hand, the average percentages of junior high school students' were higher than that of high school students in "Harmful information (1b)", "Inappropriate usage (2c)", and "Privacy risks (3a)". Significant difference of average percentages between parents, high school students, and junior high school students were shown in all 7 medium categories by Kruskal Wallis test ($p<0.01$, $p<0.01$, $p<0.01$, $p<0.01$, $p<0.05$, $p<0.01$, $p<0.01$) (see table 4, figure 1).

Table 4: Average percentage which was answered correctly in ILAS JISPA version test

Average percentage	Parents (n=1,261)	High school students (n=350)	Junior high school students (n=560)	P value
total 21 questions	90.6	83.1	81.2	0.01
1a. Illegal information	77.0	73.3	70.7	0.01
1b. Harmful information	90.6	77.5	77.9	0.01
2a. Inappropriate contact	96.2	89.9	88.4	0.01
2b. Improper transactions	96.8	87.3	83.0	0.01
2c. Inappropriate usage	87.2	82.7	83.1	0.05
3a. Privacy risks	95.4	85.7	86.7	0.01
3b. Security risks	89.4	81.9	76.2	0.01

Figure 1: Average percentage which was answered correctly in each category



②Comparison of average percentages of students and parents who answered questions correctly

The aforementioned results showed that the average percentages of parents who answered correctly were significantly higher than those of youths in all seven medium categories. However, a previous study suggested that parents did not have confidence in providing proper guidance to youths at home (Japan Internet Safety Promotion Association, 2015). Therefore, the average percentages of students and parents who answered each question correctly were compared in the present study to identify the literacy areas in which parents have a disadvantage.

The comparison results showed that the average percentages of parents who answered correctly were higher than those of youths for most questions, except for questions 10 and 11. For question 10, “Online game billing and coping strategies,” the average percentages for answering correctly yielded the following ranking: high school students (77.6%), junior high school students (75.7%), and parents (72.8%). For question 11, “Understanding of the ‘Act on Regulation on Soliciting Children by Using Opposite Sex Introducing Service on Internet,’” the ranking was as follows: high school students (72.6%), parents (66.3%), and junior high school students (61.1%) (see Table 5).

The χ square test was then performed on the average percentages of participants who answered questions 10 and 11 correctly. First, the χ square test was performed on the average percentages of parents (72.8%) and high school students (77.6%) who

answered question 10 correctly. The P value was not significant at the 5% level ($p=0.07$), but high school students tended to answer this question correctly more than parents did, at the 10% level. Next, the χ square test was performed on the average percentages of parents (72.8%) and junior high school students (75.7%) who answered question 10 correctly. The result yielded no significant difference ($p=0.20$).

Table 5: Comparison of average percentages of students and parents who answered questions correctly

Question number	Category	Contents	Parents	High school students	Junior high school students
1	2c	Appropriate time to spend on online games	91.50%	79.80%	85.90%
2	1b	Importance of filtering settings	94.80%	86.10%	84.50%
3	1a	Illegal downloads of copyrighted material	89.10%	83.00%	80.60%
4	2a	Understanding of online bullying	96.70%	91.10%	87.40%
5	3a	Understanding of online applications	95.90%	85.30%	85.50%
6	3a	Taking pictures and obtaining permission	98.20%	92.00%	92.30%
7	3b	Smartphone use while walking	94.50%	82.50%	82.30%
8	1b	Message board use that needs ID exchange	89.70%	76.70%	79.40%
9	1a	Understanding of copyrights of lyrics	75.60%	64.00%	70.10%
10	2c	Online game billing and coping strategies	72.80%	77.60%	75.70%
11	1a	Understanding of the “Act on Regulation on Soliciting Children by Using Opposite Sex Introducing Service on Internet”	66.30%	72.60%	61.10%
12	2c	Understanding of Internet addiction	97.30%	90.80%	87.60%
13	2a	Coping strategies for online troubles	94.40%	87.20%	87.60%
14	1b	Understanding of the “Act on Establishment of Enhanced Environment for Youth’s Safe and Secure Internet Use”	87.00%	69.40%	68.50%
15	3a	Coping strategies for message boards	91.80%	79.80%	81.50%
16	2b	Coping strategies for improper transactions	96.80%	89.40%	84.80%
17	2a	Risks of inappropriate posts	97.40%	91.40%	90.20%
18	2b	Understanding of credit card holders	95.80%	82.20%	74.70%
19	3b	Knowledge of security software	79.60%	77.20%	65.70%
20	2b	Coping strategies for fraud	98.00%	89.40%	89.60%
21	3b	Knowledge of Internet viruses	94.10%	86.10%	80.40%

Table 6: Comparison of average percentages of students and parents who answered questions 10 and 11 correctly

		Question 10			Question 11		
		Parents	High school students	Junior high school students	Parents	High school students	Junior high school students
Wrong answer	N	355	81	142	443	99	227
	%	27.2	22.4	24.3	33.7	27.4	38.9
Correct answer	N	952	280	442	870	262	357
	%	72.8	77.6	75.7	66.3	72.6	61.1
Total	N	1307	361	584	1313	361	584
	%	100.	100.	100.	100.	100.	100.
		0	0	0	0	0	0

Second, the χ square test was performed on the average percentages of parents (66.3%) and high school students (72.6%) who answered question 11 correctly. The result showed that high school students answered this question correctly significantly more than parents did ($p=0.02$). Next, the χ square test was performed on the average percentages of parents (66.3%) and junior high school students (61.1%) who answered question 11 correctly. The result showed that parents answered this question correctly significantly more than junior high school students did ($p=0.03$) (see Table 6).

Therefore, parents had attained higher general Internet literacy compared with youths. However, for question 11, “Understanding of the ‘Act on Regulation on Soliciting Children by Using Opposite Sex Introducing Service on Internet,’” they had significantly lower understanding than high school students did; and for question 10, “Online game billing and coping strategies,” they tended to have lower understanding compared with high school students.

4.2. Comparison of opportunities for awareness education between parents and youths

Next, the opportunities for awareness education between parents and youths were compared based on the answers on the questionnaire, which was collected with the ILAS test. Most high school students (73.4%) and junior high school students (65.4%) reported having learning opportunities at school, whereas only 33.2% of parents reported having such opportunities. The result of the χ square test showed a significant difference ($p<0.001$).

Twenty percent of parents reported having learning opportunities at seminars outside of school, whereas high school students (5.2%) and junior high school students (3.7%) reported having limited opportunities. The result of the χ square test revealed a significant difference ($p<0.001$). Approximately 20% of high school students (17.8%) and junior high school students (24.0%) reported having learning opportunities at home, in contrast to only 4.1% of parents. The result of the χ square test yielded a significant difference ($p<0.001$). All parents, high school students, and junior high school students reported having limited learning opportunities at cellphone retail stores (7.0%, 11.0%, and 6.8%, respectively). The result of the χ square test showed a significant difference ($p=0.029$). Furthermore, learning from friends was uncommon among parents, high school students, and junior high school students (15.4%, 10.7%, and 8.5%, respectively). The result of the χ square test revealed a significant difference ($p<0.001$). More than 20% of parents answered that they learned by themselves (23.4%), whereas high school and junior high school students reported having limited opportunities (9.9%, 5.3%). The result of the χ square test yielded a significant difference ($p<0.001$). More than 20% of parents answered that they never had any learning opportunities (22.6%), in contrast to 5.8% of high school and 10.5% of junior high school students. The results of the χ square test showed a significant difference ($p<0.001$).

Table 7 : Comparison of opportunities for awareness education between parents and youths

		Parents	High school students	Junior high school students	P value	
Learned at school	No	N	887	97	208	
		%	66.8%	26.6%	34.6%	
	Yes	N	440	268	393	<0.001
		%	33.2%	73.4%	65.4%	
	Total	N	1327	365	601	
		%	100.0%	100.0%	100.0%	
Learned at seminar outside of school	No	N	1062	346	579	
		%	80.0%	94.8%	96.3%	
	Yes	N	265	19	22	<0.001
		%	20.0%	5.2%	3.7%	
	Total	N	1327	365	601	
		%	100.0%	100.0%	100.0%	

Learned at home	No	N	1234	325	560	0.029
		%	93.0%	89.0%	93.2%	
	Yes	N	93	40	41	
		%	7.0%	11.0%	6.8%	
	Total	N	1327	365	601	
		%	100.0%	100.0%	100.0%	
Learned at cellphone sales store	No	N	1234	325	560	0.029
		%	93.0%	89.0%	93.2%	
	Yes	N	93	40	41	
		%	7.0%	11.0%	6.8%	
	Total	N	1327	365	601	
		%	100.0%	100.0%	100.0%	
Learned by friends	No	N	1122	326	550	<0.001
		%	84.60%	89.30%	91.50%	
	Yes	N	205	39	51	
		%	15.4%	10.7%	8.5%	
	Total	N	1327	365	601	
		%	100.0%	100.0%	100.0%	
Learned by myself	No	N	1017	329	569	<0.001
		%	76.6%	90.1%	94.7%	
	Yes	N	310	36	32	
		%	23.4%	9.9%	5.3%	
	Total	N	1327	365	601	
		%	100.0%	100.0%	100.0%	
Total educational opportunities	More than one	N	1027	344	538	<0.001
		%	77.4%	94.2%	89.5%	
	Never	N	300	21	63	
		%	22.6%	5.8%	10.5%	
	Total	N	1327	365	601	
		%	100.0%	100.0%	100.0%	

The results showed that schools played a primary role in providing learning opportunities to parents and youths, despite a gap between the percentages for experience. In addition, parents had more learning opportunities at seminars outside of

school than youths did. On the other hand, more parents answered that they never had any learning opportunities. Thus, parents must be provided support for giving appropriate guidance to their children.

5. Discussion

This study evaluated the Internet literacy of youths and parents based on data collected by a nationwide survey of the ILAS JISPA to discuss effective policy making for youth protection and support for parents. The results yielded the following ranking of Internet literacy: parents, high school students, and junior high school students, with the overall Internet literacy of parents' being significantly higher than that of youths. In addition, parents showed significantly higher Internet literacy than that of youths in all seven medium categories systematically defined by the ILAS JISPA.

The Japanese policy on awareness education for parents is based on the assumption that parents have lower Internet literacy than that of youths; thus, providing educational opportunities to enhance support for parents has been a primary challenge (Ministry of Internal Affairs and Communications, 2009). However, the present study obtained evidence to overturn the prevailing orthodoxy.

On the other hand, for all questions defined by the ILAS JISPA, this study found that parents showed higher literacy than youths did. Parents tended to have lower understanding compared with high school students for "online game billing and coping strategies." In addition, parents had significantly lower understanding than high school students did for "understanding of the 'Act on Regulation on Soliciting Children by Using Opposite Sex Introducing Service on Internet.'" Thus, parents have higher Internet literacy in general than youths do, despite having limited literacy regarding unfamiliar risks.

Therefore, it will be necessary for parents, who must provide appropriate guidance to their children, to become apprised of emerging troubles caused by the latest applications and acquire the skills necessary to monitor Internet use without their continual attendance. Therefore, in addition to knowledge-based instruction, awareness education for parents must present cases of typical troubles caused by the latest devices and applications, enhance coping strategies, and instill best practices in order to improve the Internet literacy of parents.

However, only 33.2% of parents had learning opportunities at school, a significantly lower percentage than that of youths. Moreover, 22.6% of parents answered that they never had any learning opportunities, a percentage higher than that of youths. The Cabinet Office of the Ministry of Education, Culture, Sports, Science and

Technology reported that 94.8% of high school students and 51.7% of junior high school students have their own smartphones, a reflection of smartphones becoming increasingly common in today's society. Therefore, it will be crucial for the policy on online youth protection to strengthen support for parents so that they can provide appropriate guidance for Internet use at home.

6. Conclusion

This study sought to derive evidence in order to discuss effective policy making for providing support to parents who must monitor Internet use and protect youths against various online troubles. Because Article 3 of the supplementary provision of the “Act on Establishment of Enhanced Environment for Youth's Safe and Secure Internet Use” aims to review continually the development of the protection policy for youths and the improvement of the policy based on evidence provided, the evidence must be made available throughout Japanese society.

This study evaluated the Internet literacy of youths and parents based on data collected by a nationwide survey of the ILAS JISPA, to obtain evidence for effective policy making for youth protection. The results showed that parents had significantly higher Internet literacy than that of youths in all seven risk categories systematically defined by the ILAS JISPA. However, parents had significantly lower understanding of several risks.

The limited understanding of parents was related to the risks that have emerged from smartphone use. Therefore, the challenge of providing support to parents must be overcome to improve understanding of these types of emerging problems. For its sake, providing information on lacked online risks through awareness education, and it will be important to enhance social system which can play enough roles.

For constructing a social system that can provide parents with awareness education universally, a structural approach to designing a school-centered, community-level system will be a key challenge. For example, the Ministry of Internal Affairs and Communications provides awareness education called the “Spring Campaign of Safe Internet Use: New Semester Action,” in collaboration with the Cabinet Office of the Ministry of Education, Culture, Sports, Science and Technology, as well as relevant private organizations. This campaign provides awareness education at the entrance orientation of schools at three levels, and it is politically aimed to provide awareness education universally to parents who have limited opportunities to experience awareness education as formal education (Ministry of Internal Affairs and Communications, 2017). By evaluating development of these kinds of awareness

education for guardians might be contribute for constantly evaluation which was defined by Article 3 of the supplementary provision of the “Act on Establishment of Enhanced Environment for Youth’s Safe and Secure Internet Use”. Further research will be needed on this challenge.

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Note

(1) The ILAS JISPA provides three questionnaires to 1) parents, 2) high school and junior high school students, and 3) elementary school students to evaluate the Internet literacy of parents and youths. Totally same questions are used in literacy test at 1) guardians, 2) high school students and junior high school students. At 3) elementary school students, contents of questions are same, though words were changed easier so that they can understand well with consideration for their reading skills and social experiences. In this study, data for 1) parents and 2) high school and junior high school students were used for comparison, although 3) elementary school students were excluded to ensure the accuracy of analysis.

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