

# The Use of Internet Mapping on Parents of Early Children in Industrial Era 4.0

Rakhmawati, Dini <sup>1\*</sup> Maulia, Desi <sup>2</sup> Dewanto, Febrian Murti<sup>3</sup>

<sup>1,2,3</sup>University of PGRI Semarang, Semarang, Indonesia  
 \*Corresponding author. Email: maulia.desi@gmail.com

## ABSTRACT

Industry 4.0 revolution will have many changes and consequence. In this modern era, information and technology influence all human aspects massively, included parenting patterns. Technology advancement facilitated by internet existence is used by parents to take care of their children, especially early children. Early childhood is age period in which almost all of their potencies grow and develop quickly. In this millennial era, the children are born in the middle of fast digital development. The use of internet for early children influences policies and roles of their parents in utilizing it. Then, the positive and negative impacts will go in line with the parents' roles. Survey done for parents owning 4 – 6 year old children in Semarang took 169 people as the sample all over Semarang. The data analysis used descriptive analysis. The results of internet mapping from parents owning early children showed about 14% of them only used for amusement, 37% to amuse and educate children, 48% to enrich religiosity and characteristic knowledge, and only 1% use it as meant of sexual education for early children.

**Keywords:** *the use of internet, parents of early children, industrial era 4.0*

## 1. INTRODUCTION

Science and technology development rapidly grow. Various inventions to facilitate human mobility every day influence all aspect of human life, including parenting. Almost all individuals, started from children until parents, now have smartphone. It happens not only merely due to consumptive reasons but also about communication and information which become important matters of all society elements, including children. It is strengthened by accessibility to access the internet with various offered features.

Parenting in a family becomes important matter in preparing children to face 4.0 industrial revolution era. Family is core group which is expected to prepare children by guiding, motivating, and supporting them to have intellectual reliability and adaptive attitudes toward the era development.

Childhood is a sensitive period and a period which develops all aspect of child development. It is important because it becomes the basic of further development. Child's ability cannot exist directly, there will be several stages to undergo in which needs stimulus from child's environment to support the development optimally. It is done by good parenting pattern. Stimulus or support can positively influence children and their environment beside optimize each aspect of child development.

Children born in this era have special characteristics. They cannot be separated from gadgets, such as laptop, tablet, smartphone, and other devices to enjoy internet facility as realization of digital technology. By referring to

Livingstone's finding (2003), the use of internet for children was grouped into three dimension: for amusement, educational, and edutainment purposes. They experience joy, amusement, more joyful learning, more challenging playing chance, and other needed information. At the age of 12 – 13 year old, the internet is also used as commercial facility, to sell or purchase products (OVIO, 2008). It can be also used to connect social networking (Brandtzæg&Karahasanovicdalam Valcke et.al. 2011).

A study done in United Kingdome by Holloway, Green and Livingstone (2013), finding out that there were 4% of 1200 respondents showing that under 4 year old children had been able to access the internet. However, it did not meant that the internet users were very little. The limitation toward reading ability and instruction understanding ability in the survey was assumed to be the difficulty of under 8 year old respondents to be taken as the data of this research. However, by referring to previous studies, researchers found that children aged 3 – 4 year old had spent their time browsing the internet to watch video from YouTube. They also spent their time to play online game. In older age, children would use internet to seek information, to complete their homework, and to socialize(Childwise, 2012; Findahl, 2012; Teuwen et al., 2012; Ofcom, 2012; Guðmundsdóttir&Hardersen, 2011; andFindahl, 2012).

Furthermore, in Holloway, Green, and Livingstone finding (2013), they stated that:

*“It has not been established that children under nine years old have the capacity to engage with the internet in a safe and beneficial manner in all circumstances, especially when it comes to this age group socializing online, either within age appropriate virtual worlds or as under-aged participants in sites intended for teenagers and adults (Facebook, You Tube etc.). There is an emerging trend for very young children (toddlers and preschoolers) to use internet connected devices, especially touchscreen tablets and smartphones. This is likely to result in an increasing number of very young children having access to the internet, along with a probable increase in exposure to risks associated with such internet use.”*

It was in line with several findings above, it could be stated that the internet users from children would not always have negative impacts. The use of internet without parents’ controls for early children at toddler age and preschool age will be risky for the users. De Moor et al (2008) showed that internet risk consisted of three things. The first is content risk, consisting of provocative content and wrong information. Then, contact risk which is consisted of risks in doing online contact realized into cyber bullying, sexual solicitation or privacy risk, and offline risk contact. The third is commercial risk, consisting of commercial exploitation. It happens when the data of the users are exploited for certain party’s financial purposes and unwanted collection of personal data. Here are the diagram showing the risks.

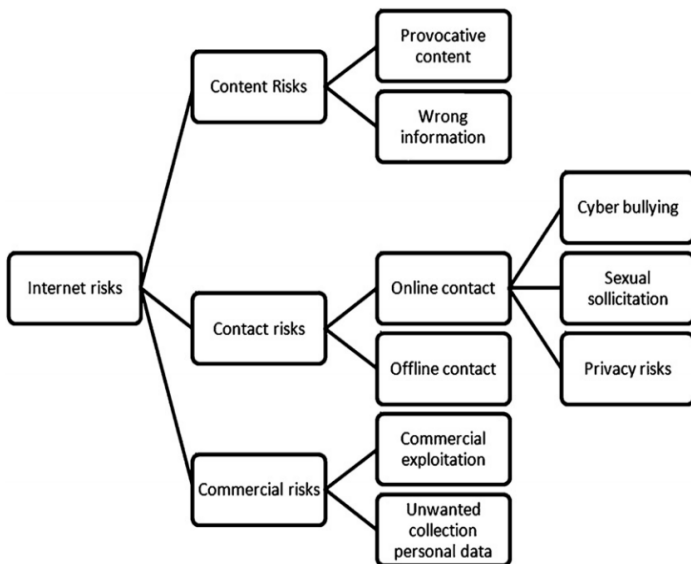


Fig. 1. Overview of Internet risks (based on De Moor et al., 2008).

From De Moor’s review, it is known that child interaction via internet has specific risk. Sustainable interaction would negatively impact children’s behaviors in daily life. They will be depended to use

gadget in their life and it becomes an obligation to do routinely in their daily activities. They will be happier to play gadget rather than having interaction with the environment. It is special concern because childhood is a period with high curiosity. Meanwhile, the received information will not always be good and appropriate for them.

Internet accessibility to get information will make children having difficulties to select which one is friendly for them or it is purposed for adults. This accessibility triggers their curiosities to access adult content. It may lead to unexpected things, such as criminality, amorality, sexual abuse, bullying, and so on.

The use of gadget by children was also reviewed by Livingstone and Haddon (2009) on 14 countries out of 21 in Europe. Their investigation in 2005 found that the numbers of parents who accompanied children to have online access was 66%. This percentage could not keep up with the numbers of children accessing internet in that moment. With another word, there were many children in 2005 accessing internet without parents’ supervision. After that, in 2008, there was a significance increase. There was 85% of parents whom had been active in using internet and accompanying them to access the internet. Parents’ mediations during using internet with their children played important role for the sake of security and awareness issues. Here is the analytic framework from the study by Livingstone and Haddon:

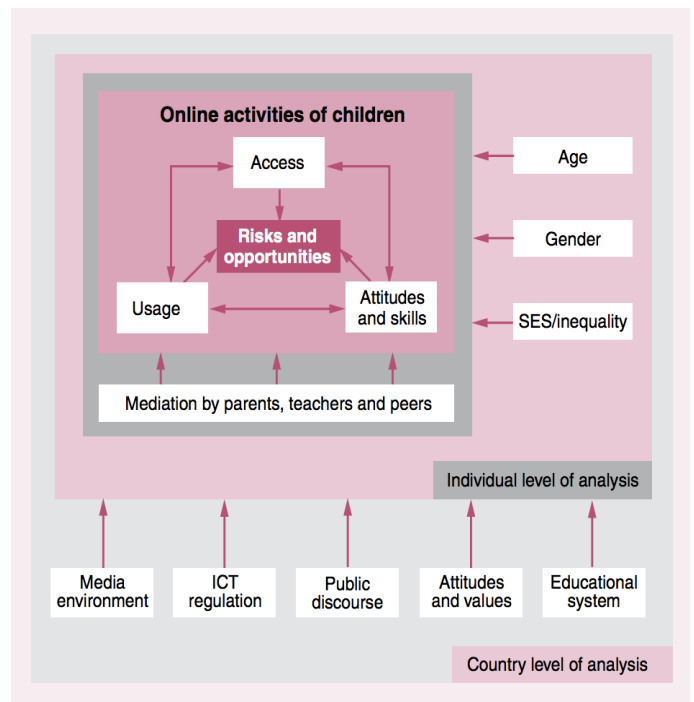


Figure 2 EU Kids Online (based on Livingstone, S., & Haddon., L. 2009).

By reviewing those studies, then, this research would commence initial mapping about the use of internet on parents toward their early children. The findings of this research would provide description about the most accessed matter by children, the interesting show for them, and how parents' mediations in accompanying their children in using the internet.

**2. METHODOLOGY**

This research is a survey. The subjects were parents owning 4 – 6 year old children in Semarang. The sample consisted of 169 people, spread in all Semarang area. The technique of collecting data was closed questionnaire. The data was analyzed descriptively.

Survey research has purpose to provide description in detail about a background, natures, and unique characters of a case or event which has general nature. In this research, data and appropriate information to the problem were needed to make the data and the obtained

information would be sufficient to use as the basic in discussing the problem by using descriptive analysis method. The obtained data was then processed, analyzed, and extensively processed by using the previously studied theory to draw conclusion. Meanwhile, the analysis was done quantitatively by using relevant statistic method.

**3. FINDING AND DISCUSSION**

From the mapping of internet uses of parents whose early children, it was found 14% of them only used it for amusement, 37% for amusement and education, 48% for enriching characteristics knowledge and religiosity, and only 1% for sexual education purposes. Here is the diagram showing the percentage

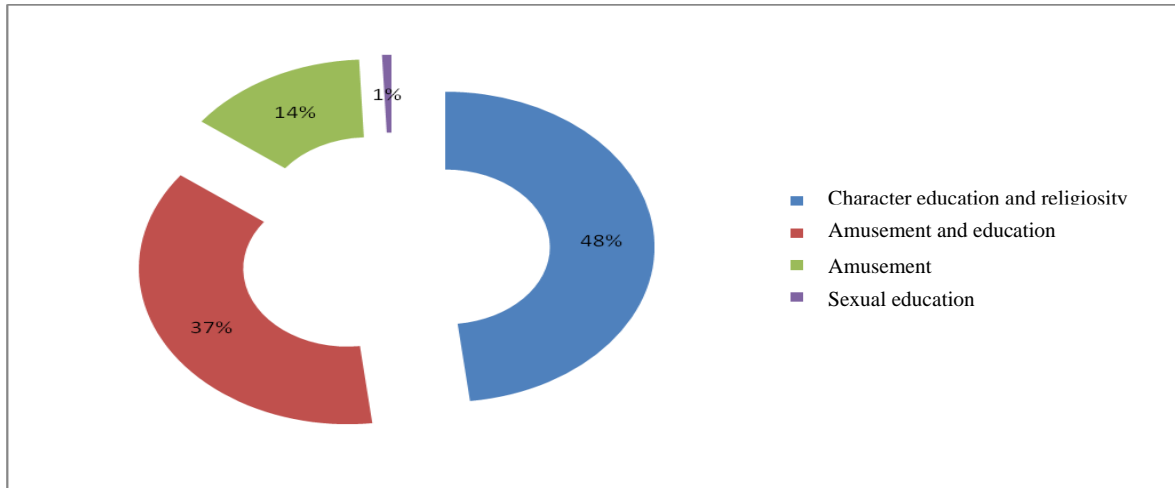


Diagram 3  
Mapping of Internet Uses of Parents whose Early Children

Internet is just like a double edge. It gives positive and negative impacts at the same time. Therefore, it is important to have monitoring of the internet uses, especially for early child users. From the positive side, internet is meaningful for them because it can provide sciences and information from many visited sites without distant and time limitation. It also trains children to send email, to talk or communicate with the others, and to have more friends from other sides of the worlds as well as to improve their learning motivation by using interesting software to make them motivated.

Early child is a period which almost all children's potencies grow and develop quickly. In this millennial era, children are born in the middle of quickly developed digital advancement. Therefore, by its advancement which is facilitated by internet used by their parents in taking care of them since it cannot be separated from their life. The use of internet for children is influenced by policy and role of parents in utilizing it.

Then, the positive and negative influences would be in line with their parents' roles.

The mapping data showed only a few parent realized that internet could be maximized in giving positive impacts to their children's development. It was proven by 51% of them still using it for amusement only, 48% using it for educational characters and religiosity, and only 1% using it for sexual education.

It is in line with Aisyah (in Al-Ayouby, 2017), showing that 80% of children used gadget to play. 23% of the parents whose 0 – 5 year old children acknowledge that their children really liked using internet. Only 82% of them stated that their toddlers were only let online once in a week.

The findings showed that in this era, children have been very familiar to internet. During learning process, *digital native* at early childhood age would be interested to use interactive media which utilized technology development. One of them was about utilizing animation. Video play

and animated movie have been frequently used to transfer knowledge and skill for children. It was proven by improving learning skill and knowledge by activating replaying scene mode of visual action at short memory term and strengthen it (Michel & Roebers, 2008; Hatsidimitris & Kalyuga, 2012; Fleer & Hoban, 2012, Astuti & Mustadi, 2014; Smith et al., 2017). It should be an opportunity for parents to use internet positively to optimize their children's character development. However, there were still parents whom were not aware of such things by giving freedom for their children to use internet without monitoring or only to use it for amusement purposes. It becomes a concern because actually prevention toward such disadvantage matters for children should have involved parents' roles, school, and society. All parties were expected to be more aware in using internet for early children, especially their parents. It was important because parents became the first institution to foster characters of their children and their development. Parents' involvements became the most important aspect in early child education (Diadha, 2015).

#### 4. CONCLUSIONS

Early children are in a period which almost all potencies develop and grow quickly. In this millennial era, children are born and grow in the middle of quickly growing digital development.

The use of internet for early children was influenced by policy and roles of the parents in utilizing it. Then, the positive and negative impacts would be in line with the parents' roles. The findings showed that children in this era have been familiar to internet. It should be an opportunity for parents to use internet positively and to optimize their character development and creation. However, there were still many parents unaware of it by giving the children freedom to use internet without monitoring or only to get amusement. It became a concern because actually prevention of any disadvantageous matter for children should have involved parents, schools, and society.

#### REFERENCES

- [1] AL-Ayouby, M.Hafiz. 2017. Dampak Penggunaan *Gadget* Pada AnakUsia Dini.Universitas Lampung Bandar Lampung. (Skripsi, Tidak Dipublikasikan).
- [2] Astuti, Y.W &Mustadi, A. 2014. "Pengaruh Penggunaan Media Film Animasi Terhadap Ketrampilan Menulis Karangan Narasi Siswa Kelas V SD," *Jurnal Prima Edukasia*, vol. 2, no. 2, pp. 250-261.
- [3] Az Zahra, AfifahChusna.,et.al. 2019. Peran pendidikan keluarga dalam Menghadapi Tantangan Revolusi Industri 4.0. Prosiding Seminar Nasional & Call paper psikologi Pendidikan 2019, Fakultas pendidikan Psikologi, Aula C1, 13 April 2019.
- [4] De Moor, S., Dock, M., Gallez, S., Lenaerts, S., Scholler, C., &Vleugels, C. (2008). Teens and ICT: Risks and opportunities. Retrieved July 6, 2010 from. [http://www.belspo.be/belspo/fedra/TA/synTA08\\_nl.pdf](http://www.belspo.be/belspo/fedra/TA/synTA08_nl.pdf).
- [5] Diadha, Rahminur. 2015. Keterlibatan Orang Tua dalam pendidikan anak usia dini di Taman Kanak-kanak. *Jurnal Edusentris, Jurnal Ilmu Pendidikan dan Pengajaran*, Vol. 2 No.1, Maret 2015.
- [6] Fleer, M. & Hoban, G. 2012. Using 'Slowmation' for intentional teaching in early childhood centres: Possibilities and imaginings. *Australasian Journal of Early Childhood*. Volume 37 Number 3 September 2012.
- [7] Hatsimidris, G. &Kalguya, S. 2013. Guided Self-Management Of Transient Information in Animations Through Pacing And Sequencing Strategies. *Educaton Tech Research Dev*. 61:91-105 DOI
- [8] Holloway, D., Green, L. and Livingstone, S. (2013) *Zero to Eight: Young Children and their Internet Use*, LSE, London and EU Kids Online, pp. 10–13.
- [9] Livingstone, S. (2003). 'Children's use of the Internet: reflections on the emerging research agenda. *New Media & Society*, 5(2), 147–166.
- [10] Livingstone, S. & Hadon, L. (2009). *EU Kids Online: Final report*. LSE, London: EU Kids Online. ISBN 978-0-85328-355-3.
- [11] Michel. E. &Roebers, C.M. 2008. Children's Knowledge Acquisition Through Film: Influence of Programme Characteristics. *APPLIED COGNITIVE PSYCHOLOGY Appl. Cognit. Psychol.* 22: 1228–1244. Published online 21 January 2008 in Wiley InterScience ([www.interscience.wiley.com](http://www.interscience.wiley.com)) DOI: 10.1002/acp.143
- [12] OIVO. (2008). *Jongerenen Internet*. Brussels: OIVO. [Youngsters and the Internet]. Available online via. <http://www.oivo-crioc.org/files/nl/3906nl.pdf>
- [13] Smith, S. et al. 2017. Using Culturally Appropriate Approaches to the Development of KidsMatter Resources to Support the Social and Emotional Wellbeing of Aboriginal Children. *Australian Psychologist*. 52 (2017) 299–305 . doi:10.1111/ap.12284.
- [14] Velcke, M., De Wever, B., Van Keer, H., &Schellens, T. 2011. Long-Term Study of Safe Internet Use Of Young Children. *Computers & Education*. 57(1), August 2011, Pages 1292-1305. doi:10.1016/j.compedu.2011.01.010