Readiness of Parents in Utilizing Information and Communication Technology (ICT) in Children's Learning during the Covid-19 Pandemic

Gunarti Dwi Lestari, Wiwin Yulianingsih, Widodo, Monica Widyaswari*

Universitas Negeri Surabaya, Indonesia
*Email: irosmlawati@untirta.ac.id


Abstract. This study aims to determine parents' readiness to use ICT in children's learning during the Covid-19 pandemic. This study used quantitative research. The population in this study amounted to 571 respondents, while the sample in this study obtained many 230 respondents with research subjects, namely parents who have school-age children (students from PAUD/SD/SMP/SMA levels and currently implementing online learning). The sampling technique used is the purposive sampling technique. The data analysis technique in this study used descriptive statistical techniques. The study's overall results show that the readiness of parents in the use of ICT in children's learning during the Covid-19 pandemic shows good results with a percentage of 76.09%. These results are supported by the suitability of the results for each sub-variable, namely the sub-variables of parental readiness and ICT use in online learning. In this case, it can be interpreted that an educator must have readiness and understanding of the online learning system, but parents must also understand and master the technical implementation of online learning.

Key words: readiness of parents, use of ICT, children's learning, the Covid-19 pandemic


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INTRODUCTION

Lately, the world is being shocked by cases that threaten human health in the form of a deadly disease, namely Covid-19 caused by the Coronavirus or Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). This epidemic originated in Wuhan (China), which slowly spread throughout the world, including Indonesia. The peak of the spread of Covid-19 in Indonesia occurred around the middle of March 2020. The spread of Covid-19 forced the government to move quickly to break the chain of the spread of this disease. The government has made several policies to contain the spread of Covid-19 from activity restrictions, appeals always to maintain personal hygiene, social distancing, physical distancing, regional quarantine, working at home for employees, distance learning for students, limiting human mobility from region to region, and promoting vaccinations for the entire family community (Afrianty, Artatanaya, & Burgess, 2021; Olivia, Gibson, & Nasrudin, 2020; Vellingiri et al., 2020).

Concerning the world of education, there has been a change in learning during the Covid-19 Pandemic. Based on data from the United Nations Educational, Scientific and Cultural Organization (UNESCO), the number of countries that implement learning from home reaches 162 countries (Abidah, Hidaayatullaah, Simamora, Fehabutar, & Mutakinati, 2020). Until now, in October 2021, the development of Covid-19 in Indonesia, there were 4.22 million confirmed cases of Covid-19 positive (COVID-19, 2021). Seeing this large number, Indonesia has become one of the countries with the highest Covid-19 cases. The government has intensified programs and policies so that the spread of the Coronavirus can be controlled. One of the government policies is the implementation of learning from home program (Churiyah, Sholikhan, Filianti, & Sakdiyyah, 2020; Putri et al., 2020; Rahiem, 2020).

Learning from home is a policy so that all students learn from home or online/remotely. This policy applies to all formal education units from PAUD to Higher Education and non-formal education units. Learning from home during the Covid-19 period was held online to reach a massive and broad target group so that it could be held anywhere and attended for free or paid. Online learning is one of the challenges and new habits that must be carried out by educators, parents, and students in learning. Online learning is a demand for parents and educators to be able to cooperate in providing the best learning and mentoring for educating children (Appolloni, Colasanti, Fantauzzi, Fiorani, & Frondizi, 2021;

Ki Hajar Dewantara stated that family education places a perfect nature and manifestation than other centers to advance towards intelligence character education (the formation of individual character) and make provisions for social life (Dewantara, 1961). The atmosphere of family life is the best place for personal education (individual education) and social education. In this case, it can be interpreted that the family or parents are the perfect places to realize the function of education in forming a person's self, cognitive development, and neurocognitive development of children (Noble et al., 2015).

Parents have the most intense encounters with children, so parental assistance is needed as coordination between teachers and parents when children learn from home. Parents should teach their children how to solve their problems. Some characteristics of online learning include constructivism, social constructivism, the community of learners, virtual classes, and behavior interactivity, independence, accessibility, and enrichment (Becker & Epstein, 1982).

The impact of the Covid-19 pandemic requires parents to have a significant role in the child's growth and development process, one of which is in the child's learning process. Most parents consider their involvement in children's education only limited to covering costs, providing infrastructure, and other material needs. In the context of education, parental involvement must cover a broader scope than funding alone. Parental involvement is an alternative that can be used to increase collaboration between educators and parents during the Covid-19 pandemic (Bokayev, Torebekova, Davletbayeva, & Zhakypova, 2021; Lase, Zega, & Daeli, 2021; Sari & Maningtyas, 2020).

Parents as substitute educators while studying at home. Of course, parents need to provide special assistance to children, teach, and consistently monitor so that learning at home takes place optimally. For parents who work, it will be an arduous task because they have to divide their time between work in the office and accompanying their children to study. Parents have the most intense encounters with children, so parental assistance is needed by children when learning from home to help study, practice, or do school assignments. To solve problems in children, parents should teach children how to deal with problems in their world (Yulianingsih, Suhanadji, Nugroho, & Mustakim, 2020).

The implementation of learning from home is closely related to information and communication technology (ICT). ICT include two inseparable aspects, namely information technology and communication technology. Information technology includes everything related to the process, use as a tool, manipulation, and information management. While communication technology is related to the use of tools to process and transfer data from one device to another (Setuju, Ratnawati, Wijayanti, Widodo, & Setiadi, 2020).

The rapid development of science and technology has caused everyone to quickly and easily from various sources from various parts of the world. Along with the advancement of ICT, the Center for Information and Communication Technology for Education and Culture-Ministry of Education and Culture has developed various programs in the field of using ICT for the benefit of education/learning.

Information technology is a solution to the implementation of distance learning. Therefore, in this case, it can be interpreted that an educator must have the readiness and understanding of the online learning system, but parents must also understand and master the technical implementation of online learning. With the hope that it can provide effective learning and does not reduce the essence of learning even from home, and can accompany children's learning well (Azhari & Fajri, 2021; Lau & Lee, 2021; Markova, Glazkova, & Zaborova, 2017).

Hung et al. (2010), several dimensions become the concept of online learning readiness, including self-directed learning (SDL), motivation for learning, learner control, computer and internet self-efficacy, online communication self-efficacy (Hung, Chou, Chen, & Own, 2010). The readiness of parents to use ICT to assist children in online learning must include five aspects that become indicators, including (a) being able to manage to learn; (b) can accompany children during the learning process; (c) the child's response; (d) mentoring activities carried out by parents for children with ICT; and (e) children's learning outcomes (Hamzah & Nurdin, 2011).

Based on the description above, the researcher wants to know parents' readiness in using ICT to accompany their children while learning from home. The purpose of this study was to describe parents' readiness in the use of ICT in children's learning during the Covid-19 pandemic.

**METHODS**

This study used a quantitative approach with descriptive statistical data analysis techniques. Descriptive research intends to describe in a structured manner related to the existing reality of a particular population, provide answers to a problem, and obtain in-
depth information related to the phenomenon by using a quantitative approach research method (Yusuf, 2016). In this study, it describes the readiness of parents in the use of ICT in children's learning during the Covid-19 pandemic. The following is the flow of this research:

**Figure 1. Research Flow**

There are two sources of data in this study, namely primary data and secondary data. Primary data is obtained from the distribution of questionnaires to respondents through the Google Form platform, and secondary data is in the form of sociodemographic data that includes the identities of students and parents. The research population is the parents of the students (PAUD/SD/SMP/SMA), totaling 571 people.

Sampling in this study using non-probability sampling with purposive sampling technique. Purposive sampling is a sampling technique with specific considerations. Considerations for the sample in this research are respondents with the following criteria: (a) parents who have school-age children; (b) school-age children at the PAUD/SD/SMP/SMA level; and (c) children as students who are carrying out online learning.

For this study, the sample was taken based on the Slovin formula as follows.

\[
n = \frac{N \times e^2}{1 + (N \times e^2)}
\]

**Description:**

- \(n\) : number of sample members
- \(N\) : number of population members
- \(e\) : error level

\[
n = \frac{571 \times (0.05)^2}{1 + 571 (0.05)^2}
\]

Thus obtained as many as 231 respondents as a sample.

This research instrument uses a Likert scale to get accurate data results because the answer choices on each item have a value level from very positive to very negative or vice versa. Likert scale to measure the opinions, perceptions, and attitudes of a person or group of people about social phenomena (Sudaryono, 2014). In this study, there were four answer choices, namely: Always (SL) was given a score of 4, Often (SR) was given a score of 3, Rarely (JR) was given a score of 2, and Never (TP) was given a score of 1.

This study uses a closed questionnaire in which answer choices have been provided so that respondents put a checklist on the answer choices that are already available in the questionnaire via the Google Form platform. As a poll of respondents related to the situation being studied.

This research instrument was developed from indicators on the sub-variables of parental readiness, including parents as educators, facilitators, motivators, mentors, and protectors for children during learning (Fitroturrohmah & Azizah, 2019). Meanwhile, the sub-variables of using ICT in online learning include: (a) learning management; (b) the learning process; (c) the child's response; (d) mentoring activities carried out by parents for children with ICT; and (e) children's learning outcomes (Hamzah & Nurdin, 2011).

The analysis used is descriptive statics using SPSS 22.0. This is used to examine the variables in the research, namely the readiness of parents in the use of ICT in children's learning during the Covid-19 period. Respondents' answers were analyzed using the following percentage formula:

\[
P = \frac{f}{N} \times 100\%
\]

**Description:**

- \(f\) : frequency (respondent's answer)
- \(N\) : total number of respondents
- \(P\) : percentage figures

Then it is analyzed using the percentage formula above using the percentage category benchmark as follows.

**Table 1. Parental Readiness Criteria for Utilizing ICT in Children's Learning in the Covid-19 Period**

<table>
<thead>
<tr>
<th>No.</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>86-100%</td>
<td>Excellent</td>
</tr>
<tr>
<td>2.</td>
<td>76-85%</td>
<td>Good</td>
</tr>
<tr>
<td>3.</td>
<td>60-75%</td>
<td>Average</td>
</tr>
<tr>
<td>4.</td>
<td>55-59%</td>
<td>Fair</td>
</tr>
<tr>
<td>5.</td>
<td>&lt; 54%</td>
<td>Poor</td>
</tr>
</tbody>
</table>

Source: Purwanto (2006)

**RESULTS AND DISCUSSION**

Parents' readiness in the use of ICT in children's learning during the Covid-19 period was included in the good category with a percentage result of 76.09%. This is supported by the relationship between the results of each sub-variable is used as an indicator as follows:
Parents' Readiness

Based on the research results on the sub-variable of parental readiness, it is included in the average category with 70.28%. The following is the calculation table for this sub variable.

Table 2. Percentage of Answers to Parents’ Readiness Sub Variables

<table>
<thead>
<tr>
<th>No.</th>
<th>Answer Options</th>
<th>f</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Never</td>
<td>571</td>
<td>14.60%</td>
</tr>
<tr>
<td>2.</td>
<td>Rarely</td>
<td>910</td>
<td>23.27%</td>
</tr>
<tr>
<td>3.</td>
<td>Often</td>
<td>1,115</td>
<td>28.52%</td>
</tr>
<tr>
<td>4.</td>
<td>Always</td>
<td>1,314</td>
<td>33.61%</td>
</tr>
</tbody>
</table>

Total 3,910 100%

Based on table 2, most parents choose "always" with a percentage of 33.61%. In this case, it can be concluded that parents prefer to always choose in the readiness sub-variable. Thus, judging by the number of parents who choose, it can always be said that parental readiness is indispensable in supporting children's learning activities during the Covid-19 pandemic, especially by utilizing ICT.

Almost all sectors of life have been affected by this Covid-19. On the other hand, humans must adapt amid difficult situations like today, and education is no exception. The Covid-19 pandemic has changed the pattern of learning that is usually done face-to-face, has now turned into distance learning activities (Bonal & González, 2020; Sungkono, 2021).

Parents are one of the components of success in the online learning process during the Covid-19 pandemic. Because Covid-19 has changed the patterns of the learning process both in formal and non-formal education units (Muchtar, Dewi, Hidayah, Yanuarsari, & Saleh, 2021; Souto-Otero, 2021).

Online learning is learning that utilizes the internet network in the learning process. This online learning is a manifestation of the development of existing ICT. Online learning is distance learning between educators and students who use electronic media in the form of technology, information, and communication (Daniel, 2020; Yakubu & Dasuki, 2018).

Online learning allows students to connect with educators or a learning forum. This change in learning patterns indeed cannot be directly accepted by both educators and students. There needs to be an adjustment in preparing for the online learning process. One of them is readiness for the use of ICT.

In the process, this is done by educators or students and need support from parents. In the implementation of online learning, what is needed is the support of a set of technology and internet networks, but more than that, the readiness of educators, students, and parents is an essential part of the online learning process (Arifa, 2020).

The readiness of parents cannot be separated from the role of parents for their children. Parents act as substitute educators in the online learning process while at home. Thus, the online learning process is expected to be able to accommodate the learning needs of students as a place to develop their potential (Nuridin & Anhusadar, 2020).

In addition to parents as educators and facilitators, parents also have a role as a motivator or motivator. This means that parents play a role in encouraging children to learn, even in difficult times such as the Covid-19 pandemic. Online learning makes students only deal with smartphone and laptop screens. Such conditions can potentially make children bored more quickly. Therefore, parents are expected to be able to motivate or encourage the spirit of their children.

Utilization of ICT in Online Learning

Based on the research results on the sub-variable of the use of ICT in online learning, it is included in a good category with a percentage of 81.90%.

Table 3. Percentage of Answers to Sub-Variable of ICT Utilization in Online Learning

<table>
<thead>
<tr>
<th>No.</th>
<th>Answer Options</th>
<th>f</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Never</td>
<td>29</td>
<td>3.15%</td>
</tr>
<tr>
<td>2.</td>
<td>Rarely</td>
<td>127</td>
<td>13.80%</td>
</tr>
<tr>
<td>3.</td>
<td>Often</td>
<td>322</td>
<td>35.00%</td>
</tr>
<tr>
<td>4.</td>
<td>Always</td>
<td>442</td>
<td>48.05%</td>
</tr>
</tbody>
</table>

Total 920 100%

Based on table 3, most parents choose "always" with a percentage of 44.05%. In this case, it can be concluded that the use of ICT in online learning is more always chosen in the sub-variable. Thus, judging by the number of parents who choose, it can always be said that the use of ICT for online learning is indispensable in supporting children's learning activities during the Covid-19 pandemic.

During the Covid-19 pandemic, parental assistance is needed for children in carrying out online learning. In this regard, parents are required to utilize information and communication technology. The utilization of ICT is considered a learning resource to increase self-capacity as a parent who can assist both the development of their children cognitively, affectively, or psychometrically in children. These ways are a form of parents to give the best in the learning process at home (An & Carr, 2017; Daniel, 2020).
During the Covid-19 pandemic, limitations were felt in many ways, including restrictions on school system meetings which required schooling to be conducted online. Alternative online learning that provides convenience in distance learning, such as school TV, zoom, slack, google meet, and the edupage platform.

In online learning, parents are also positioned as facilitators. This can be interpreted that in the online learning process, parents act as mentors, bridges between educators and children, and providers of supporting facilities needed by children. The provision of facilities provided by parents in the form of devices such as smartphones and laptops are primary needs for children during learning. The device is a means to access information during limited space for movement due to the outbreak of the Covid-19 virus.

In addition to smartphones and laptops, an internet connection is currently necessary for children, even the wider community. It is easier for someone to communicate with other parties without being limited by distance, space, and time with an internet connection. Therefore, currently, internet connection has become a primary need. The internet is a sign of advances in information technology. With an internet connection, parents can easily communicate with teachers as well as students (Kuusimaki, Uusitalo-Malmivaara, & Tirri, 2019; Markley, Lyons, & Macke, 2015).

In general, the readiness of parents, especially in using ICT to support children in online learning, can increase children's learning motivation. Parental readiness is referred to as an effort made by parents to increase the growth and development of children. The function of parental readiness helps provide a value for psychological satisfaction in children so that children are happier to learn, do not experience boredom, and minimize learning disorders that can arise in the future. The higher the readiness of parents to use ICT in their children's learning, the better the learning outcomes they will achieve, and conversely, the less assistance the parents receive, the less good the learning outcomes will be. (Ferri, Grifoni, & Guzzo, 2020).

This study stated that parental readiness was also marked by helping children do their work, as a place for children to learn, explaining and providing explanations about the material being implemented, giving a good response to learning from school. The readiness of parents can shape the character of children who can do the tasks that have been ordered from school, practice learning at home, and are responsive in creating works as the implementation of learning. This is by the explanation that mentoring children in the family are realized through parenting tips in educating children to become better individuals in terms of growth and development (Dong, Cao, & Li, 2020).

The forms of parental readiness to use ICT in this study are in line with the theory above, including child learning assistance, setting a children's study schedule, the duration needed to assist children in learning, environmental support and online learning facilities, parent and child communication, media and learning resources used, to documenting children's learning activities.

Many parents helped and motivated their children while studying from home due to the government's appeal regarding Covid-19. This is also what makes not a few parents deliberately take the time to help their children's learning process while at home. Many parents agree that during learning at home, parents also help do the assignments given by the teacher. Although not a few feel that this is an additional activity for parents besides doing household chores.

In this case, assisting children to learn from home is a challenge. On the other hand, many parents consider that home learning can strengthen their relationship with their children. Parents feel that through learning at home, they can see the development of children in learning. In this case, it can be seen that parents have a considerable role during learning activities at home.

Belay (2020) mentions that the readiness of parents to use ICT for learning from home is also determined by several factors such as education, occupation, and income of parents. Irma, Nisa, & Sururiyah, (2019) added that several factors strongly influence parents, including (a) social status, which is determined by the level of education, occupation, and income; (b) family form; (c) the stage of family development starting from the occurrence of marriage to the stage of preparation to become parents, and (d) role model factors. Based on the study results obtained from the documentation results in the form of sociodemography, it was stated that in general, the parents in terms of age were 70% aged 30-35 years. These results are comparable when viewed in occupations, the majority of which are housewives with a percentage of 65% and incomes ranging from 1-3 million per month. Meanwhile, 80% of the education level is SMA/equivalent.

The advantages of online learning that utilize ICT are that it prevents the transmission of the covid-19 virus, can be used by many people, accelerates the learning process, facilitates the interaction between teachers and students, and follows the times. With online learning, students have the flexibility of learning time, can study anytime and anywhere. Students
can interact with teachers using several applications such as classroom, video conference, telephone or live chat, zoom, or WhatsApp group. This learning is an educational innovation to answer the challenge of the availability of varied learning resources. While the disadvantages of online learning are that it requires a relatively fast and stable internet connection, requires an intelligent device such as a good android or laptop, online learning is complex and challenging to understand, and no direct interaction can hinder the learning process (Catalano, Torff, & Anderson, 2021; Dung, 2020; Ke & Kwak, 2013).

CONCLUSION

The readiness of parents to use ICT in children's learning during the Covid-19 pandemic showed good results with a percentage of 76.09%. These results are supported by the suitability of the results for each sub-variable, namely the sub-variables of parental readiness and ICT use in online learning. In this case, it can be interpreted that an educator must have readiness and understanding of the online learning system, but parents must also understand and master the technical implementation of online learning, with the hope of providing effective learning even though learning is carried out from home. In this way, parents can assist their children in learning well. Mentoring is expected to form the character of children who can do the tasks that have been ordered from school, practice learning at home, and are responsive in creating works as the implementation of learning.

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