Digital literacy for children based on steam in family education

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Digital literacy for children based on steam in family education

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Abstract. Technology is part of our life and it cannot be separated from our daily life. Consciously or not this will affect the behavior of each individual. Rapid progress in technology makes the children of the current generation increasingly grow into smarter and more critical generation. Fortunately, most parents often use this sophisticated technology as a means to make the children stay busy or as a means for negotiating with them. So, it is necessary to apply an appropriate method. STEAM which stands for Science, Technology, Engineering, Art, and Mathematics is a very important method in child development. This method emphasizes on active learning, and it stimulates children to solve problems. Through STEAM children are trained to focus on solutions, to build logical and systematic ways of thinking and to improve their critical thinking. All of them are intended to prepare the children to build their sense of competitiveness and to prepare them for career opportunities in the technical and creative fields in the future. Family as one of the smallest units in society can be the main agent in reviving digital literacy. Therefore, family also plays an important role for the success of the program.

1. Introduction

Digital literacy is necessary for developing nation's literacy, it can be done through the provision of reading material and by increasing children's reading interest. As an important part for building character, children interest in reading is needed to be nurtured from an early age and it begins from the family atmosphere. It can be started by letting the children to share stories from book or their own story.[1] High reading interest, supported by the availability of quality and affordable reading materials, will encourage the habit of reading and writing, both at school and in the community. By having reading skills, basic literacy such as number, science, digital, financial, as well as culture and citizenship can be developed. To build such atmosphere in the entire educational parties (family, school, and society), since 2016 the Ministry of Education and Culture has intensified the National Literacy Movement (GLN) as part of the implementation of Minister of Education and Culture Regulation No. 23 of 2015 concerning the building character education. By involving those parties from the beginning in determining the concepts, policies, provision of supporting materials, and literacy campaigns, it is hoped that the result will be as what the community need and wish. GLN is expected to foster literacy in families, schools and communities ranging from urban areas to the remote areas. Indonesia. In terms of reading, Indonesia's level is still very low.[2] There are five reason which causes low literacy in Indonesian children. They are (1) reading habits that have not started from home, (2) sophisticated technological developments, (3) minimal reading facilities, (4) lack of motivation to read, and (5) reluctant to improve ideas. Reading activities are fostered in the family. Parents only teach reading and writing at the level of knowing, and not making it as habit. In fact, reading habit must be started since childhood.

The low literacy contributes to the emergence of various social problems in society. Based on cases in the community, it can be seen the low level of literacy culture and inability to share the information accurately. Literacy should be started from the family, then schools and community. Strengthening literacy is an effort to manifest holistic education that involves three education centers, namely family, school and community. For academics this is a project that must be done to educate all element in society through an in-depth research. Digital literacy is the knowledge and skills to use digital media, communication devices, or networks in finding, evaluating, using, making information, and utilizing it wisely. Family as one of the smallest units in society can be the main agent in reviving literacy. This can minimize children in using gadget. Based on the three center principle or three education centers, family, school and community are influential parties. Therefore, family has an important role as the determinant factors for the success of the program. Reviving literacy in the family is an effort to build children's character in facing life according to their era. These efforts are carried out through increasing understanding of various texts. Along with the development in technology, it raises various kinds of text based on IT (information and technology) or innovative text which accomplish conventional text. [3]

The effort to develop a child's personality, family takes a very important role. Family is also responsible in educating the children. Starting from the attitude, the way to communicate, the behaviour, and the values which are instilled in the child's, parents are the main foundation for the further development of the child's behaviour.[4] This can be done by storytelling techniques to children in the family. Introducing children to stories can be done by letting children read books or tell stories to children. For children at an early age, most can not read on their own. [5]

2. Method

The qualitative approach was applied in this research with the consideration to explore the overall relationships that exist in social situations, and then find new things. Qualitative research refers to the meaning, depth of concepts, definitions, characteristics, metaphors, symbols and descriptions of things. The method used in this research is "qualitative phenomenological type" method.

Primary data was obtained in the form of verbal-utterances, words, or the subject behavior (informant) which is related to the culture of the family literacy as a manifestation of holistic education in the global era. The families which were investigated live in Tegalsari Housing, Pare Village, Kranggan District, Temanggung Regency, and Central Java. The secondary data sources were from written documents, photographs which were used to support the primary data.

Table 1. Research Focus, Techniques of Data Collection and Data Sources

No.	Research Focus	Techniques of Data Collection	Data Sources
1.	Plan for family literacy habit as a manifestation of holistic education in the global era	Interview	Parents
		Documentation	Activities and Interaction
2.	The process of making family literacy habit as a manifestation of holistic education in the global era	Observation of the family literacy habit	Administration Completeness and the documentation of Family literacy activities
			The results of the observations are in the form of notes, recorded images and sounds, as well as the material

			presented
		Interview	
		a. Educators and managers	Educators and managers
		b. Parents	Parents
3.	Evaluation of family literacy as a manifestation of holistic education in the global era	a. Observation	a. Holistic Education
		b. Interview	b. Parents
		c. Documentatiom	c. Notes and impressions
4.	Parents and community participation in planning, implementing, and evaluating family literacy as a manifestation of holistic education in the global era	a. Observation	a. Parents meeting
		b. Interview	b. Parents and community
		c. Documentation	c. Notes / minutes meeting

3. Findings and Discussion

Literacy is important as a basis for logical thinking habits and then it is continued with reading and writing process which is ending with a creation. Literacy has not been deeply rooted in our culture. People watch or hear more often than read or write. Literacy activities diverse in families. This can be preceded by the parents' model by setting aside time to read, and providing facilities for children from an early age to love reading. In addition, they also need to motivate and remind the children the importance of reading. Practically, parents give space to children to set aside their time to read such as by taking them to bookstores, libraries, museums or buying printed media.

3.1. Strengthening Digital Literacy in Family Education

Based on data collection on the implementation of digital literacy in family education, the research results showed the aspects of family literacy activities which were consisted of (1) setting aside time to read, (2) providing facilities to children, (3) giving motivation the importance of reading, (4) giving a special room to read, (5) setting aside time to read, (6) taking children to bookstores, (7) taking children to libraries, (8) taking children to museums, (9) buying printed media. The data findings are presented in the following diagram:

RESPONSES

- Digital Literacy
- 1 parents set aside time to read more dominantly in assisting children to read at night
- 2 parents providing facilities for children is done by providing story books
- 3 parents giving motivation about the importance of reading
- 4 facilitating the existence of a reading corner in every corner of the house
- 5 Parents giving time to children to set aside time to read
- 6 taking children to the bookstore,
- 7 parents taking children to the Library
- 8 parents taking children to the museum

Figure 1. Diagram of Strengthening Digital Literacy in Family Education

Based on Figure 1 it can be seen that in the aspect of family literacy activities, parents set aside time to read more dominantly in assisting children to read at night which was obtained by 87% of 30 informants. While the other 13% accompanied children to read in the afternoon. Meanwhile in the aspect of parents providing facilities for children is done by providing story books which are equal to 98%, and the other 2% providing special reading rooms at home. In the aspect of parents giving motivation about the importance of reading, it is more dominant by sticking pictures of reading motivation that is equal to 67%, while the other 13% sticking written messages on the wall, and 17% sticking to the picture of motivation, and 1% abstain. In the aspect of giving a special room for reading at home is dominated by the provision of reading rooms in the home, which is 80%. Another result in this aspect is facilitating the existence of a reading corner in every corner of the house. In the aspect of giving time to children to set aside time to read, there is a dominance of parental statements as much as 63%. Whereas in the aspect of taking children to the bookstore, 53% of parents take their children to the bookstore within a month, while the other 30% every six months and the other 17% answer that they never take their children to the bookstore. In the aspect of parents taking the children to the museum, there is a dominant answers in never as much as 57%, and once every six months at 33% and once a month at 10%. Furthermore, in the aspect of parents taking children to the museum, there were 57% never, 33% every six months and 10% once a month. In the aspect of parents inviting children to buy one of the printed media is dominated by purchasing picture books by 67%, buying story books 27% and buying flipbooks at 7%.

Form of participation of a person or community group in the development process can be in the form of joining activities, sharing ideas or thoughts, energy, time, expertise, capital and / or material, and participation in utilizing and enjoying the results of development. In literacy programs,

the family play an important part to control the children in using gadget. Family becomes the determinants of the success of the program.to build the children's character in facing life. Improving their understanding of various text in the era of digital technology raises various kinds of text based on the latest information and technology or innovative text.

Based on the findings presented in Figure 1, it can be seen that parental participation in strengthening literacy in the family is seen in aspects of the activity which consist of: (1) parents set aside time to read. (2) parents provide facilities for children to love reading (3) parents motivate the importance of reading. (4) parents provide a special room for reading at home. (5) children make time to read. (6) parents invite children to bookstores. (7) parents invite children to the library. (8) parents invite children to the museum. (9) parents invite children to buy one of the printed media products. It can be concluded that the parents' participation as educators at home. Parents' statement shows their involvement in assisting and facilitating the need to read children as part of the learning process at home.

3.2. Pattern of the Correlation between Family Literacy and Holistic Education.

The findings and data presented in the previous section about strengthening literacy in the family can be linked to holistic education. Holistic education pays attention to the students' needs and potential in the intellectual, emotional, physical, artistic, creative and spiritual aspects. The learning process becomes a personal responsibility as well as a collective responsibility, therefore learning strategies are more directed at how to teach and how people learn. Several things must be considered in developing a holistic learning strategy that include (1) using a transformative learning approach; (2) flexible learning procedures; (3) problem solving through cross disciplines, (4) meaningful learning, and (5) involving the community in which the individuals live in their learning. In holistic education, the role and authority of the teacher to lead and control learning activities are few and the teacher acts more as a friend, mentor, and facilitator. The role of the teacher is like a friend on a journey that is experienced and fun. The goal of holistic education is to develop the individuals' potential by putting them in a more pleasant and exciting learning environment, democracy and humanity and giving them the experience in interacting with their environment. Through holistic education, students are expected to become themselves (learning to be).
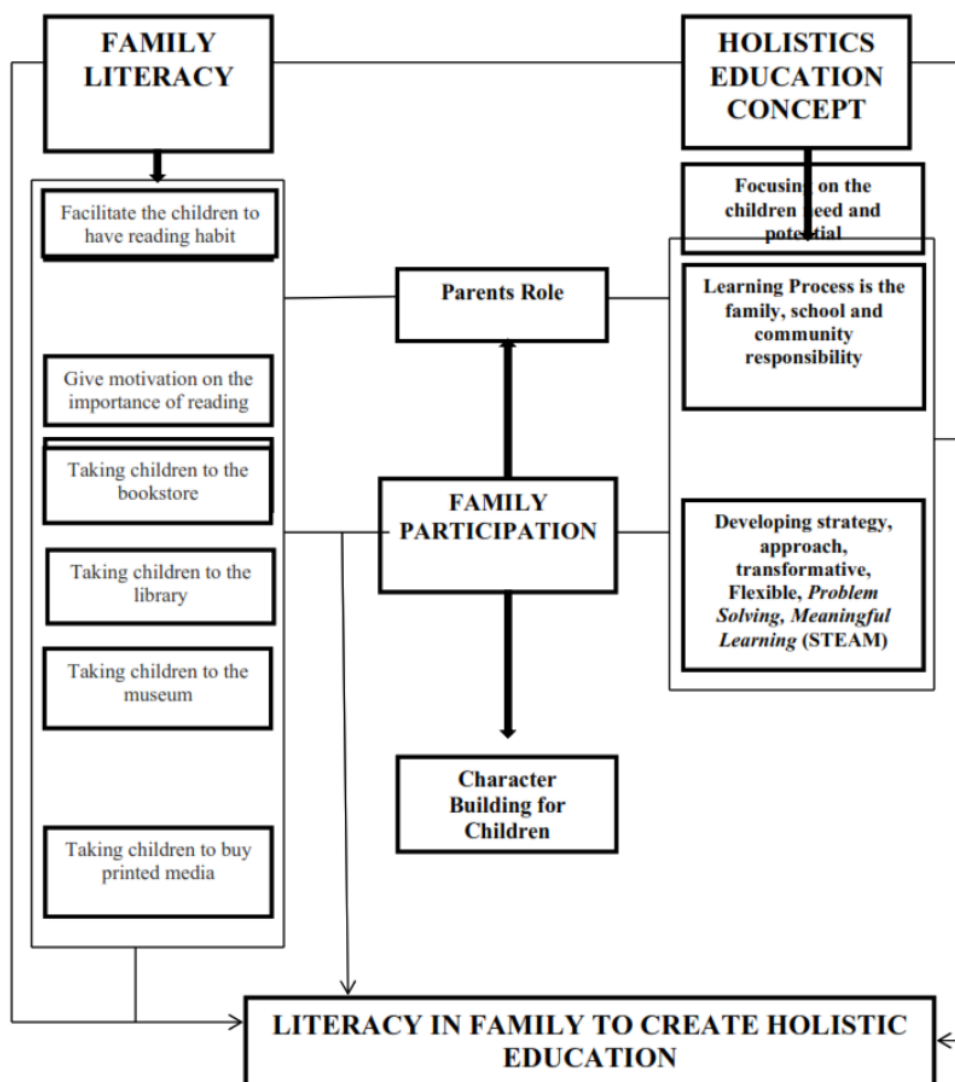
Figure 2. Pattern of Establishing a Family Literacy in Creating Holistic

In family education the teacher's role is carried out fully by parents.[6] This is related to the concept that parents are the first and foremost educators, and families are also the first and foremost institutions in children's education. Furthermore, a pattern of relations between family literacy culture and formulation of holistic education can be formulated.

4. Conclusion

Family as one of the smallest units in society play an important role in creating literacy which is intended to minimize accessing game from gadget among the children. STEAM is one of the most

important methods in child development and facilitates in strengthening the digital literacy that is appropriate for children development because it emphasizes on active learning, and stimulates children to solve problems.

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