

# Promoting Digital Literacy Skills: An Action Research to People of *Kampung Literasi*

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Received December 15, 2019; Revised March 14, 2020; Accepted March 28, 2020

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**Abstract** Indonesian people's reading index was considered poor. In this fast-changing information era, efforts to address this issue have to be in accordance with the underlying principles of 21<sup>st</sup> century that are regarded as digital literacy. The current technology advancement has led to abundant information, but with lack critical ability in choosing information sources. In response, the mastery of digital literacy skill is required to address this issue. As response, this study seeks to enhance the digital literacy skills of the people in the *Kampung Literasi* by focusing on the implementation and media targeting digital literacy skill improvement. This study exemplified the work of collaborative teams to produce change in improving digital literacy skills by using Creswell's action research model modified into ICARE model (Identification, Consolidation, Action, Review, and Evaluation). A community focusing on literacy empowerment program named *Kampung Literasi* located in Sumedang Regency, West Java, Indonesia, was selected to be the participant considering its concern toward literacy development in their area. The action results revealed that the established programs done in *Kampung Literasi* in Sumedang Regency have improved community's digital literacy skills in utilizing e-library and managing e-resources. In specific, this ICARE model could serve as an alternative solution to address literacy issues in the *Kampung Literasi* to make its program succeed. Considering this positive outcome, this study contributes to the development of literacy movement in Indonesia. Therefore, this ICARE model is recommended to be implemented by more *Kampung Literasi* in other villages in Indonesia, or by other literacy improvement programs.

**Keywords** Digital Literacy, Action Research, Literacy Development, Descriptive Analysis, Adult Literacy

## 1. Introduction

Literacy is not only merely about reading and writing activities, but is also related to the demands of comprehending information critically and analytically (UNESCO, 2003). In accordance, Antoro (2017) reported that World Economic Forum (WEF) considered literacy as the must-possessed skills in 21<sup>st</sup> century in addition to competency and character. Considering the importance of literacy, *Kampung Literasi* (Literacy Village) was designed by the government of Indonesia as a community empowerment model, which aims at establishing literacy habits to realize the autonomy of learning and entrepreneurial skills. Direktorat Pembinaan Pendidikan Keaksaraan dan Kesetaraan (2017), *Kampung Literasi* is a village area developed to create knowledgeable society and long-life learners through sustainable efforts by promoting six literacy types: reading and writing literacy, numerical literacy, scientific literacy, informational literacy, financial literacy, and cultural literacy. Considering that the lack of reading literacy would result in uncompetitive human resources (Teguh, 2013), *Kampung Literasi* is expected to be one of the efforts to keep literacy in the communities going and sustaining and as the birth place and growing literate communities.

The advancement of information technology developing literacy programs should prepare the individuals to wisely respond to abundant information. According to *Asosiasi Penyedia Jasa Internet Indonesia* (Indonesian Internet Service Providers Association), the number of internet users in Indonesia reached 132.7 million from 256.2 million people of Indonesia's population. This indicates that the number of internet users in Indonesia reached 51.8% from the total population of Indonesia with a balanced composition between men (52.5%) and women (47.5%). However, seen from geographical aspects, the most internet users were in Java with a total of 65%, or 86.3 million people (APJII, 2016). Most of Indonesian citizens are currently in their productive age (15-37 years old). This

generation is a digital native who has a high dependency on information searching on the internet, and according to Prensky (2001), this generation were born in the 1980s and beyond, and have been introduced into the digital technology environment since they were born. Hence, it is inevitable that they are susceptible to be less selective in choosing information.

Consequently, literacy pattern is recommended to be implemented. Miftah et al. (2016) states that literacy pattern is a form of a continuous situation carried out by a group of people in conducting a series of learning starting from the stage of receiving and reading to the stage of creating. Digital literacy is essential to be possessed by the community as abundant information is now available in digital forms. Hence, a lack of understanding in the digital world can lead to the emergence of various digital media abuses occurring at the personal, social and national levels. Pratiwi & Pritanova (2017) support the idea by stating that the lack of understanding of digital literacy affects the psychological of children and adolescents, resulting in generation who could insult others, be jealous towards others, face depression, be easily influenced due to negative comments, and be used to speak in an impolite language. Hence, the improvement of digital literacy skills is expected to emerge a critical nature in receiving information, so that people are able to distinguish factual information and hoaxes, especially those obtained from social media that has high probability of spreading hoaxes (Hidaya, Qalby, Alaydrus, Darmayanti, & Salsabila, n.d.).

Nowadays, there have been many studies conducted to improve literacy skills focusing on reading and writing activities of a community. Saracho (2000) conducted a research to investigate the types of literacy activities and materials used by family members at home to promote children's literacy development by involving 36 families with kindergarten children. The results revealed that the family members were sensitive to their children's interests and skills in selecting the activities and materials to promote their children's literacy development and the family-child interactions at home. The family members were engaged in literary activities in both inside and outside the home library. Hence, families engaged in informational reading.

Ngwaru & Oluga (2015) discussed why literacy development has lagged in Sub-Saharan Africa. They analyzed the results of the case study component of the Early Literacy Development project in the Lindi Rural District of Southern Tanzania. The study focused on the relationship between literacy practices, literacy events, and early literacy development at home and school in low-resourced communities. The influence of school infrastructure and ecology on literacy practices and events at home and school was also highlighted as being of special interest.

Moreover, Someketa et al. (2017) revealed that parents in King William's Town, South Africa were not effectively

involved in their children's literacy acquisition because they did not feel empowered to influence their children's literacy development due to shortage of literacy materials such as newspapers, magazines, storybooks, and computers, which has militated against parental involvement. It was revealed that there was a need of parental empowerment in terms of knowledge and skills, understanding, and resource allocation.

Nevertheless, after examining aforementioned previous research, there has not been any research examining the improvement of digital literacy skills, especially done at *Kampung Literasi* launched by the government of Indonesia. Most research conducted at the *Kampung Literasi* still focused on the reading and writing literacy and numerical literacy. For example, Pandapotan (2018) conducted a research entitled "The Development of *Kampung Literasi* Model to Increase Educational Motivation and Interest in Reading of the Community in Kolam Village, Deli Serdang Regency" by visiting five primary schools and non-formal education of school-aged children, teenagers and the general community by developing learning centers and public library.

Then, Muslimah & Ganggi (2019) conducted a research entitled "One Home One Library Movement in Empowerment of *Kampung Literasi*". The results revealed that the existence of One Home One Library movement has made the book closer to the people in two villages, namely Kepek Village and Tileng Village. This movement involved three activities, namely GMM (*Gerakan Minggu Membaca*, Sunday Reading Movement), Goat Husbandry, Nature Library (in each resident's front yard). The promotional activities were conducted by utilizing social media to bridge the information exchange, promote business units, and seek information. This movement had an impact on social change in the fields of education, economy, culture, and social. Moreover, a research conducted by Nuswantara & Savitri (2018) entitled "Developing *Kampung Literasi* as an Effort to Improve the Imaginative Creative Critical Thinking of Children in Gang Dolly through Writing and Selling Short Stories" had developed the reading and writing skills for the children in the community reading park, thus they could produce a good writing. This study partnered with DAR! MIZAN publisher to publish their writing, hence, the children could generate new source of income.

The above mentioned studies focus on two types of literacy: reading and writing. Then, it can be inferred that the other literacy types of the *Kampung Literasi* program need to be developed to enhance digital literacy. Therefore, this study aims at enhancing the digital literacy skills of the people in the *Kampung Literasi* of Sumedang Regency, West Java, by focusing on answering a research question: how and what media can improve the digital literacy skills of the *Kampung Literasi* community.

However, there has been a little number of researches on digital literacy. Silvana & Darmawan, (2018) found that

digital literacy education had a positive effect on knowledge, by using social media used by young people to build social media awareness of wisely spreading information. Furthermore, Nurjanah et al. (2018) examined digital literacy and the use of e-resources to obtain science information, in which the digital literacy has a primary focus on the field of information related to the research of investigation, evaluation, and the use of information. The results revealed that the basic skills of digital literacy had a significant relationship with the quality of the use of e-resources with the low correlation category.

After examining the above previous research and the importance of possessing digital literacy, this study seeks to fill the research gap on promoting literacy at *Kampung Literasi*, as a form of support to Indonesian government's program in promoting digital literacy skills of community living in the area of *Kampung Literasi*. This study is believed to be novel as Furqon (2018) affirms that in facing the Industry 4.0 or the era of disruption, "new literacy" is required in addition old literacy. Old literacy comprises the competencies in reading, writing and arithmetic; whereas, new literacy comprises data literacy, technology literacy, and human literacy. Data literacy is related to the abilities to read, analyze, and draw conclusion based on the obtained data and information (big data). Technology literacy is related to the abilities to understand the workings of the machine, the application of technology and work-based technology products to obtain the maximum results. Human literacy is related to the abilities to communicate, collaborate, and be critical, creative, and innovative.

## 2. Literature Review

In public discussions, literacy is synonymous with ability or competence; in daily life, it is defined as the ability to read and write information in printed media, such as magazine, newspaper, and so on (Goodfellow, 2011). Literacy expresses one of the fundamental characteristics of participation within the community (Martin, 2008, p. 155). Literacy can also be defined as 'the way of general culture utilizes the written language that people use in their lives' (Barton, et al., 2000; Goodfellow, 2011; Scribner & Cole, 1978; Street, 1984).

To promote one's literacy, the individual needs to comprehend literacy itself. To have this comprehension, the first thing to do is to be aware of the characteristics of literacy. Kern (2000) proposes the 3R that stands for Responding, Revising, and Reflecting. First, responding is the involvement of two parties, namely reciprocal relationship between teacher and the student. On one hand, the student will respond to the task in the form of text that has to be read and understood. On the other hand, the teacher responds to the outcome of the student's work by giving feedback that can help the students achieve a certain

level of accuracy in his/her responses. For both parts, the responses can be used to measure the level of understanding. Second, revising encompasses various language-related activities. Examples include the task of formulation of ideas, organization process, and reporting of the organization result. Last, reflecting is an evaluation process of what has been done. Reflecting can be done from two different standpoints: receptive language (listening and reading) and expressive language (speaking and writing). In terms of receptive language, some questions can be posed, including "what is the goal or intention of the speaker or author?"; "Do certain things imply the speaker or author's beliefs and attitudes towards the topic in question?" etc. In terms of expressive language, the following questions are useful: "how do other people interpret what I say?"; "How do I know the listener/reader understands or believes what I express?" etc. (Nuswantara & Savitri, 2018).

Literacy skills are ones' social functions in utilizing literacy skills to contribute to their community (Keefe & Copeland, 2011). The promotion of literacy will be effective if it is done in the context of a community. This means that one's literacy skills do not only focus on the promotion of someone's cognitive and information processing skills (Webber & Johnston, 2000), but also on their utilization in the context of community development (Nuswantara & Savitri, 2018).

Literacy and its relationship with community development allow conducive situation for the development of literacy culture. An ideal environment will accelerate the promotion of literacy culture. Therefore, it is evident why the promotion of literacy culture is often carried out in the context of community empowerment (Stewart, et al. Stranger-Johannessen, 2014). The approach for such empowerment is through a certain community/group, such as community libraries in Sumedang Regency, West Java. Community libraries do not only function as a means for increasing individual capacity, but also as a social capital of the community to advance their social, cultural, and economic aspects.

To date, the development of communication technology affects the forms of interaction and every aspect of human life. Social interaction can easily occur with the utilization of the internet. Telecommunications companies create many features or applications to facilitate communication with social media. Considering this issue, continual information and technological development should be addressed wisely, since technology is like two sides of a coin indicating positive and negative sides of social media. According to Kurnia et al. (2018), social media is a means of communication to find information (sources of information) and its use for digital literacy skills needed.

According to Buckingham (2007), digital literacy aims at developing both critical understanding and active participation. Thereby, enabling young people as media consumers to make interpretations and assessments based

on the information obtained is necessary. In addition, it creates them to become media producers, hence, they become participants who are empowered in their community. Basically, digital literacy is a form of public concern to respond to the negative effects of mass media.

The idea of digital literacy was firstly introduced in 1997 by Gilster (Bawden, 2008; Gilster, 1997; Pool, 1997). According to Gilster, digital literacy is the ability to understand and use information in various formats derived from various digital sources (Belshaw, 2012; Gilster, 1997). In a further development, Bawden (2008) proposed a new understanding of digital literacy that was developed based on the concepts of computer literacy and information literacy. Eisenberg & Berkowitz (2001) formulated an information literacy model named the Big Six Skills model comprising the ability to recognize information needed, identify what information needed, identify sources of information, find information effectively and efficiently, access information effectively and efficiently, evaluate information critically, organize and integrate information with existing knowledge, use information ethically and legally, and communicate information effectively. In details, digital literacy is conceptualized based on four main components: underpinning digital literacy, background knowledge of information, central competencies digital literacy, and attitudes and perspective of information (Bawden, 2001, 2008).

There are five types of skills comprised in general digital literacy terms, including:

1. Photo – visual literacy is the ability to read and conclude information from visuals;
2. Reproduction literacy is the ability to use digital technology to create new work;
3. Branches of literacy is the ability to successfully navigate in non-linear media from digital space;
4. Information literacy is the ability to search, find, assess and evaluate critically information found on the website; and
5. Socio-emotional literacy refers to the social and emotional aspects present online, whether it is possible through socialization, and collaborating or just consuming content (Alkali & Amichai-Hamburger, 2004; Aviram & Eshet-Alkalai, 2006; Bawden, 2001; Eshet-Alkalai & Chajut, 2010; Ng, 2015).

Meanwhile, Belshaw in his thesis, *What is 'Digital Literacy'?* (2012), stated that there are eight essential elements to develop digital literacy, as follows:

1. Cultural, which is understanding the various contexts of users of the digital world;
2. Cognitive, which is the power of thought in evaluating content;
3. Constructive, which is the creation of expert and actual aspects;
4. Communicative, which is understanding network and communication performance in the digital world;

5. Responsible confidence;
6. Creative in doing new things in new ways;
7. Critical in responding to content; and digital literacy as a life skill; and
8. Socially responsible.

These aforementioned elements are the basic elements to develop digital literacy. This indicates that the existence of a *Kampung Literasi* is an appropriate means that has considerable opportunities in developing digital literacy skills for the community. The obtained results show: 1) The availability of knowledge and information in non-formal education in the forms of books and non-books available at TBM (*Taman Baca Masyarakat*, Community Public Library), reading corners, or so on, is equipped with information technology; 2) The community has the knowledge, skills and development of a positive attitude in order to have a good quality of life; and 3) The availability of information services and sources of access to information to the public are related to six literacy types: reading and writing literacy, numerical literacy, scientific literacy, informational technology literacy, financial literacy and cultural literacy (Direktorat Pembinaan Pendidikan Keaksaraan dan Kesetaraan, 2017).

In addition, the indicators of the successful implementation of the *Kampung Literasi* program are as follows: 1) Well-spread information on the *Kampung Literasi* program to the public; 2) Increase of community visits to the *Kampung Literasi* activity center who has intention to gain knowledge, seek information and/or learn skills; 3) Increase of knowledge and information services in non-formal education channels in the form of books and non-books available at TBM, reading corners or so on, equipped with information technology; 4) Possession of knowledge, skills and development of a positive attitude by the community in order to have a good quality of life; 5) Increase of variety of literacy activities in the community; and 6) More available provision of various knowledge and information services and sources of access to the public related to six literacy, namely read and write literacy, arithmetical literacy, science literacy, information and communication technology (ICT) literacy, financial literacy and cultural and civic literacy (Direktorat Pembinaan Pendidikan Keaksaraan dan Kesetaraan, 2017).

### 3. Methodology

This study employed an action research design, which was used in accordance with the assumption that research must be linked to an agenda of change in the community because action research is conducted not only to obtain the truth, but also to create the expected conditions. In relation to the efforts to make changes in the context of education, an action research in the literary treasures is widely used as a design in solving problem in the field of education (Adelman, 1993; Capobianco & Feldman, 2006; Jefferson,

2014; Julia & Isrokatun, 2019; Niemi, 2018; Supriyadi, Julia, & Iswara, 2019).

An action research provides an opportunity for researchers to find new change efforts in accordance with conditions and needs (Darwis, 2016) with phenomenal approach. Through this action research design, the researchers seek to explore practical problems to find solutions (Creswell, 2002). Therefore, the research procedures undertaken in this study refers to Creswell's (2002) pre-action and post-action phases, which are modified by the authors into ICARE (Identification, Consolidation, Action, Review, and Evaluation) model, which is firstly introduced in this study. The three first stages (Identification, Consolidation, and Action) are categorized into pre-action phase; and the two last stages (Review and Evaluation) are categorized into post-action phase. Hence, the procedure of this study is: 1) Conducting pre-action phase, which consists of identifying problems, consolidating collaboration with related parties, and putting the plans into actions to address the identified problems; 2) Conducting post-action phase, which consists of reviewing the given actions and evaluating what the actions have achieved; and 3) Conducting critical reflection activities on two previous phases as an added procedure to obtain explicit steps in realizing the desired changes. Hence, this study could produce a method to be implemented in all regions conducting similar literacy program.

In addition, the principles of collaboration as a characteristic of action research design (Creswell, 2002) were implemented by involving the non-governmental organizations engaged in education and the local government education office, and a student activity units in one of the campuses in Sumedang Regency. The research that employed collaborative action research processes in education involved collaboration among teachers, or between teachers and researchers (Messiou, 2018; Zech et al., 2000)

### 3.1. Research Site

This study was conducted at *Kampung Literasi* in Sumedang Regency, West Java, Indonesia. This place was selected as a pilot project in the implementation of the *Kampung Literasi* program as the national literacy movement program. In addition, this place was also oriented as a tourist attraction considering its strategic location that is near to a recently inaugurated tourism site named Jatigede Dam.

### 3.2. Research Participants

The participants of this study were 65 digital natives with a productive age, consisting of 35 male respondents and 30 female respondents with different professional

backgrounds. They were selected using a random sampling method taken from five regions in the village where the *Kampung Literasi* program was implemented. In the pre-study, 200 Internet users in five areas of the *Kampung Literasi* were surveyed. The survey results showed that 124 participants stated that they often accessed the Internet with an average of 4 hours every day to seek for sources of information. Of these 124 participants who spread across the four regions, 65 people (52.41%) were taken as a sample of Internet users with different professional backgrounds.

### 3.3. Data Collection and Analysis

The data were collected using several techniques, namely survey, semi-structured interview and evaluation of digital literacy ability. Survey was conducted to explore insights about digital literacy, sources and media of information used, attitudes and perspectives about digital literacy. The survey was developed using two scales of Guttman scale, proposed by Louis Guttman (Widhiarso, 2011) and the Likert scale proposed by Rensis Likert (Allen & Seaman, 2007). Next, the semi-structured interview was conducted to explore participants' opinions on the conditions related to skills in utilizing literacy technology, and their perspective after conducting a series of actions. Lastly, the evaluation of digital literacy ability was conducted to find out the initial conditions and final results of giving action.

Then, the data were inventoried and presented in the form of tables and interview transcripts, and then analyzed thoroughly in order to obtain an interpretation based on the existing data. The data analysis approach employed an inductive method in which the researchers had previous assumptions, but they were more open to field findings. This data collection and analysis are in the pre-action phase of action research and ICARE model, specifically in the action stage.

## 4. Results

The presented results below were obtained from the implementation of action research using the procedure of Creswell's balance model with modification. Hence, the following elaborated results are presented based on this procedure.

### 4.1. Pre-Action Phase

This phase consists of identifying research question, consolidating collaboration to develop plans actions with related parties, and putting the plans into actions. There are 65 participants who participated in a survey, which provided comprehensive findings for this pre-action phase.

4.1.1. Identification

**Table 1.** The Participants' Perception before the Training

Statement	Strongly disagree	Disagree	Rather agree	Agree	Strongly agree
The existence of <i>Kampung Literacy</i> is important for the community				54	11
The existence of Community Public Library is important in each small area				62	3
Books in Community Public Library are quite representative	16	38		11	
The programs conducted are in accordance with the needs of community	12	39		14	

To identify the problems rising in the implementation of *Kampung Literasi*, there are 65 participants who were invited to participate in a survey. The survey showed that the participants gave quite positive responses to the existence of *Kampung Literasi* as presented in Table 1 above. There are 11 participants (16.9%) who strongly agreed and 54 participants (83.1%) who agreed that *Kampung Literasi* is important. Additionally, the participants believed that having community libraries in all small areas is important as there are 62 participants who agreed (95%) and 3 participants who strongly agreed (4.6%). However, the enthusiasm of the participants was not accommodated with proper facilities, such as sufficient book supplies and activities that meet the needs of the community. The activities developed in the *Kampung Literasi* of Sumedang regency were geared more toward reading, writing, and numerical literacies as an effort to tackle illiteracy. Therefore, it can be inferred that the community libraries were not optimally used yet.

In addition, the majority of the participants liked to read and write. There are 57 (87%) participants who admitted that they liked reading and 54 (83%) participants who admitted that they liked writing. This indicated that the participants already had the ability to read and write. On the other hand, the data showed a possible discrepancy. The participants stated that they like reading and writing but 59 participants (90%) stated that they did not have sufficient reading materials, but rarely visit the community libraries, libraries, and attend academic forums such as seminars.

Considering this, the participants were interviewed about the source of their reading materials. Then, it was found that 56 participants (86%) got their reading materials from the Internet and 9 participants (14%) got them both from the Internet and from books they purchased. Therefore, it can be concluded that most of the participants' reading materials, which serve as their source of information, were obtained from the Internet.

In relation to the sources, the majority of information consumed by the participants was obtained from social media, such as Facebook, Twitter, and Instagram. There are 37 participants (56.92%) who stated that their main reading materials were social media. Additionally, 18 participants (18.46%) obtained information from blogs and

10 participants (15.38%) obtained information from online newspaper. Meanwhile, none of the participants have made use of electronic books or academic journals as their reading materials. Some participants were interviewed about their obstacles in accessing books and journals. Participant 1 stated that she did not find the site providing free electronic books", while Participant 2 and 3 stated that they did not know how to access them.

However, the participants did not notice the facility provided by Perpustakaan Nasional Republik Indonesia (National Library of the Republic of Indonesia), hereinafter abbreviated Perpusnas, which can be accessed from <https://www.perpusnas.go.id/>, to access journal articles, electronic books, and other references. This can be seen from the fact that there was no participants stating 'Yes' to the statements whether they know about the facility and a registered member of Perpusnas or not. However, 10 participants stated that they have visited Perpusnas website even though they did not know about e-Resources.

In relation to archiving, 25 participants (38.46%) collected their reading materials and 40 participants (61.54%) did not collect their reading materials. To follow up these findings, 25 participants who collected their reading materials were interviewed about their methods in collecting reading materials. In details, 15 of them copied and pasted the information into Microsoft Word documents and saved them in their hard disk, and 10 of them did the same method but saved them into clippings. In addition, 40 participants who did not collect their reading materials were interviewed about their reasons. In details, 20 participants believed it was unnecessary, 15 participants said they did not collect their reading materials because they could easily browse for the information again, and 5 participants did not know how to collect their reading materials. On another note, it was revealed that all 65 (100%) participants did not use a specific application to collect their reading materials because they did not know any application that can manage their reading materials.

The aforementioned findings revealed the reason behind the community members of the *Kampung Literasi* in Sumedang regency of not being able to access books and academic journals, which was their lack of knowledge and skill in utilizing information and communication technology. As response to this issue discovered in

identification stage, it was necessary to take actions to promote their literacy skills based on the utilization of ICT. Thus, training on how to utilize e-Resources feature and Mendeley application was prepared to promote digital literacy skills.

#### 4.1.2. Consolidation

The first step to address the observed issue was to consolidate the stakeholders of the *Kampung Literasi* by informing them the prepared and designed actions to promote the digital literacy skills of the community members. They responded positively to the plan to provide training for the community members of *Kampung Literasi*. In addition, a positive response was shown by the local NGO and Education Office of Sumedang Regency who were willing to provide sufficient and reliable internet access to make the training successful. In general, the training aims at improving community's competence in digital literacy as response to the high demand of information technology nowadays. This consolidation step resulted in an agreement that the implementation of the

training activities would be conducted in the community libraries with additional internet support. Some college students were also involved to be observers. Their job was to observe the participants during the test of e-resources and Mendeley utilization.

#### 4.1.3. Actions

After the consolidation was done, training materials were developed, which included how to use e-Resources from the Perpustakaan and Mendeley in managing references. After assessing the condition during identification and consolidation stages, the training came up with specific objective that it is expected that the community will have skills and knowledge in accessing representative sources of information and in how to manage those information. Before conducting the training, it was ensured that each of the 65 participants was equipped with a computer or a laptop with Internet access. Hence, the procedure of training is Registration, Login to e-Resources, and Digital Reference Management, as specifically presented in the following table;

**Table 2.** The Training Scheme

Training of Promoting Digital Literacy Skill in the 4.0 Era	
1. Objective: Promoting the digital literacy competence of <i>Kampung Literasi</i> members 2. Time allotment: 3 x 8 hours 3. Focuses: The skills to access digital information from reliable sources and using Mendeley Application in storing and managing information 4. Tools: Laptop, internet access, Mendeley software 5. Trainers: One lecturer and one literacy activist who have expertise in digital literacy	
Day 1 Objective :Participants are expected to be able to access information from representative sources	Procedure: 1. Discussing websites providing information related to research findings 2. Utilizing E-Resource of Perpustakaan Nasional 3. Using techniques to seek reading materials from open access websites
Day 2 Objective: Participants are expected to be able to utilize Mendeley Application	Procedure: 1. Introducing Mendeley 2. Introducing techniques to download citation from Google Scholar 3. How to input articles to Mendeley Application? 4. Making bibliography
Day 3 Objective: Ensuring that the participants master the expected skills	Procedure: 1. Reading some articles based on the participants' interest 2. Making literature review with support of Mendeley 3. Evaluating participants' products

A. Registration

The participants were instructed to register themselves to the Perpustakaan Nasional by visiting this page: <http://keanggotaan.perpusnas.go.id>. The registration required the participants to provide their ID cards and active email address to generate their membership ID that was automatically sent to their email.

B. Login to e-Resources

Once the participants received their membership ID,

they were instructed to login to their account by accessing this site: <http://e-resources.perpusnas.go.id>. After logging in to their accounts, the participants were able to use the search engine of e-Resources to search digital references, such as books, journals, and even novels. When searching, the participants can search based on the publishers, such as SAGE and Taylor & Francis, or based on keywords. As an example, the following figure shows the search results of the keyword *pendidikan* (education).

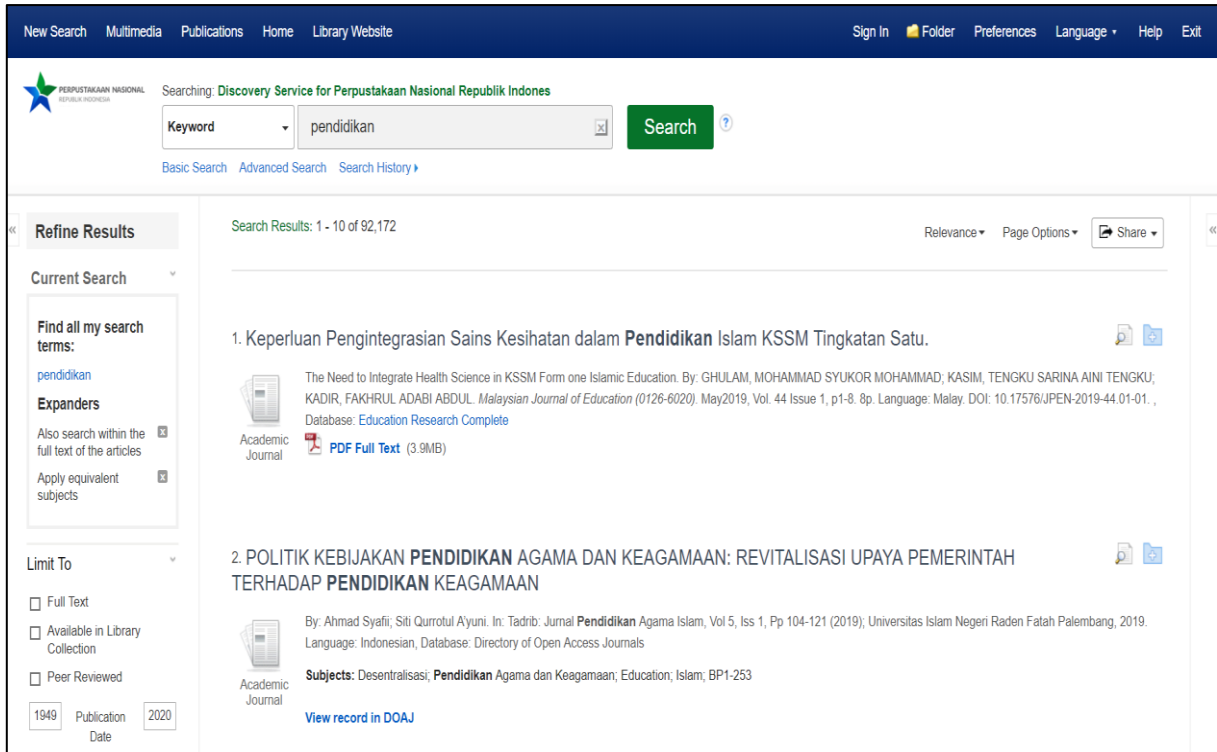


Figure 1. Search Result of keyword ‘Pendidikan’



Following that, the participants were instructed to download their desired reference and save it on their computer or laptop. During the training, some articles and books were not successfully downloaded and were corrupted. To address this issue, the participants were asked to visit the site where the articles were published, in which the address can be found in e-Resources, or use the DOI number of the article.

### C. Digital Reference Management

To enable the participants to manage their reference sources well, they were instructed to download a reference manager application called Mendeley from this page: <https://www.mendeley.com/download-desktop/Windows/>. After downloading the application, the participants were instructed to install the application on their computers or laptops and integrate it with their Microsoft Word program.

After successful installation and integration of the Mendeley application, the participants were instructed to click the Mendeley icon on their desktop or the open icon in the Mendeley menu bar in Microsoft Word. After opening the application, the participants were instructed to manually put the articles that they have downloaded from the “file” column or download the citation files in BibTeX format using Google Scholar. To download the citation

files, the participants should visit this page <https://scholar.google.com>.

Afterward, the participants were instructed to copy-paste the title of the articles that they have downloaded from e-Resources in the search column of Google Scholar. On the desired title, the participants were instructed to click the citation mark, represented by the “...” (quote) symbol.

Afterward, the participants were instructed to click the BibTeX format and download it. The file with the BibTeX format was then dragged and dropped in the Mendeley application. The participants were instructed to add the article files that they have downloaded. This training on the use of Mendeley marked the end of pre-action phase consisting Identification, Consolidation, and Action stage.

#### 4.2. Post-Action Phase

This post-action phase consists of reviewing the implementation of actions and evaluating what the actions have achieved.

##### 4.2.1. Review

After the participants went through training activities, the outcomes were reviewed to identify their perceptions of their mastery of the training materials. The perceptions of the participants were investigated in a survey in which the results can be seen in the following table.

**Table 3.** Participants' Perception after the Training

Statements	Strongly Disagree	Disagree	Rather Agree	Agree	Strongly Agree
The training materials are important and beneficial to me.				54	11
The training materials are highly relevant to my profession.				60	5
The applications used in the training are user-friendly.		2		58	5
The materials of the training have helped me search for references easier.		4		61	
The training has made me more enthusiastic about reading and writing.				55	10
I have mastered the materials that have been given in the training.				58	7

Table 3 above reveals that the participants agreed that the materials given in the training were important and beneficial. There are 54 participants (83.07%) who agreed 11 participants (16.92%) who strongly agreed with the statement. In addition, the participants agreed that the materials given in the training were relevant to their professions. There are 60 participants (92.30%) who agreed and 5 participants (7.70%) who strongly agreed with the statement.

Regarding the use of e-Resource and Mendeley, the participants found them user-friendly. There are 58 participants (89.23%) who agreed and 5 participants (7.69%) who strongly agreed, and 2 (3.07%) participants who disagreed with the statement. The two participants that disagreed with the statement were interviewed to identify their difficulties. One participant said that, during the training, the participant's computer was experiencing technical difficulties that it failed to connect to the Internet. When asked why the participant was not making this known during the training, the participant said he was shy and just decided not to continue with the training. This reflected the lack of his seriousness and motivation. Additionally, the other participant stated that he had not been able to fully participate in the training due to family matters.

Further, for the next statement on the survey, there are 61 participants (93.84%) who agreed that the materials of the training have helped them search for references easier and 4 participants (6.16%) disagreed with this statement. Upon investigating their disagreement, it was revealed that they did not fully participate in the training because they were looking for references in Arabic, which were rather difficult to find. Their main difficulty was the fact that there were no language features in their computers that allowed them to type in Arabic letters. Eventually, the

problems of the four participants were tackled by giving them additional assistance.

Next, there are 55 participants (84.61%) who agreed that the training made them more enthusiastic about reading and writing and 10 participants (15.38%) strongly agreed with the statement. Moreover, 58 participants (89.23%) believed and 8 participants (12.30%) strongly believed that they have mastered the provided training materials. However, it has to be noted that this was their perception not the proven facts. Therefore, a test was conducted to match their perception with their actual mastery of the materials. In the test, the participants were instructed to write a simple 3-4 pages paper on subjects they were interested in. Afterward, they were instructed to put their references in the Mendeley application.

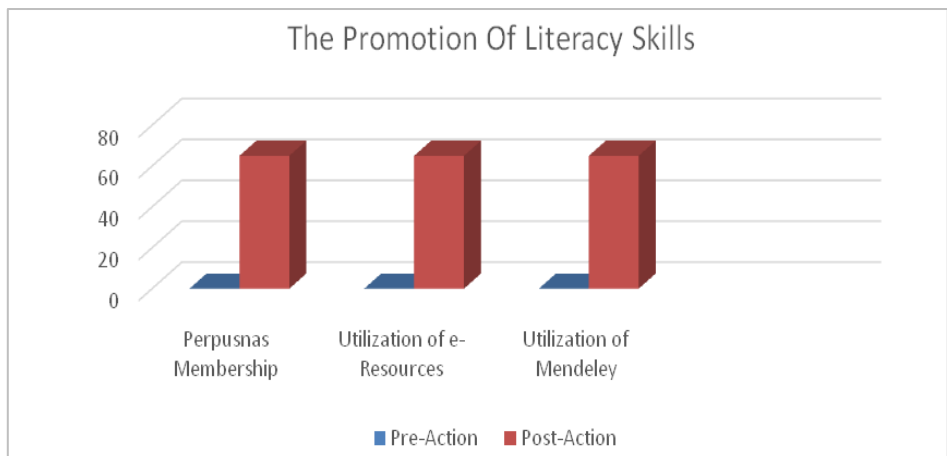
To assess this test, the participants were observed during the process of writing the paper, which was done by college students who had agreed to participate in the research as observers. Each participant was observed by one college student during the test. The result of the test is presented in the following Table 4.

**Table 4.** Mendeley Utilization Practice

Utilization of Mendeley	Yes	No
Citing articles or books from Google Scholar	65	
Downloading citations	65	
Inputting citations	65	
Inputting article files	65	
Making bibliography	65	

The table shows that after the training all of the participants mastered Mendeley. In other words, the actions had successfully promoted the literacy skills of the participants, as depicted in the following figure.

4.2.2. Evaluation

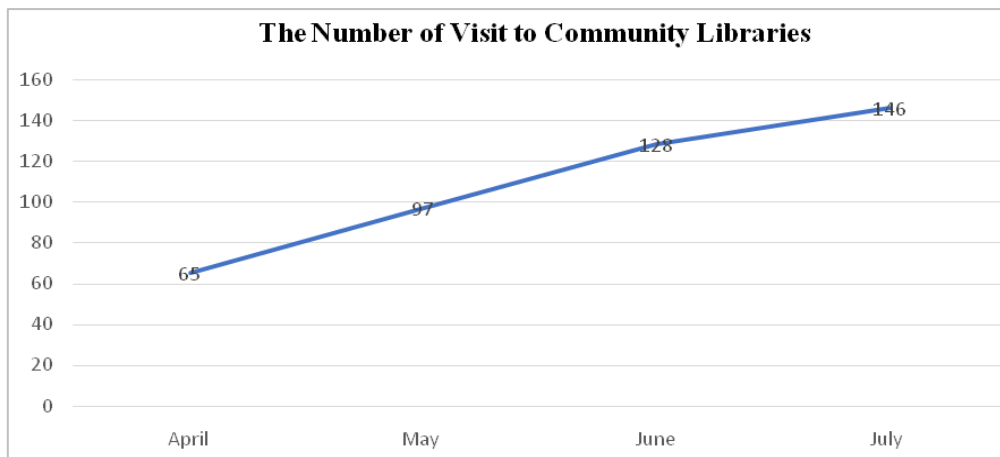


**Figure 2.** The Promotion of Literacy Skills Before and After the Action

All of the stages elaborated above have shown that the literacy skills of the participants were promoted. In the pre-action phase, none of the participants had membership status in the Perpustakaan; whereas, in the post-action phase, all 65 (100%) of them were registered in the Perpustakaan and had their membership IDs to access the digital library and e-Resources. In the pre-action phase, the participants were not aware of the benefit of and how to use e-Resources; whereas, in the post-action phase, all 65 (100%) of them understood e-Resources and utilized them. In the pre-action phase, the participants were not aware of and utilized the reference manager application Mendeley; whereas, in the post-action phase, all 65 (100%) of them were aware of and utilized the application as an archive of reference that can store their reading materials or to assist in making citations when writing.

### 4.3. Reflective-Critical Actions Analysis

The evaluation of the pre-action and post-action phases resulted in the increasing visits to community library in *Kampung Literasi*. In April to July 2019, as depicted in the following figure.



**Figure 3.** The Number of Visit to Community Libraries in 2019

Figure 3 above depicts that after the training, there was increasing numbers of library visits: compared with April, there were 32 additional visits in May; in June, there were 31 additional visits; in July, there were 18 additional visits. The factors affecting this increasing number of visits were investigated by conducting a survey participated by 100 library visitors, as presented in the following table.

**Table 5.** Literacy Activities

Literacy Activities	Yes	No
I visit the community libraries often because they have Internet access	83	17
I visit the community libraries often because they allow me to get new information from other community members, especially the literacy activists	95	5
I visit the community libraries often because they allow me to search for digital references more easily	85	15
I visit the community libraries often because they are close to where I live	25	75
I visit the community libraries often because they are comfortable	81	19
I visit the community libraries often because I borrow books often	38	62
I visit the community libraries often because the staff are friendly	11	89

Table 5 above shows that the motivation for the community members to visit community libraries were the provision of internet access (83%), ease access of information from literacy activists (95%), ease access to search digital references (85%), its close location to their residents (25%), library comfortableness (81%), routine borrowing (38%), friendly staffs (11%). The top four factors were considered as the main factors encouraging the community members to visit the community libraries.

Keeping that in mind, a further investigation was conducted to identify the kind of information that the community members obtained from literacy activists in the *Komunitas Literasi* by involving 10 community members. To sum, their response showed two kinds of obtained information: (1) Information regarding tips on how to search for references or reading materials on the internet (the literacy activists even often helped the community members to search for their desired references); (2) Specific information from article or book reviews that the literacy activists often held in the community libraries.

The abovementioned findings revealed that the training delivered to 65 participants who were literacy activists has affected the participation of the community members in literacy activities. The *Kampung Literasi* programs were “alive” because they served as the knowledge and information service center in which the community members can access abundant information. Moreover, the availability of free Internet access, as a result of collaboration with the government, supported the liveliness of this program. This program is believed to be fundamentally in line with the main objective of the *Kampung Literasi* program, which is to provide knowledge and information services in non-formal education channels through the provision of books and non-books available at community libraries, reading corners, which are equipped with information technology (Directorate of Literacy and Equality Education of the Republic of Indonesia, 2017).

## 5. Discussion

The findings provided new understanding to develop literacy culture among the community, which was previously seen as merely reading and writing activities. In addition, the training to promote digital literacy skills has successfully met the indicators of the successful implementation of the *Kampung Literasi* program proposed by literacy the Directorate of Literacy and Equality Education of the Republic of Indonesia (2017) and the community participation and it expresses one of the basic characteristics of participation of community members (Martin, 2008, p. 155). Hence, it can be inferred that this study could produce a method to be implemented in all regions conducting similar literacy program. In specific, the promotion of digital literacy can be done by conducted ICARE model that resulted in training on the utilization of e-Resources and application of reference manager, which should be supported with reliable Internet access.

The implication of this result is that the promotion of literacy should be conducted in education sector by infusing new literacy that includes data, technological, and human literacy. According to Furqon (2018), data literacy refers to the ability to read, analyze, and make a conclusion based on obtained data and information (big data); technological literacy refers to the ability to comprehend

how machines work and the application of technology and technology-based work to achieve optimum results; and human literacy refers to the ability to communicate, collaborate, think critically, create, and innovate.

Regarding this phenomenon, the education world must strive to develop both of old and new literacy. Therefore, new orientation is needed in all levels of education, hence the provision of education can be highly relevant with the Industrial Revolution 4.0 era. Consequently, teachers need to focus on students' achievement in old literacy, new literacy, and knowledge literacy. Otherwise, there is a possibility of the students to be illiterate (Furqon, 2018).

In relation to exposing students to literacy, the low reading index of Indonesian people has caused a big concern. A survey done by Fitriyah et al. (2019) discovered that teacher's professionalism and responsibility is inseparable from the learning process at school. However, some of teachers did not integrate the learning achievements, because they did not want to put more effort and wanted instant results (Furqon, 2018). Teacher professional learning is considered as a complex process requiring cognitive and emotional involvement of teachers individually and collectively, the capacity and willingness to examine where each one stands in terms of convictions and beliefs, and the perusal and enactment of appropriate alternatives for improvement or change (Avalos, 2011). Therefore, teachers need to constantly reflect on themselves and put more efforts to improve the learning quality that they provide (Supriyadi & Julia, 2019). They are expected to understand learning and teaching styles resulting in a positive change during the learning process. Hence, the teachers need to be fully aware that so far the learning steps have not been satisfactory and need further development or establishment of innovative and futuristic model (Supriyadi, Julia, Iswara, & Aeni, 2019).

In accordance, seeing the significance of literacy and considering the impact teachers are expected to infuse any literacy activities in their teaching; hence teacher can research their teaching and propose or discuss models of teacher professional learning (Castle, 2006; James & McCormick, 2009; Nisbet & Shucksmith, 2017; Novak & Gowin, 1984; Olson & Craig, 2001). It is believed to be significant since teachers learn and change by developing a theory or applying a theory of teacher development program (Clarke & Hollingsworth, 2002; Korthagen, 2010; Korthagen, 2007; Penlington, 2008). Therefore, in line with the findings of this study, teachers are expected to conduct research as an attempt to fix and improve the students' literacy skills. Literacy skills are one's social functions in utilizing his/her literacy skills to contribute to his/her community (Keefe & Copeland, 2011). The promotion of literacy will be effective if it is done in the context of a community. This means that one's literacy skills do not only focus on the promotion of individual's cognitive and information processing skills (Webber & Johnston, 2000), but also on their utilization in the context

of community development (Nuswantara & Savitri, 2018). In meaning that, other community could implement ICARE model by trying to redo the training scheme presented in Table 2.

## 6. Conclusions

In this fast-changing era, there is an urgency to promote digital literacy. Due to alarming rate of Indonesian people's reading index, educational professionals have sought to promote digital literacy, in addition to reading and writing literacy. To address this issue, the Indonesian government has launched *Kampung Literasi* as a comprehensive literacy model established based on the potentials of villages.

Despite this government effort, more involvement from related parties in the village areas is needed to make the most of this *Kampung Literasi* program. A collaborative action research was conducted by involving the local NGO and Education Office of Sumedang Regency to promote digital literacy in Sumedang Regency areas. The pre-action and post-action phases of Action Research proposed by Creswell, developed by the authors into ICARE model (Identification, Consolidation, Action, Review, and Evaluation), were modified with additional critical reflection phase to address the lack of knowledge and skill in utilizing information and communication technology in the community.

After being given some actions, the digital literacy of the community was promoted and they could reduce their consumption of questionable information from social media and fulfill their needs of references that have not been provided in the community libraries. In other words, action research modified into ICARE model could serve as an alternative solution to address literacy issues in the *Kampung Literasi* to make its program succeed.

Considering the positive outcomes of this study, it is recommended that more parties should experience the benefits. First, teachers are recommended to implement this ICARE model in conducting their classroom action research. Then, the policy makers are also recommended to take part in any enhancement of literacy program in their area to make sure that the community experiences such benefits. Lastly, the government of Indonesia is recommended to disseminate the results of this study; hence, other *Kampung Literasi* in other villages in Indonesia can conduct similar research.

## Acknowledgements

The authors extend their gratitude to the LPPM of Universitas Pendidikan Indonesia for funding this study. The reference grant is Rector Decree No. 5493/UN40/KP/2019 and Agreement/Contract No.

294/UN40.D/PP/2019.

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