

# Challenges of Community Education in the Digital Era

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**Abstract**—This research is based on the empirical study result of descriptive study on community education program conducted in all “sekolah perempuan” by utilizing ICT in their learning process. This study uses a case study qualitative approach. The implementation of community education program now has developed rapidly along with technological development. Information Communication and Technology (ICT) has become one of important components in the development of society’s life in digital era. The utilization of ICT in education aims at providing an ease of access in receiving information, data accuracy, and data speed by presenting an updated information. However, the challenge is not all people think wisely in addressing the development of technology as it is found that technology is often used to access negative information. It is caused by the lack of awareness of society on the importance of information and the utilization of information technology in developing information culture to achieve “the information society”. The strategies that need to be done in the improvement of digital literacy are demand creation, supply providing, and behaviour change. As one of efforts that can be implemented in utilizing ICT in community education institution of all girls’ school is by developing blended learning where its activity is conducted through two ways which are online and face to face. At least there are four principles in blended learning including constructivism, constructionism, social constructivism, as well as connected and separated.

**Keywords**—community education; blended learning

## I. INTRODUCTION

Information communication and Technology (ICT) or in Indonesian terms known as Information and Communication Technology (ICT) has experienced very rapid development. ICT has become an important foundation in the development of the life of modern society in the current digital era. Information and communication technology include hardware and software to carry out one or a number of data processing tasks such as capturing, transmitting, storing, retrieving, manipulating, and displaying data. The dynamics of life change are very fast by involving digital technology in all fields of life. So digital technology is currently something that cannot be separated from humans, both by individuals, groups, organizations, and even social systems.

The growth and development of information technology in society, such as “viruses” quickly spread and affect many

people. One of the digital technologies is the development of the internet.

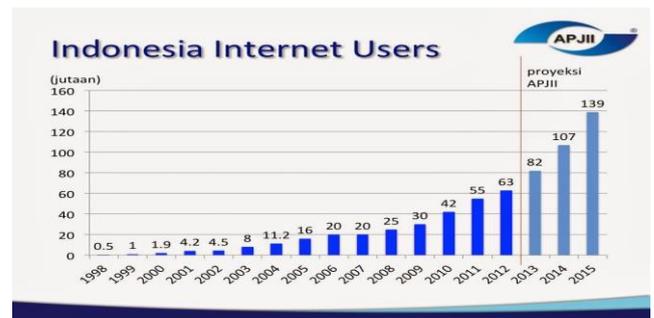


Fig. 1. Graph of Growth of Internet Users in Indonesia [1].

Figure 1 above shows that the growth of Internet users in Indonesia continues to increase from year to year 2012 by APJII, the number of internet users in 2007 reached 20 million, then increased to 25 million (2008), 30 million (2009), 42 million (2010), 55 million (2011) to 63 million in 2012. In fact, in 2015 the number of internet users has reached 132.7 million, equivalent to 51.7% of the country's population. This figure is in line with the very large number of Facebook, Instagram, and YouTube users in Indonesia. Seeing the high growth of internet users, this graph is expected to continue to increase, this fact shows the opportunity to use the internet or information technology to facilitate information and creative industries in various sectors that reach all walks of life.

### A. Indonesian Education in the Digital Era

The digital era has media that has made it easier for people to receive information faster. The more sophisticated digital technology makes a big difference to the world, with the emergence of various kinds of digital media that are increasingly emerging. Various groups have been facilitated in accessing information through many ways, and can enjoy the facilities of digital technology freely and in a controlled manner. One of them is in education. Education is something that is fundamental to the progress of the nation and state.

Ideally, education should be accessible to all Indonesians. However, the reality has not been realized until there due to several reasons, including first, Indonesia, which is an archipelago country so that access to education is not evenly

distributed. Secondly, the Government's budget in administering education is still limited, so the cost of education is still expensive. Third, there are still limited educational resources. These three reasons have caused Indonesia's education quality to remain low.

The rapid development of the times makes no boundaries between space and time, the development of information technology such as the internet is becoming a necessity for everyone. This can be used as a tool to facilitate the reach of educational tutorials. By developing an information technology-based education system, this system can reach all corners of the country, so that the delivery of materials and teaching materials can be easier. This system can be more efficient and tend to be cheaper, than using conventional methods. In addition to efficiency goals, students are also familiarized with technology. That way, the goal of providing technology-based knowledge can be fulfilled. Changing the technology-based education system will create human resources that are ready to harmonize technological changes in the future. Indonesia implements an educational framework that matches the 21st century competency framework that leads to innovative learning. Education policies in Indonesia in the 2015-2019 period are listed in the RPJMN which covers the following 10 aspects.

- 12-year compulsory education implementation;
- Learning Quality Improvement;
- Improving Teacher Management, Teacher Training and LPTK Reform;
- Increasing Access, Quality, Relevance and Competitiveness of Higher Education;
- Increasing Access and Quality of Early Childhood Education
- Education & Job Skills Training and Adult Education;
- Increasing Religious Education;
- Strengthening Religious Education and Citizenship Education / Character Education;
- Increased Efficiency in Education Financing; and
- Improving Education Governance.

The technology-based education system is implemented in every path of education in Indonesia. No exception, Non-Formal Education as a formal outside education that focuses on education in the community. Organizers of public education programs, as well as individuals (learning managers or citizens) diligently "publish" their knowledge on the web. There are several internet-based programs that are managed to fulfil learning processes such as blogs, social networks, and search engines (Google, Yahoo, MSN and others). Blogs are one feature that can be used to store and publish learning messages or information. Blogs also widen information in written form containing short or long writing.

Social networks are built through the use of ICT such as online discussion forums, and digital committees (such as Friendster, Facebook, Twitter and the like). Social networks

can be used as communication media and information on community education learning that connects managers, educators (tutors) and students (learning citizens). Google is a search engine in cyberspace to get knowledge and information. However, what is sought does not belong to a single authority, but belongs to the community as well, because the information can be accessed by the public by downloading (downloading) and scanning (upload). Search engines are used in finding various sources of information, knowledge, insight, ideas and even easily, just by writing down what keywords you want, then a split second can see the desired source of information. In addition, the world of information is also assisted with online video and streaming facilities, so that they can see the news or information accurately and clearly as if seeing first-hand the events or events that occur.

There is also a special website that provides online classes, where teachers or instructors easily prepare facilities for residents to learn such as: articles or teaching materials, face to face (teleconference) with instructors or teachers directly, chat or discussion directly, test by giving tests with certain questions, to monitor the development of learning citizens online. Website or online facilities such as Moodle, Edmodo, and so on.

Plus, now smartphone users with facilities such as Android and Windows programs that allow everyone to have unlimited software, just download and install. The usefulness of smartphones that can be dual or multifunctional, can be easily utilized by someone to find information and even share information, exchange ideas and discuss. The average smartphone camera is at least 5 megapixels and has a video call facility, so the level of mobilization and dynamics of a person is very high. Plus, the development of 4G networks that were previously 2G and 3G, the more vigorously publicized, of course the disadvantaged people even benefited from a high level of access speed.

The availability of laptops or netbooks and tablets is currently developing with various prices and specifications. Someone with a standard budgeting of two million rupiah is now able to enjoy computer facilities well, budgeting five hundred thousand rupiahs a person can enjoy the function of the tablet with a pretty good speed. Even in some educational institutions, these digital devices are familiarly used in the learning process. The PC (Portable Computer) device has begun to decrease, due to the high mobility of a person who now puts forward devices that are easy to carry everywhere, even now that the function of tablets and computers has been designed to be a single unit, one can present material anywhere.

In Indonesia, especially in big cities, e-literacy has been introduced at an early age. Computer technology as one of the learning aids has been used in pre-school education institutions. The development of the child concerned will be familiar with other digital technologies found in toys, household appliances, stationery, and others. That way, it is not difficult for them to understand how the internet works and use it. When they are teenagers, they begin to understand the importance of the meaning of information as an important factor in constructing knowledge. By itself the ability of information literacy will be

formed. This process will occur much faster and more effectively than the old generation.

## II. METHOD

This study aims at revealing the data and information about the challenges of ICT in community education. Qualitative approach in this study is intended to reveal empirical event and condition that can be experienced directly by the informants. This study is located in community education service of all girls' school that has already utilized ICT in the learning program. Primary data are collected from students, public figure and secondary data gathered from document. The research methods employed include interview, observation, and documentation.

## III. FINDINGS AND DISCUSSION

### A. Community Education Strategy in the Digital Era

One form of threat to developing countries such as Indonesia to compete in globalization is the existence of a digital divide phenomenon, namely a situation where there is a gap or gap between those who can access the internet through information technology infrastructure and those who are totally unreachable by the technology [2]. This is due to the low awareness and understanding of the Indonesian population about the importance of information and the utilization of information and communication technology in the development of an information culture towards the realization of the information society [3]. Digital divide in Indonesia can be minimized by proposing three stages of effective strategies to accelerate literacy improvements, namely, Creating Context (Demand Creation), Engaging Technology (Supply Providing), and Changing Behaviour (Behaviour Change).

First, it needs to be agreed that every human being in his daily life is concerned with positive and negative atmosphere. When the individual is in the "search" process triggered by one or even both of these situations, then the person concerned will be faced with a solution that places information as one of the determinants of solving the problems at hand. Most individuals have a mindset that the answers to each problem are in the "physical world" which is characterized by things that can be touched, such as 4M (money, men, materials, and machine / method), not a "virtual world" it has values such as "information regarding how to get money", "information regarding the existence of men who can be contacted", "information about how to get materials easily", or "information related to machine / methods that can be used to do something". Someone who has high e-literacy can think that information is part of the solution to a problem. How to create this context can be done in various ways that are tailored to the situation and conditions of the community. Examples are by giving examples of cases, sharing success stories, analogies of cases, and so on.

The second strategy in minimizing gaps is to involve technology. After, the community believes that information is a part of the answers to existing problems, then individuals will try to obtain information in various ways. At that time, access to infinite information offered in the value of technology is a

faster and more accurate offer. Need an accurate strategy that can invite the individual to have full awareness to use information and communication technology as a means of effective and efficient information that is his need. The strategies that need to be created are by carrying out activities such as creating appropriate technology that is easy to function, suggesting that using technology is easy and fun (using "get-up tular" or word of mouth), providing training services on how to use technology in various institutions training and courses, practicing tips for finding information quickly and precisely, opening the secret takbir of technological efficacy, etc. [4].

Finally, the third strategy in minimizing gaps is changing behaviour. Individual experience in undergoing the first and second stages will greatly influence the change in behaviour in this digital era. If, he succeeds in obtaining evidence that true information and use of ICT contributes to solving life's problems, then it will be a good experience that is valuable to him. Conversely, if the individual does not obtain evidence of the truth, then the experience will not affect changes in behaviour. At this stage, the strategies that can be done for those who are at this stage are by telling their success stories to others, trying various other digital technologies with a variety of information seeking approaches, and so on. In essence, people who have been "addicted" to information and technology will slowly and surely improve their quality of life.

Specifically UNESCO through "The International Commission on Education for the Twenty First Century" recommends 4 (four) educational objectives to face the 21st Century: (1) learning to know: learning to master science, (2) learning to do: learning to master skills, (3) learning to be: learning to develop themselves, and (4) learning to live together: learning to live in a community. The four pillars of educational goals according to UNESCO put forward a balance between knowledge, personality and social competence. In the 21st century all children need to be equipped with various competencies, including [5]:

- Life and work skills which include: (1) flexibility and adaptability, (2) initiative and self-regulation (independence), (3) social and cultural interaction, (4) productivity and accountability, and (5) leadership and responsibility answer.
- Learning and innovation skills, including: (1) critical thinking and problem solving, (2) communication and collaboration, (3) creativity and innovation.
- Information technology and media skills include: (1) information literacy, (2) media literacy and (3) ICT literacy.

All types of competencies, mostly embodied in the concept of character education. Therefore, it is very important to strengthen character education through all paths, types and levels of education in Indonesia. In addition, cooperation and support are needed, both from the government's environmental support and non-government support. The aim is none other than to strengthen the partnership network and the stability of ICT management, provide policy support, provide access to information related to employment, and provide opportunities for entrepreneurial information, or build institutional relations.

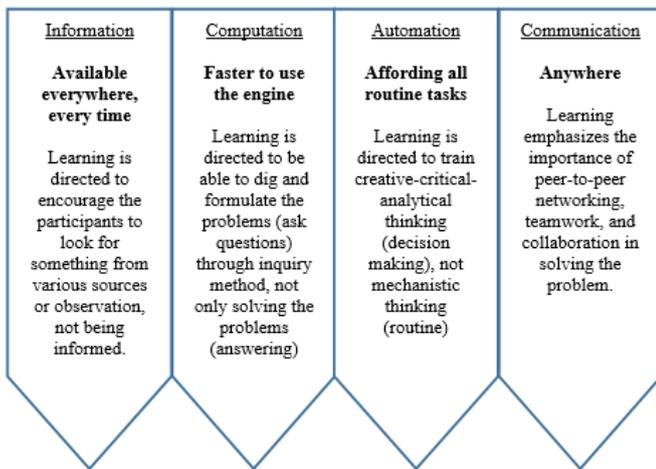


Fig. 2. 21st century learning paradigm [6].

Learning in the digital era will support a person to gain critical skills in thinking, have good communication, have good collaboration skills, and be creative. Learning strategies in the future will have various methods. The designed learning method must be adapted to the needs of the learning community.

Information technology-based learning will become the trend of future learning innovations. This is supported by internet and wireless hardware and software devices in an increasingly mushrooming community. Some descriptions of considerations that can be done so that people can adjust themselves in the digital era, namely by getting used to obtaining information by contributing to learning in the online environment [7]. The following are ways that can be done as follows.

- Forming a local community that supports increased knowledge of learning citizens. For example, by sharing information regarding the local situation in the community which will then encourage learning citizens to discuss and share experiences. The learning community can utilize digital media so that the relationships that exist can be anywhere and anytime. Learning like this will encourage someone's critical thinking that indirectly leads learning citizens to provide different perspectives and negotiate to get answers to every problem in the surrounding environment.
- Building a structure that allows learning citizens to choose their own direction of interest. This can be built by providing various articles or topics that will be used as analytical material for learning citizens. Analysis of the results of learning citizens can be reported back in the online class so they can provide input.
- Allow citizens to learn to develop certain content. This can be done by compiling an exploratory study report, the presentation of the practice that has been carried out, and the results of action research. The design of a learning environment that will give every learning citizen the opportunity to explore his knowledge. The

constructivist learning environment online will encourage learning citizens to share knowledge, experience, opinions and initiatives by drawing across their local communication boundaries.

- Ensure that learning citizens reflect and have the opportunity to share the results of the learning process. Learning residents need to interact with other communities to help shape their learning construction.

### B. Development of a Blended Learning Approach in Community Education

The strategy of developing web-based learning systems has been widely known and utilized. One of them is Blended Learning, which has often been applied in public education. Blended Learning is the use of the internet that combines distance learning (virtual) and face-to-face (conventional). Some of the material is delivered through the internet and partly through face-to-face, complementary functions. Teachers / Instructors can give instructions to learning citizens to learn subject matter via the internet. Learning residents are also given direction to find other sources of relevant sites. The step development of Blended Learning is planning, designing and developing, implementing, reviewing (evaluating), and improving [8].

In face to face, learning citizens and Teachers / Instructors have more discussion about the material findings that have been learned through the internet. The implementation, internet material developed and adopted into conventional education or conventional learning was adopted into an online model with Blended Learning system (a combination of online source and face to face) aimed at expanding access to learning, streamlining costs and shortening face to face in learning.

Previous studies show that the learning process undertaken by learning residents is supported by several aspects, namely family assistance, collaborative discussions with local communities, and self-taught self-learning. Morrow and Bagnall's study results describe that support from local communities contributes significantly [8]. The way they interact in the local environment by utilizing digital media is an important element for someone in completing their course studies. The digital environment provides technical things from skills that are not delivered in the classroom. The three motivations that move someone to join the online community are as follows.

- The need to handle technical matters that are in online learning.
- The need to discuss textual context in a digital environment.
- The need to explore and share their knowledge with the surrounding community.

Interaction in a digital environment allows for the increased capacity of learning citizens and teachers / instructors [9]. Citizens learn to gain other knowledge from external sources that will enrich their knowledge regarding what they want to learn. Even the teacher / instructor, he developed his knowledge by connecting various connections between theory

and practice. The design of the material will add information to the instructor which is then packaged in an online material.

Management of information technology-based learning using blended learning strategies has the following basic thinking.

- Able to build the independence of learning citizens who are mostly teenagers or adults in the form of both face-to-face and virtual learning assignments.
- Learning interactions can be carried out directly in several meetings and indirectly with the help of Teachers / Instructors in tutorial forums so that learning interactions can always be pursued.
- Learning resources are materials that are prepared according to the needs of the learning community and can be obtained from anywhere (multi access).
- In accordance with the background and the need for access to learning so that it is not only taken through face to face which is limited in time and space.
- Developed in an integrated package with a learning system that supports each other between conventional learning and virtual learning, so that learning citizens are given material treats in accordance with the learning package proportionally.
- Improve efficiency in the delivery of learning material through electronic media and the internet.

Learning approach by utilizing digital technology with a blended learning model, at least has 4 principles, including:

- Constructivism provides students with opportunities to build new knowledge. They are required to actively increase their own knowledge.
- Constructionism which states that learning will be effective, if we can produce something or we can absorb ideas from what we learn. Not only that but how we share that knowledge with others.
- Social constructivism that requires us to learn so that we can develop a culture that exists in a group, especially learning culture so that collaboration occurs in learning.
- Connected and separated that we must try to defend our own opinions but not close the possibility of accepting ideas from others. describes the framework for building a learning community with a blended learning approach with the following considerations [10].

1) *Assessing community needs:* Assessment is carried out not only about who members need to join, but more in-depth assessment of what specific needs can be met in an online community that is designed. The questions that must be asked include: to what extent are the media used today meet the needs of the community? What is the level of user satisfaction with the media used? What will be the added value of communication in computer media? Studies that can be reviewed earlier are summarized in the following factors that should be explored during the needs assessment process.

TABLE I. CONSIDERATION FACTORS IN NEEDS ASSESSMENT

<b>Community Level</b>	Existing social connections The media used today Available resources
<b>User Level (Individual)</b>	The level of comfort with technology Media preferences Previous online experience The ability of various media Supporting factors and inhibitors of online participation

2) *Usability considerations:* The dimensions of usefulness in community development relate to the choice of technology used. In designing appropriate technology to support the learning community, consider 3 main variables, namely first, user and community characteristics; two, learning objectives and tasks; and three, technological capabilities. These three variables need optimal alignment to obtain technology that is appropriate to the needs of the community.

3) *Reliability considerations:* The technology created needs to connect teachers / instructors / tutors and learning citizens to be able to interact. In addition, there is a need for online participation guidelines, which determine whether participation is carried out as an obligation or voluntary. A teacher / instructor needs to continuously monitor the progress of the learning community so that the interaction takes place continuously with the improvement of quality in the community.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

ICT approach in education has become the solution to minimize the problem on the information and learning access which is currently limited. ICT provides flexibility for society to find various information and interaction flexibility with others in virtual space, as well as share information and discussion through virtual forum in solving the problems encountered. The biggest challenge is when the society is still unable to use ICT wisely, so it needs a strategy to solve this problem. Literacy in facing digitizing needs to be built by the society through demand creation, supply providing, and behaviour change.

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