

# CHAPTER I

## INTRODUCTION

This chapter draws general information of study which covers explanation about background of the study, research questions, purpose of the study, scope of the study, the significance of study, definitions of key terms and state of the arts.

### 1.1 Background of Study

Nowdays, everything has changed and developed into the era of industrial revolution 4.0. The Industrial Revolution 4.0 is a phenomenon that collaborates cyber technology and automation technology. The Industrial Revolution 4.0 is also known as the "cyber physical system". The concept of implementation is centered on automation. Assisted by information technology in the application process, the involvement of human labor in the process can be reduced. In the Industrial Revolution 4.0, there are at least five technologies that are the main pillars in developing a digital-ready industry, namely: Internet of Things, Big Data, Artificial Intelligence, Cloud Computing and Additive Manufacturing (kominfo, 2020).

According to CNBC Indonesia (2019), The Industrial Revolution 4.0 era was first announced by the executive of the WEF in Geneva, Klaus Schwab was the person who first put the term to the public in 2016 in his book "Fourth Industrial Revolution" at the Davos meeting in the same year. Schwab argues, "that a technological revolution is underway and the boundaries between physical, digital and biological. Simply, the fourth industrial revolution will refer to how technologies such as artificial intelligence (AI), autonomous vehicles, and the internet affect people's lives".

The development of industrial revolution 4.0 does not only have an impact on the industrial sector, but also on all important sectors of human life, including education. The system of education is going through some massive changes. Changes occur from various forms of supporting facilities for learning activities to changes in habits made by teachers and students in the way they think and doing their daily activities. Those all are happening now because of the demands of the current era.

There are pertinent skills proposed by McLoughlin and Lee (2008) and Redecker and Punie (2013), to face the challenges of industrial 4.0. Those are personalization, collaboration, communication, informal learning, productivity and content creation are central to the competencies and skills learners are expected to develop and the way in which these skills are taught. In addition, personal skills (initiative, resilience, responsibility, risk-taking and creativity), social skills (teamwork, networking, empathy and compassion) and learning skills (managing, organizing, metacognitive skills and 'failing forward' or altering perceptions of and response to failure) are vital to peak performance in the twenty-first century workplace (Learnovation, 2009).

In line with that, UNESCO also provides a response to the current development of the industrial revolution 4.0, which has its own impact on the system of education. According to UNESCO, in an effort to improve the quality of a nation, it can be done through improving the quality of education. Sigit (2019), quoting from UNESCO (United Nations, Educational, Scientific and Cultural Organization) which is engaged in education, knowledge and culture has declared four pillars of education, those are: (1) learning to know, (2) learning to

do, (3) learning to be, and (4) learn to live together. The four pillars are synergistically expected to shape and build the mindset of education in Indonesia.

Furthermore in the concept of the 4 pillars of education belong to UNESCO, Scott (2015), describes it from various sources as follows: **First**, Learning to Know: Identified core subjects include: Grammar, Reading or Language Arts; World Languages; Art; Mathematics; Economics; Science; Geography; History; and Government and Civics, with a balance between education in technical and natural science subjects and culture and humanities. **Second**, Learning to Do: these skills emphasize active learning such as Critical Thinkig, Problem Solving, Communication and Collaboration, Creativity and Innovation, Information Media and Technology Literacy, ICT Literacy. **Third**, Learning to Be: A significant body of literature has emerged on preparing youth for life in the twenty-first century, such as Social and Cross Culture Skills, Personal Responsibility Self-Regulation and Initiative, Metacognitive Skills, Sense-Making Skills, Entrepreneurial Thinking Skills, Learning-To-Learn and Habits of Lifelong Learning. **Fourth**, Learning to Life Together: Shared learning gives learners an opportunity to engage in discussion, such as Seek and Value Diversity, Teamwork and Interconnectedness, Civic and Digital Citizenship, Global Competence, Intercultural Competence.

Then, how about the response of education in Indonesia?. Indonesian education responded through the Ministry of Education and Culture with a positive and open attitude. In a recent face-to-face discussion conducted by the Minister of Education and Culture Nadiem with the President of the Republic of Indonesia Joko Widodo on the Youtube channel Presidential Secretariat (2021), which was displayed openly, he gave a very interesting response. In the

conversation, there were three important points that were stated by the Ministry of Education and Culture. The **first** program, about Digital Government or school digitization. **Second**, about the Guru Penggerak. **Third**, regarding the Transformation of BOSS funds.

Regarding the first point about Digital Government or School Digitalization, the government will take steps forward in realizing the program. First, the Ministry of Education and Culture will work with Ministry of Communication and Informatics KOMINFO to prioritize schools in Indonesia to have internet access. Second, distributing devices such as Projectors, Laptops, WIFI, to schools which will be implemented within the next 1 to 2 years. Third, is the Big Data program from each schools to control schools, acceleration of information and assessment.

As what researcher has studied from various sources toward the discussions about how education especially in Indonesia, must be improved according to the needs of the current era. This aims to make our students able to compete and become part of a competitive global society.

Therefore, researcher wants to take part in the development of education in the current global era by implementing one of the four pillars of Unesco education in the form of Learning to Do. From the various examples of skills contained in Learning to Do, the researcher also takes one skill only which is focused on digital skills literacy which will later be integrated into English Learning Materials for Senior High School level .

Digital literacy skill is one of the skills that is very closely related to the mobility of individuals, both teachers and students in the current era of the industrial revolution 4.0. On the other hand, the world is currently experiencing a

COVID-19 pandemic. The epidemic greatly affected various sectors that are fundamental to the lives of the world's people, such as the economic, social and educational sectors. Related to this, on the orders of the Mr President, the Ministry of Domestic Affairs issued a circular no. 15 of 2021 concerning PPKM regulations (Enforcement of Restrictions on Community Activities). Due to the limited space for human physical movement in their daily activities, the impact that occurs in the education sector is limited or changing physical educational activities between teachers and students into digital or online educational activities without meeting. Hence, teachers are required to think creatively and effectively in providing learning material to teaching it, so that learning can run well and efficiently.

Materials play a central role in language teaching. Garton and Graves (2014), stated that materials are considered as the heart of teaching and learning process. Generally, it is believed that materials which are chosen selectively and used effectively will improve the quality of teaching and learning process. They can make the teachers to be easier in doing their jobs, and lead students to a higher level of understanding in learning. Ocak. G, Ozcalisan. H, & Kuru. N (2010), argue that materials make learning more enjoyable and understandable. Besides, materials make time allocated for learning pass effectively, and increase teaching quality as well. By its vital role, it is no doubt that materials should be put on the first priority in conducting teaching and learning process since they are fundamental in teaching and learning process (Garton & Graves, 2014).

Beside, English and Digital world have become essential literacy skills for a huge amount of non-native English speakers to ensure full participation in the mobility of society. The opportunities that technology presents for participating in

modern life and for English language acquisition, English Language Learners or ELLs need to develop digital literacy skills. These includes the use of basic digital skills, the ability to create and communicate digital information, the ability to find and evaluate information online, and the ability to solve problems in technology-rich environments. Kathy (2018), suggested, teachers and program directors need to integrate opportunities to develop digital literacies into lessons, curricula, and programs. They need to provide supports at every level, so that ELLs develop digital literacies along with English language and other skills required for the workforce education, their communities, and family life. Knowledge of and beliefs about digital literacies must continue to evolve as digital literacies evolve. In the world of digital literacies, everyone is a learner.

In the last three years, numerous researchers have been examined the infusion of Digital Literacy as a breakthrough method or supporting facility in language teaching and learning. The first study was conducted by Nia Kurniawati, Elis Homsini Maolida and Agung Ginanjar Anjaniputra (2018), In their descriptive qualitative study, their aims is to investigated the utilization of digital literacy in the EFL classroom of senior high school teachers from two generations (digital immigrant and digital native) and their students' responses to the use of digital media in the English classroom in Indonesia. Three instruments were utilized including classroom observations, questionnaires, and interviews. Following ACOT's (Apple Classroom of Tomorrow) framework, the findings show that both teachers were at the adaptation stage in terms of digital literacy and this was reflected on the utilization of digital media in assisting students' learning. Yet, the digital-immigrant teacher appeared to be practically more adept in the implementation of digital media. As for the second issue, the students

responded positively to the use of digital technology by the teachers to make English class more fun and comprehensible. However, when it comes to an ideal teacher, the students still considered good characters as the main criteria for an ideal teacher. Technology does support teachers in delivering the materials, but the way they behave and treat the students still also plays crucial part in maintaining a good relationship between teachers and students. The results show that the English teachers need to develop their digital literacy to keep up with the current demand to be professional English teachers in the digital era.

The second study was conducted by Oktavian Mantiri<sup>1</sup>, Garth K. Hibbert and Jeanette Jacobs (2019), they attempt to define digital literacy and the benefits it provides to both the English language learner (ELL) and the English language instructor. This study also explore some of the misconceptions surrounding digital literacy and try to show that there is a need for basic training in this area for all language educators. The challenges faced by many educators are trying to develop digitally literate to students. As ESL teachers it is our duty to make digital literacy a focal point of our teaching plans. Computer technology has made life easier by allowing students to submit their assignments via email or by using ebooks instead of paper textbooks, but educators have only scratched the its surface. Technology also recommends for teachers to: Be adaptable towards technology use; Be open-minded and willing to learn from the students, as the digital natives; Be up-to-date with technological advancements.

The another study was conducted by Pornnicha Weerakanto (2019), in his descriptive study aims to assess the digital literacies of English language in-service teachers in Thailand and explore their perceptions of technology enhanced language teaching (TELT) in order to see whether, and the extent to which, that

call has been heard. The study employed mixed research methods to discover how teachers and students use digital technologies for academic and non-academic purposes and find out their perspectives towards technology integration into curricula, including application. The findings were based on teacher and student surveys, classroom observations, teacher interviews, student focus groups, and artifacts. More specifically, the cases of three teachers were explored in-depth to gain insight into the general state of digital literacy skills, using TPACK-DLT frameworks to analyze their survey responses and observing their classroom practices. The overall results show that the concept of digital literacies was not clearly understood by the teachers. As teachers recognized their own digital competences were lower than students, they requested the university to offer technological training, faculty support, and a technology mentor. Overall, the findings may raise awareness of practitioners, researchers, and policy makers towards their responsibility to gain a deeper understanding of digital literacies and to become digitally literate professionals in order to develop students' digital literacy skills, creativity, and critical thinking by becoming more comfortable with new learning platforms in the era of emerging digital technologies and ICTs.

The last study was conducted by Bambang Widi Pratolo and Hana Amri Solikhati (2020), their aim to reach: (1) to investigate the implement of digital literacy in a private junior high school Temanggung; (2) to identify teachers' attitude in practicing digital literacy, (3) to explore the challenges, and (4) how to cope with them. Their study involved two EFL teachers who were regarded as millennial teachers and capable to utilize technology. A qualitative research was used to explore the real practice of digital literacy. The excerpts were obtained through a semi structured interview and classroom observation. The result



indicated that computer and smartphone were used as digital devices. In practicing them, teachers showed positive attitudes by considering the syllabus as a core, understanding a teacher's position, developing effective learning, using multiple literacy and enhancing the four language skills. Meanwhile lack of technology, students' background, lack of time and limited budgeting are considered as obstacles in implementing digital literacy.

Regarding the previous researches of infusing Digital Literacy into educational area, this present study intended to bridge the gap in designing the Digital Literacy based English Learning Materials for grade X of Senior High School in order to fulfill government plan for the Development and Implementation of Digital Literacy in Indonesia; which include developing and implementing Information Literacy, Media Literacy and ICT Literacy based English Materials as an essential part of the learning materials in Senior high school level.

Furthermore, as the program that was launched by Ministry of Education and Culture (2017), about *Gerakan Literasi Nasional* (National Literacy Movement), they explain that in digital literacy development can be encouraged and carried out in three areas; school, family, and community. Regarding to digital literacy in schools, which include students, teachers, education staff, and principals, they are expected to have the ability to access, understand, and use digital media, communication tools, and networks. With this ability they can create new information and disseminate it wisely. Besides being able to master the basics of computers, the internet, productive programs, as well as the security and confidentiality of an application, students are also expected to have a digital lifestyle so that all their daily activities cannot be separated from the effective and

efficient mindset and behavior of digital society, which is also in line with the (ATC21S, 2015; P21 Framework, 2019).

For this reason, digital literacy needs to be included as a structured learning mechanism in the curriculum, or at least integrated with the learning process. In addition, the use of digital literacy is believed to be able to provide creative, innovative, and contemporary learning innovations, (Afandi, Tulus and Rachmi, 2016).

From the background that has been described about the changes in progress and demands of the era, the author is encouraged to take action to support and take part in the development of education, especially in English subject. This is done so that the Indonesian education system becomes better and produces students who are ready to become part of the world community in the Industrial Revolution 4.0 Era.

## **1.2 Research Questions**

In this study, the researcher composed a main research question with three sub questions which are mentioned in following part.

Main Question:

How are digital literacy skills – information literacy, media literacy and ICT literacy integrated English learning materials for grade X of Senior High School designed?

Sub questions:

1. To what extent do the existing English learning materials for grade X of Senior High School accommodate Digital Literacy skills - Information Literacy, Media Literacy, and ICT literacy ?

2. How are the digital literacy skills – information literacy, media literacy and ICT literacy integrated in English learning materials for grade X of Senior High School designed?
3. How are the design of digital literacy skills – information literacy, media literacy and ICT literacy integrated English learning materials for grade X of Senior High School?

### **1.3 Purposes of Study**

In line with the research questions, this study presents the purposes of the research, which are mentioned in the following part.

The main purpose:

To design digital literacy skills – information literacy, media literacy and ICT literacy, integrated English learning materials for grade X of Senior High School

The Sub-purposes of this present research are

1. To analyse the digital literacy skills – information literacy, media literacy and ICT literacy integrated in the existing English learning materials for grade X of Senior High School.
2. To describe the procedure of developing process of digital literacy skills – information literacy, media literacy and ICT literacy integrated English learning Materials for grade X of Senior High School designed.
3. To design digital literacy skills – information literacy, media literacy and ICT literacy integrated English learning materials for grade X of Senior High School.

## 1.4 Scope of Study

Based on the problems identified above, this study will be limited on developing and designing digital literacy skills integrated in English Learning Materials for grade X in the odd semester of four different Senior High Schools in Boyolali city Central Java. The materials developed are in the form of handout materials in each meeting. Thus, DDR (Design and Development Research) method is used in this study. There are five steps in implementing DDR in this study, need analysis, developing course grid, developing first draft materials, Evaluation by the experts, and writing final draft of the materials.. Further phases of DDR would be administered in the next of **Chapter III**.

## 1.5 Significance of Study

**Theoretically**, the researcher hopes this study will lead to the deeper understanding in designing English Learning Materials based on Digital Literacy for grade X of Senior High Schools as a part of Digital Literacy integration with education in the form of curriculum, syllabus or materials. The result of this study expected to contribute Digital Literacy based learning materials development for English subject in order to achieve the world education system aims proposed by UNESCO.

**Practically**, this research is expected to be able to implement one of the four pillars of UNESCO, namely the Learning to Do pillar. In the Learning to Do pillar, researcher takes Digital Literacy Competencies which will later be emphasized into three focus student skills: Information Literacy, Media Literacy

and ICT literacy. After all, this whole result of the study hopefully can be useful for further teaching and learning through the infusion of Digital Literacy for English subject for grade X in the first semester in Senior High School level.

### 1.6. Definition of Key Terms

To avoid misinterpretation, the technical terms found throughout this study are operationally defined as follows:

**1. Digital Literacy skills** is defined as the skills associated with using technology to enable users to find, evaluate, organize, create, and communicate information, and the ability to use those skills to solve problems in technology-rich environments.

**a. Information Literacy**, refers to the capacity to make links between ‘bits’ of information. Understand facts, statistical images, data; group the relevance that is relevant to what the student is looking for.

**b. Media Literacy**, it can be include a variety of media, such as static text, animated text, sound, still graphics and video. These multimedia elements can be combined in various ways and can appear automatically or be accessed by the reader making a deliberate selection.

**c. ICT Literacy**, interpersonal communication can be on a one-to-one basis, one-to-many or many-to-many, they can take place in real time (synchronous) or with a delay (asynchronous). The acronym IT (information technology) has now been extended to ICT (information and communication technology). Communications can take several forms, e-mail, bulletin boards, discussion lists, chat rooms, icq, MUDs and MOOs, and video conferencing.

2. **Learning Materials** According to Tomlinson (2011), materials are anything which is used by teachers or learners to facilitate the learning of a language. Addition, Meraji & Zamanian (2014), stated that language learning materials are the primary sources of information that help second language learners in the path of second/foreign language learning.
3. **Handout** is very concise learning materials and these teaching materials are sourced from some relevant literature on basic competencies and the main material taught to students (Andi Prastowo, 2011: 79). In addition, handout teaching materials are given to students to make it easier for them to participate in the learning process. Thus, this teaching material is not an expensive teaching material but is economical and practical.
4. **P21** stands for Partnership for 21st Century Skill, (P21, 2019). It is a national organization that advocates for the integration of skills that are critically needed in the 21st Century. It proposed a Framework for 21st Century Learning in 2009 for students' success in the new global economy. This Framework describes the skills, knowledge and expertise students must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise and literacies.
5. **ATC21S** stands for Assessment and Teaching of 21st Century Skills (Griffin, McGaw, and Care, 2012). It is one of the largest research ventures currently underway by international collaboration among academics, governments and three major technology companies is to empower students with the right skills to succeed in the 21st Century workplace. It is a system enabling a formative assessment of Collaborative Problem Solving. It has been designed to support

the development of social and cognitive skills needed to become a good collaborative problem solver.

### **1.7 State of The Arts**

There are numerous researches have been conducted related to English Learning Materials for Senior High School but the study of designing English Learning Materials which is embracing the integration of Digital literacy competences from various national benchmark is infrequent. Moreover, nowadays Digital Literacy becomes a preference and facility for students and teachers to achieve learning goals in the process of teaching and learning activities. This research provide the novelty in which infusing Digital Literacy competences in the Learning Materials design of English subject in which not only being used for personal and teaching purposes but also helping students to enhance their literacy competences in line with their development need as part of global society in the era of industrial revolution 4.0. Thus, this research focusing on the learning materials of English subject for grade X of Senior High School.