

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Research

The high increment of technology has been influencing people to shift their activities digitally to make them efficient. Based on the survey by APJII, Internet use was highly rocketing from 2017 to 2022. This year, 210.026.769 Indonesian citizens have connected to the internet in their daily life (APJI, 2022). This phenomenon could not be avoided that all life sectors are affected to shift digitally, especially education. Therefore, digital competence is a highlight of the 21st-century skills that should be mastered in education sectors for teachers and students. In most instances, "digital competence" refers to a collection of skills, encompassing technical, operational, intellectual, and psychosocial factors. It takes both procedural and cognitive abilities to use a computer software, for example (Region, 2020). One example of a cognitive skill that must be possessed is the capability of instinctually decrypting or "reading" visual signals that are embedded in graphical user interfaces (GUIs). Additionally, examples of procedural skills are the processing of files and the modification of visual pictures. Similarly, searching for information on the internet is regarded to be a blend of cognitive abilities and procedural abilities (working with search engines) (data estimation, sorting false and biased data, and also distinguishing between relevant and non-crucial data) (Ferrari et al., 2013). It is commonly acknowledged that in order to have fruitful conversations with other people, one must possess a certain set of social and emotional skills. Digital competence was conceived of as a "survival skill" within the context of a growing addiction to digital working and learning environments. This essential skill enables users to accomplish sophisticated digital tasks in an effective way, and it was conceived of as a "survival skill" in this context. This was done in light of the concept that digital competence is an essential ability that assists users in surviving in today's world (Liu et al., 2020).

It is a complete and required reason for vocational high school teachers as the doer who deliver new knowledge to the students to master digital competence, especially for the teaching-learning process in vocational education. With a great

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demand for balancing between behaviorist and constructivist pedagogy, vocational high school teachers must improve their capacity for digital competence (Sudira, 2019). During the pandemic time from 2019 to the present, the teacher got a new learn how important digital competence is (Cattaneo et al., 2022a). It is reflected from the previous study that digital competence is a continuing skill that should be mastered (Mehrvarz et al., 2021). Moreover, the prior study stated that vocational school teachers' digital competence in Indonesia has been at intermediate levels (Saripudin et al., 2021). Therefore, the authors are curious to focus and research more on vocational high school teachers' advanced digital competence (ADC) to give an overview and analyze what should be improved for their advanced digital competence. The importance of this digital competence has actually been a concern since 1997, and the European Commission then conducted research on the digital competence framework in 2006. According to the framework from European Commission, digital competence is closely related to industrial demands and the graduates to enter the working world (Martin & Grudziecki, 2006a). Hence, it is presently crucial to focus on the development of digital competence in vocational education.

Besides, the framework of lifelong learning published by the European Commission urges every human to elevate their life skills that one of which is digital competence. Furthermore, along with the program of reimagining the future of education, teachers must be capable of reaching sustainable development goal number four, quality education. The goals of quality education are now focused on strengthening digital education (Asongu et al., 2019). The working skill demands are developing year by year. There are lots of skills that should be possessed by workers to survive in digital working, such as social skills, technical skills, and emotional skills. The working world is closely related to technical skill, which is usually trained in vocational education. The new skill demands in the industry create new skill demands for students and graduates. It is why vocational education must improve its learning quality through the teachers to prepare the graduates as future workers to possess many skills especially needed in the working world (Amornvuthivorn, 2016; Gunadi et al., 2020; Toner, 2011).

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Furthermore, the COVID-19 pandemic necessitated an immediate transition to online classes as a mode of instruction; more specifically, experimental courses needed to be rethought in order to achieve the highest possible academic performance while adhering to the constraints that were in place (Chans et al., 2022). Moreover, vocational high school teachers pushed themselves to shift the approach digitally, which is mainly needed to conduct a practice (Raman et al., 2021). It raises the topic of how teachers could integrate the teaching and learning process digitally, both in practicum and academics. Not only does COVID-19 influence the utilization of digital equipment in teaching, but also the rocketing developments and innovations of technology in education (Et al., 2021; Hunter et al., 2020; Yildiz, 2020). The teachers' professional competence should be along with this rapid development to figure that the teacher has a mature skill for carrying out a teaching process. Those matured skills include attitude, understanding, and competence as an educator.

The previous studies stated that one of the important skills in work is digital skills. Reasonably, teachers in vocational education must start to concern with the digital tool's development or media in the teaching process and introduce to the students about the working world demands. It is not a secret that the teaching process should elevate rapidly and along with the teachers' digital competence. As a further matter, this study focuses on assessing the teachers' digital competence in vocational high schools.

## **1.2 Research Questions**

The following lists were structured as the research questions of this thesis research:

1. How are the global trends of digital competence in vocational high school teachers and the vocational high school teachers' digital competences based on the literature review?
2. What are the advanced digital competence components that have been mastered by vocational high school teachers?

### **1.3 Research Objectives**

The aims of this study consist of the following:

1. To analyze the emerging trends of the digital competence in vocational high school teachers based on reviews method.
2. To present a description of the mastered advanced digital competence components by the vocational high school teachers.

### **1.4 Significance of the Research**

In today's e-permeated society, which is also becoming increasingly unpredictable and uncertain, "digital competence" is now becoming not simply a vital factor in facilitating involvement in education, as well as employment, and other aspects of social life, but also a requirement. This is because "digital competence" is becoming not only a key factor in enabling participation in education, as well as employment, and other aspects of social life. The skill of teachers' digital competence also impacts and motivates the students' perspective that they should implement digital competencies daily. Furthermore, if educators have good skills in digital competencies, the students will also be impacted, and it has been one of the solutions to the problem of graduate skills quality in the working world.

### **1.5 Thesis Structure Organizations**

This thesis proposal consists of five chapters. The following explanations will describe each chapter of this thesis: the first chapter discusses the background of the research, research questions, objectives of the research, research aims, significance of the research, and lastly about, thesis structure organizations.

In the next chapter, the author will portray the theories relevant to this research and provide a brief overview of the prior significant findings of the study. The third chapter will further explain the research method generally, such as research designs, participants of the research, research instruments, research procedures, and data analysis carried out by the author. Furthermore, the fourth chapter deeply analyzes the important results and discussion of vocational high school teachers' digital competence. Lastly, the fifth chapter of this thesis will sum up the results of the

research, give some comparisons with the previous studies, and also describe the implication and recommendations related to this research.