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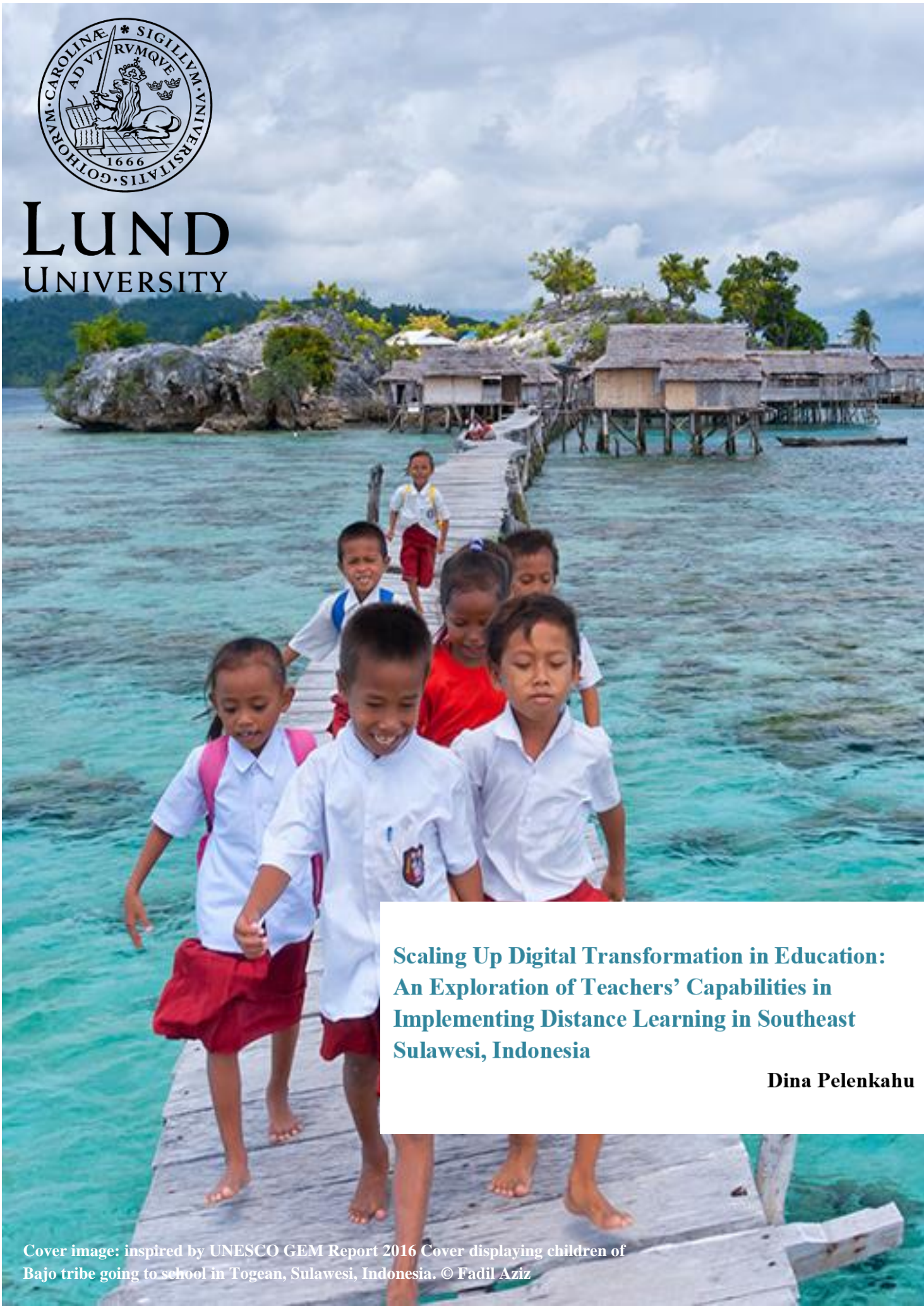
## **Scaling Up Digital Transformation in Education**

**An Exploration of Teachers' Capabilities in Implementing Distance Learning  
in Southeast Sulawesi, Indonesia**

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**Scaling Up Digital Transformation in Education:  
An Exploration of Teachers' Capabilities in  
Implementing Distance Learning in Southeast  
Sulawesi, Indonesia**

**Dina Pelenkahu**

Cover image: inspired by UNESCO GEM Report 2016 Cover displaying children of Bajo tribe going to school in Togeang, Sulawesi, Indonesia. © Fadil Aziz

## Abstract

Due to the pandemic, teachers are forced to implement distance learning and equipped themselves with digital skills to accommodate the sudden shift from instructional classroom activities to digital and more innovative teaching and learning practices. To ensure that teachers can adapt and innovate during this disrupted era, an exploration of teachers' experiences, challenges, and opportunities for quality training and capacity building during the distance education implementation need to be unpacked. This research thus has three empirical objectives: first, to unpack teachers' challenges in implementing distance learning in Southeast Sulawesi, Indonesia; second, to explore how they perceive their capabilities and tackle challenges of digital transformation in education; and lastly, to examine contributing factors that influence teachers' capabilities in implementing effective digital transformation in education. To achieve these objectives, this research reflected the experience of teachers by using qualitative methodology. Semi-structured interviews were conducted with 10 public senior high school teachers from 3 different regions in Southeast Sulawesi. Using the Capability Approach, this research analysed the teachers' experiences by combining key elements from Nussbaum's list of central capabilities and Sen's instrumental freedoms. The presented results highlighted teachers' challenges in personal, technological, and pedagogical aspects. The results showed how teachers reinforce their resources and instrumental freedoms to foster their capability and enable the exploration of distance learning. Although, the minimum existence of institutional support affects teachers' capabilities to achieve functionings in addressing their digital skills and literacy to adapt to the unprecedented circumstances of distance learning. The consideration of teachers' agency and capabilities highlighted the need to facilitate their participatory rights to exercise educational freedoms in implementing distance learning and to ensure the effective implementation of digital transformation in education.

*Key words: Distance learning, digital transformation, teachers' experiences, capability approach.*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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## **List of Acronyms and Abbreviations**

1. BPS - *Badan Pusat Statistik*/Central Bureau of Statistics
2. EdTech - Education Technology
3. GoI - Government of Indonesia
4. ICT - Information and Communication Technology
5. MoEC- Ministry of Education and Culture
6. MoRA - Ministry of Religious Affairs
7. MoH - Minister of Health
8. MoHA - Ministry of Home Affairs
9. *PembaTIK* - *Pembelajaran berbasis TIK*/ICT-based Learning
10. SDGs – Sustainable Development Goals
11. TIK – *Teknologi Informasi dan Komunikasi*/ Information and Communication Technology (ICT)

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# 1. Introduction

## 1.1. Study Background

*“As teachers are a fundamental condition for guaranteeing quality education, teachers and educators should be empowered, adequately recruited and remunerated, motivated, professionally qualified, and supported within well-resourced, efficient and effectively governed systems.”*

Education 2030 Framework for Action ([UNESCO, 2016: 54](#))

The rapid spread of the Covid-19 pandemic has disrupted Indonesia’s development in the education sector. The closure of schools poses a significant risk in which around sixty million students are affected ([Badan Pusat Statistik, 2020](#)). They are unable to conduct face-to-face interaction and have normal learning activities in physical classrooms ([Azzahra, 2021](#)). UNESCO estimated that approximately 91.3% or around 1.5 billion students enrolled worldwide are experiencing school closures ([UNESCO, 2021](#)). In addition, the issue of connectivity and unequal access to devices excluded at least one-third of students from pursuing digital education ([Ibid](#)). As the pandemic escalated, throughout 2019 until the year-end school semester of 2021, the Indonesian Ministry of Education and Culture (MoEC) also opted for school closures and encouraged distance learning through the issuance of the Joint Decision of the Ministers from MoEC, Minister of Religious Affairs (MoRA), Minister of Health (MoH), and Ministry of Home Affairs (MoHA) on Guidance to Learning 2020/2021 during COVID-19 Pandemic ([Kemdikbud, 2021](#)). The government through the Ministry of Education and Culture provides instructions that learning is carried out remotely by utilising information, communication, and technology (ICT). The mandate is stated in the Ministerial Decree of the Minister of Education and Culture Number 719 of 2020 on the Emergency Curriculum which mainly provides guidance regarding several learning action plans that can be taken during the distance learning implementation ([Ersan, 2020](#)). The MoRA which oversees Islamic schools also followed suit on the regulation of distance learning in *madrasahs*<sup>1</sup> and *pesantren*<sup>2</sup> ([Azzahra, 2021](#)). Teachers and students who are the most

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<sup>1</sup> *Madrasah* is the term for a secondary Islamic school.

<sup>2</sup> *Pesantren* is the term for Islamic boarding school.



affected are forced to adapt the way they learn and teach to suit the nature of distance learning.

Adapting to the challenges of school closures due to the pandemic, the Indonesian educational system is forced to do fundamental changes. The closure of schools and distance learning have pushed the urgency of incorporating digital transformation into educational processes. Over the decades, information, communication, and technology (ICT) in education has been allowing new types of learning environments and is believed to be able to overcome many of the educational barriers ([Koponen et al, 2011](#); [Koh et al, 2018](#)). However, the sudden shift in teaching methods from face-to-face interaction in classrooms to emergency distance learning is not an easy job for teachers considering the limitation of their preparation and the different adaptability of each teacher ([UNICEF, et.al, 2021](#)). Hence, this exposes the urgent need for teacher capacity building on ICT in education to enhance their digital skills.

Teachers are the key successes to the digital transformation of education. The presence of adaptive, dynamic, creative, and innovative teachers are highly needed as teachers are not only required to teach their subject but also be able to stimulate critical thinking in students which are prominently imperative to the improvement of learning outcomes and avoidance of learning loss ([Saragih & Zuhri, 2019](#)). For the achievement of the 2030 target under the Sustainable Development Goal (SDG) 4, well-trained teachers, active learning and participatory techniques, and adequate learning resources and materials are identified as key elements necessary for quality education ([UNESCO, 2009](#)). In the context of the pandemic, equipping teachers with digital and pedagogical skills is one of the fundamental tools for the development of sustainable and diverse use of ICT and also to build a more resilient teachers workforce ([UNESCO, 2021](#); [UNICEF, 2020](#)). Studies insist on highlighting the need for teachers training to achieve a sustainable digital society (De la Calle, et al., 2021). Deloitte US also highlighted that 72% of parents trust teachers for advice on digital education materials at home ([Deloitte US, 2016, 0:52](#)). Hence, the role of teachers could be proven imperative in the implementation of effective digital education and could become a powerful approach to contribute to the digital transformation in education. However, to ensure that teachers can adapt and innovate during this disrupted era, an exploration of teachers' experiences, challenges, and

opportunities for quality training and capacity building during their distance learning implementation need to be unpacked.

Due to the sudden shift to digital learning, many educational researchers have also shifted focus on teachers' experiences with online learning, even in Indonesia. However, it is found through the exploration of current pieces of literature that the experience of teachers in the Sulawesi region is barely included (see [Lie, et.al, 2020](#); [Alivi, 2019](#); [Soepriyanti et al, 2022](#)) hence the scarcity of data from the region. Therefore, this study would like to fill the knowledge gap by exploring the experiences of teachers by focusing on public high school teachers from three regions in Southeast Sulawesi, Indonesia. To reflect on teachers' experiences and explore the integration of ICT into the educational system, this study will use the Capability Approach by combining key elements from Nussbaum's list of central capabilities and Sen's instrumental freedoms ([Flores-Crespo, 2007](#)). This approach will allow the integration of teacher capabilities and contributing factors that encourage a reflective educational policy response and consequently, ensure a real driving force for an effective digital transformation in education.

## **1.2. Contextual Background: Digital Education Transformation in Indonesia**

Digital education is the innovative use of digital tools and technologies during teaching and learning and is often referred to as e-Learning ([Allan, 2019](#); [Suleiman & Danmuchikwali, 2020](#)). It is increasingly used interchangeably with distance learning or online learning, however, according to Allan ([2019](#)), it is an umbrella term for every education process conducted with the means or through digital technology and could encompass the use of ICT in the classroom, blended learning, or whole distance learning process. This innovative use of digital technology is beneficial for both teachers and students. By exploring new ways and methods of teaching, teachers come up with a better and more advanced form of the learning process ([Ibid](#)). This helps in creating engagement and makes learning a fun activity. This mode of education has made learning very flexible as students can attend classes from anywhere and can study anytime they want. It is a blend of digital tools, content, and instructions from teachers or educators.

Digital education, including online teaching and learning, has been studied for decades. Numerous research studies, theories, models, standards, and evaluation criteria focus on quality online learning, online teaching, and online course design ([Hodges et al., 2020](#)). The design process and the careful consideration of distinctive design decisions have an impact on the quality of the instruction, yet in this unprecedented challenge of the pandemic where digital education has to be implemented almost abruptly, the careful design process is absent. This then affects the preparedness of teachers in designing an efficient and effective process of teaching and learning that they could use.

Digital education has been increasingly pertinent and advantageous to school-based learning ([UNESCO, 2021](#)). In Indonesia, the practice of teaching and learning by using ICT has been used since 2006 when the internet itself has become cheaper and more widely available ([Dewan et al., 2021](#)). The Government of Indonesia (GoI) has acknowledged the importance of incorporating ICT into its education system that the National ICT Council was formed to ensure the advancement of e-education ([Butcher and Bodrogini, 2016](#)). However, the verbal commitment to incorporating digital technology into the education system has not been translated into effective financial commitments since then.

Fast forward to the disruption of the education system due to Covid-19 then forced the GoI to make efforts to support the growth of ICT and internet-based learning to comply with the emergency remote learning. The MoEC launched an initiative of developing a one-stop eLearning platform called *Rumah Belajar* or Study House ([Kemendikbud, 2020](#)). Even though this platform has been established since 2011, the pandemic upsurged the urgency of it to be used as a central portal of eLearning activities in Indonesia. The purpose of this platform is to facilitate distance learning and make educational content freely and widely available, and also conduct teachers' training to adopt better technology practices ([Bhardwaj et al., 2020](#)). *Rumah Belajar* is deemed necessary as a step to help teachers and students with their resources for subject material during distance learning ([Yarrow et al., 2020](#)). The GoI has made significant investments to produce online content and services to support teachers especially in conducting teaching practice. However, World Bank reported in Yarrow et al ([2020](#)) that the integration of this platform with daily teaching and learning practices remains a major

challenge. There is little evidence yet on the evaluation of this platform's effectiveness and the assessment of the extent of its take-up and use.

The private sector has also taken steps and come forward to develop education technology (EdTech) applications and platforms. Educational platforms like Ruangguru, Zenius, Edmodo, and Sekolahmu, for example, allow self-paced learning for students and have been gaining popularity of user among students and teachers ([Dewan et al., 2021](#)). For the most part, Indonesian EdTech products aim to help students with learning and upskilling, educators with student management, communication, and teaching, and educational institutions with administration ([Bhardwaj et al., 2020](#)). These however are not followed with the preparedness of the teachers in adapting to the fast-moving digital education implementation. The capacity to support distance education is lacking. Based on the SDI Survey data conducted by the World Bank, 67 percent of teachers reported difficulties in operating digital devices including using online learning platforms ([Yarrow et al., 2020](#)). Thus, digital education poses a challenge for teachers in the field of implementation, particularly when attempting to use the service from education providers ([Dewan et al., 2021](#)). As a consequence, this added to the perception that teachers in this context need support in learning educational technology to be able to effectively adopt digital solutions ([Bhardwaj et al., 2020](#)).

### **1.3. Research Problems and Purpose**

Teaching in the digital age has gone beyond the integration of technology for instructional purposes. This transformation in teaching practices requires teachers and educators to develop their skill sets and the way they use digital devices and technological innovations. This research then intends to explore how teachers address the impact of the Covid-19 pandemic on the development of digital transformation in education in Indonesia. The focus is on the perceptions and experiences of teachers in the Southeast Sulawesi region. To meet this intention, this research will highlight the challenges faced by teachers on availability, accessibility, quality, and other bottlenecks of distance learning implementation that could risk inequitable access to quality education for all. Hence, the analysis will be guided by the following research questions:

1. *What are the contemporary challenges faced by teachers when implementing distance learning?*
2. *How do the teachers tackle the challenges they are facing?*
3. *What opportunities exist to increase teachers' capabilities in implementing effective digital transformation in education?*

The practical implications of this research would be investigating teachers in Southeast Sulawesi on their readiness in integrating digital technologies into their teaching practices and finding out the appropriate interventions needed for teachers' professional development to carry out the effective implementation of digital transformation in education. Additionally, this research also aims to pave the way forward on policy practices in equitable digital transformation in education implementation in Indonesia. Thus, this study is dedicated to filling the gap by expanding the knowledge of teachers' experiences and their capabilities to contribute to a more effective capability-based policy formulation toward digital transformation in education in Indonesia.

#### **1.4. Thesis Outline**

This research consists of six chapters as follows: The introductory chapter provides background information regarding the study and contextual background, research problems, and purpose of the research. Chapter 2 highlights relevant literature aiming to situate the empirical research and reports on the exploration of the impact of the pandemic on teachers' experiences in implementing distance learning as well as highlighting the disparity of Indonesian teachers' qualifications on quality of teaching and digital skills. Chapter 3 provides an explanation of the Capability Approach used as the theoretical paradigm in which this research is situated. Chapter 4 set forth the research methodology used in this research, explaining the site selection, study design, sampling, and the process of data collection and analysis as well as ethical considerations and limitations of the study. Chapter 5 presents the findings on teachers' challenges and experiences in implementing distance learning based on capabilities perspectives, followed by a conclusion in Chapter 6.

## 2. Literature Review

For the past three years since Covid-19 started spreading around the world, scholars, researchers, and policymakers have been collecting data, conducting research, and exploring the likely impact of the pandemic on the disruption of the ever-vulnerable Indonesian education system. The unprecedented phenomenon that disrupted whole aspects of life needs to be explored so that nations, world leaders, education stakeholders, and all relevant institutions could be better positioned in understanding the issue and mitigate the solution. In this context, however, empirical research and reports were chosen based on their relevancy and applicability to the exploration of the pandemic's impact on teachers' experiences, challenges, and the effect on students learning outcomes, in line with the objectives of the study.

### 2.1. Impact of the Covid-19 Pandemic on the Indonesian Education System

The sudden shift from face-to-face learning methods to the whole practice of distance learning is the most prominent effect of the Covid-19 pandemic on the education sector in Indonesia. Due to the pandemic, roughly sixty million students in Indonesia have to enforce at-home distance learning ([Badan Pusat Statistik Indonesia, 2020](#)). Situational analysis from UNESCO and UNICEF ([2021](#)) presented the main impacts of the pandemic on the aspect of participation and learning outcomes, as well as on the broader aspects of safety, health, well-being, and protection. Other challenges are around the issue of economic hardship that resulted in dropouts and underage marriage as well as the issue of the digital divide ([UNESCO & UNICEF, 2021](#)). The forceful implementation of distance learning was done with none or little preparation in terms of students', teachers', and parents' readiness, adding to the unpreparedness is the disparities in internet access. UNICEF ([2020](#)) also reported that the strong progress Indonesia has made over the last decade on improving students' participation and learning outcomes is threatened to slow down due to the school closure. During the pandemic, learning crises and losses were reported by 9 in 10 respondents with school-aged children ([UNICEF et al, 2021](#)).

From the joint situational analysis conducted by UNICEF, UNDP, Prospera, and SMERU ([2021](#)), it is reported that access to reliable internet was a major constraint to

learning for students and teachers. Students from rural areas and low-income families are the ones who suffered additional barriers to technological disparities. The added expense of online learning forced teachers and student parents to spend significantly higher spending on internet subscriptions yet more than 50% of households reported they do not have reliable internet or have very limited internet access (*Ibid*). In addition, some also reported that households do not have the necessary devices to support online learning. Although the issue of inequality of access to technological infrastructure is not new, the Covid-19 pandemic brought about an urgent need for rapid enhancement and innovations in this issue since the sharp spike of information, communication, and technology (ICT) usage due to the absence of face-to-face schooling. The report exposed significant challenges not only faced by students and their parents but also teachers in implementing distance learning. Therefore, to mitigate the challenges and ensure effective distance learning digital literacy for both students and teachers is incredibly important.

## **2.2. Indonesian Teachers' Digital Literacy Competencies**

The abrupt changes to the whole practice of distance learning also expose the disparity of teacher qualifications on the quality of teaching and digital skills. The lack of ICT skills is one of the bottlenecks of Indonesia's distance learning initiatives.

A case study with qualitative methodology using surveys and interviews with 18 language teachers in four regions in Indonesia namely Palembang, Surabaya, Ruteng, and Ambon, found that teachers felt prepared to use ICT in their teaching despite the abrupt changes in teaching methods to fully online (*Lie et al, 2020*). However, to some teachers, technological challenges still persist. The role of the government in ensuring the provision of technological infrastructure and devices is imperative, yet it is also dependent on teachers' active participation in ongoing professional development that centres on students. Within the online learning process, language teachers in Indonesia implement their teaching method highly dependent on five levels of engagement such as learners' access to technology, teachers' prior exposure to online learning, teachers' technological knowledge and pedagogical knowledge, as well as the teachers' support system (*Ibid*). These engagement factors are interconnected and highly influence their teaching and distance learning process. As the study was analysed through the technological education perspective, the framework used was technological pedagogical content knowledge (TPACK) and substitution, augmentation, modification, and

redefinition (SAMR) in teaching practice ([Alivi, 2019](#)). Thus, the focus was on the exploration of teachers' use of technology and to see the extent of their functional improvement and efficiency. The capability of teachers was merely discussed in the recommendation section by expressing the teachers' hopes for the future of education.

An exploratory study on high school teachers in Lombok Island, Indonesia also revealed a number of problems teachers faced when utilising their digital literacy skills in the process of digital education implementation. Lack of internet access, the absence of professional development and institutional support systems were intertwined in nature and became the barriers to teachers' effective teaching process in distance learning ([Soepriyanti et al, 2022](#)). The study that was conducted with semi-structured interviews with 6 English teachers in two different schools in the rural and urban areas of Lombok Island concludes that teachers are highly motivated to enhance their digital literacy competencies when they understand the benefits and could apply digital literacy-based learning in their teaching method. The theoretical stance in the study is using the Self-Regulated Learning framework which evaluates the learning process experienced by a learner in three main phases: forethought, performance achievement, and self-reflection ([Zimmerman & Kitsantas, 2005](#)). The results exposed different performances between teachers from rural and urban areas. Teachers' thoughts concerning digital literacy in rural areas showed a more passive performance in comparison to teachers from urban areas who set up clear plans for their digital learning-based practice. According to Soepriyanti et al ([2022](#)) teachers in urban areas have wider access and higher interest than those in rural areas due to the better access and resources they have. Thus, in consequence, the teachers developed different digital literacy competence. The speed and the widespread adoption of technology during the pandemic are unparalleled. A study conducted on elementary school teachers in Baraka district, South Sulawesi indicated that even though the government has provided digital learning platforms, teachers were not utilizing the platforms, some even have low awareness of the existence of the platforms ([Anita & Astuti, 2022](#)). Therefore, this phenomenon is worthy of further in-depth study for the benefit of teachers' professional development, rural education development, and human capital development in general.



### 3. Theoretical Framework

#### 3.1. The Capability Approach

The Capability Approach (CA) in this context is chosen as the tool of analysis to unpack teachers' experiences during the implementation of distance learning. The Capability Approach is a set of approaches introduced by Amartya Sen (1989) and later expanded by Martha Nussbaum (2000) as a central tenet of human capital development. Sen, as stated in Walker and Unterhalter, defined capability as “...a person’s ability to do valuable acts or reach valuable states of being that represents the alternative combinations of things a person is able to do or be” (Walker & Unterhalter, 2007).

To evaluate capabilities, the core of the analysis is on the actions or approaches that an individual has taken to value for themselves and for others (Gasper, 2007). The process of evaluation is concerned between the opportunity and outcome an individual has. Sen introduced the term functioning as the outcome of capabilities in which capabilities are the potential to achieve the functionings; what people are being and doing (Sen, 1989). Sen (2001) also argues that people need to be actively involved in planning their future, hence this approach provides a framework to interpret the ability of a community to adapt to changes and to contextualize social, economic, and political arrangements. In other words, the capability approach highlights the perspective of human development focusing on the real opportunities of what people are able to achieve and how policies can contribute to expanding people’s freedoms (Spence & Deneulin, 2009).

Sen (2001), however, does not prescribe valuable functionings or capabilities as the capabilities can vary across contexts and can be identified based on public reasoning relevant to the context of the application. Capability and functioning however largely depend on circumstances, relations, social conditions, and contexts within which an individual can achieve freedom. In terms of instrumental freedoms, Sen identifies five distinct types of freedoms namely: (1) *political freedoms*, (2) *economic facilities*, (3) *social opportunities*, (4) *transparency guarantees*, and (5) *protective security* (Sen, 2001). These five instrumental freedoms contribute to an individual capability to lead the life that s/he values.

Meanwhile, Nussbaum identifies ten central human capabilities that need to be present for the fully functioning of human life which include “(1) *life*; (2) *bodily health*; (3) *bodily integrity*; (4) *senses, imagination, and thought*; (5) *emotions*; (6) *practical reason*; (7) *affiliation*; (8) *other species*; (9) *play*; and (10) *control over one’s environment*” (Nussbaum, 2000). This provides a tool to conceptualise and evaluate the freedom-based perspective to reinforce the capabilities. Additionally, people also need to have an agency, meaning that they have the responsibility to be actively involved in shaping their life rather than just ‘wait and see’ of being told or instructed on what to do with their life (Walker & Unterhalter, 2007). Having the capability to reflect on one’s agency is then crucial to creating positive social change. In the context of this study, the capability approach is then used as a normative framework for the evaluation and assessment of the teachers’ experience and social arrangements in their teaching and learning process during the unprecedented time of forced distance learning due to the pandemic.

### 3.2. Analytical Framework

In the application of the capability approach in education, Flores-Crespo (2007) applied the combination of Sen and Nussbaum framework and called it an evaluative framework. The so-called evaluative framework was formed by combining key elements from Nussbaum’s list of central capabilities and Sen’s instrumental freedoms (Flores-Crespo, 2007) as demonstrated in the table below.

**Table 1. Proposed framework to evaluate teachers’ capabilities**

	<b>Instrumental Freedoms</b>	<b>Capabilities</b>	<b>Proposed Functionings</b>
<b><i>Personal achievements (“beings”)</i></b>			
<i>1.</i>	Personal factors	Being able to avoid unnecessary and nonbeneficial discomfort of implementing distance learning ( <i>life, senses,</i>	Being able to feel confidence and self-reliance

		<i>imagination and thought, emotions)</i>	
2.	Social opportunities and economic facilities	Being able to form a conception of the quality education and to engage in critical reflection about the lesson planning ( <i>practical reason</i> )	Being able to visualize lesson plans
3.	Social opportunities and economic facilities	Being able to think, to reason, and to do things in a way informed and cultivated by an adequate education ( <i>practical reason, affiliation, control over one's environment</i> )	Being able to develop further digital skills and equip digital tools
<b>Professional achievements (“doings”)</b>			
4.	Social opportunities and economic facilities	To think, to reason, and to do things in an informed way and cultivated by an adequate education ( <i>practical reason, affiliation, control over one's environment</i> )	Being able to acquire knowledge required in teacher's certification
5.	Personal factors	To form a conception of quality education ( <i>practical reason, affiliation, control over one's environment</i> )	Being able to look for and ask for teachers training opportunities

6.	Personal factors and social opportunities	To engage in critical reflection about the planning of one's life and lesson plan <i>(practical reason, affiliation, control over one's environment)</i>	Being able to choose desired digital learning skills and tools
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Source: adopted and modified from [Flores-Crespo, 2007](#)

Flores-Crespo (2007) suggested that this evaluative framework is shaped by a four-dimensional framework in order to analyse the expansion of capabilities from an educational angle. The elements of this dimensional framework are philosophical, pedagogical, institutional, and policy (*Ibid*). Freedoms mean having the space to achieve capabilities and using them to achieve the outcome of development that people aspire to be. In the context of evaluating teachers' capabilities, the instrumental freedoms that would be framed are political freedoms, social opportunities, and economic facilities. Transparency guarantees and protective security are excluded as they are deemed irrelevant to the context of the pedagogical angle. Political freedoms are referred to as personal factors as they will essentially include the teachers' freedom of expressing their desired digital skills in implementing distance learning based on their own "political will" of engagement. While social opportunities and economic facilities refer to the teachers' ability to access and possess resources and opportunities. The evaluative framework of the capability approach would be relevant in the context of this research to evaluate and assess teachers' capabilities while facing challenges in implementing distance learning. The framework will be used to demonstrate the instrumental freedoms that contribute to teachers' capabilities. Furthermore, the proposed element to be evaluated is from the institutional side of the educational system. It is important to acknowledge that the educational process normally occurs within institutions hence school environment influences diverse factors to situate education within the capability approach.

Additionally, the state of being knowledgeable and having access to education and training which allows teachers and educators to also flourish is proclaimed to be a

valuable capability (Nussbaum, 2000; Sen, 2001; Walker & Unterhalter, 2007). Furthermore, teachers' ability to apply capabilities into the proposed functionings is influenced by three conversion factors namely, personal, environmental, and social factors (Hart, 2018). These conversion factors are mainly preconditions that allow effective options and freedoms for an individual to achieve their aspiration set (Ibid). Individuals might convert their internal and external resources into capabilities and functionings in diverse ways. Therefore, to be able to understand and evaluate the whole frontiers of teachers' capabilities in digital education, the personal and social context surrounding the environment of teachers must be taken into consideration. Based on the explanation above, the analytical framework is structured as the following figure:

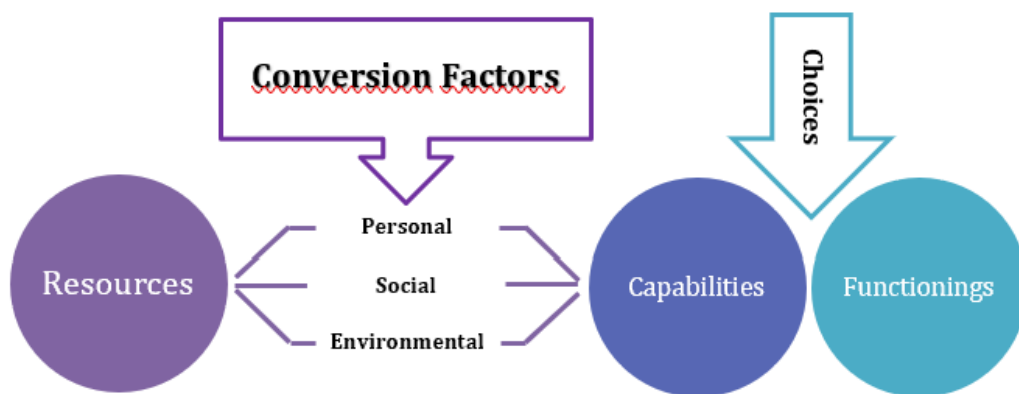


Figure 1. The Capability Approach Analytical Framework, adopted and modified from Thierry et al., (2009)

Drawing upon the capability approach is believed to provide a theoretical lens to conceptualise the empowerment and participation of teachers in the process of distance learning and digital education implementation during these unprecedented times. This theoretical lens would be used to acknowledge teachers' differences in their abilities to convert their resources into capabilities.

## 4. Methodology

### 4.1. Site Selection

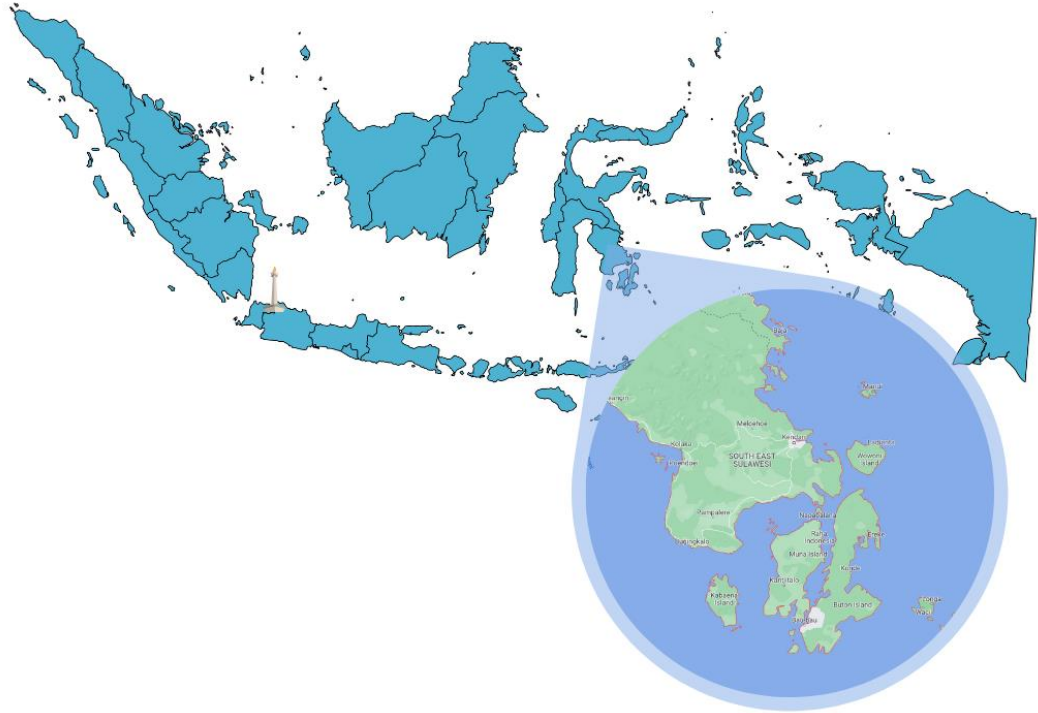


Figure 2. Map of Southeast Sulawesi, Indonesia © Google Maps, 2022

This research emphasises the context of Indonesia, particularly in the Southeast Sulawesi region. The research site was chosen for several numbers of reasons. First, Southeast Sulawesi is a region that is located at around 1101 miles flying distance from the capital city, Jakarta, with a population of 2,624,875. It represents the east region of Indonesia and its Human Development Index (HDI) scores 0.717, with an education indicator of 0.681 ranks 18 out of 34 provinces in Indonesia ([Badan Pusat Statistik, 2021](#)). The research participants came from three different districts in Southeast Sulawesi namely Kendari (the capital of the province), Bombana, and South Konawe which represent the central, western, and southern parts of the region. Second, conducting research in the field of educational policy and planning would allow the researcher to identify the challenges and opportunities of the educational system in Indonesia particularly in the context of digital transformation. Last but not least, the educational system in Indonesia has been transforming rapidly, including its digital education system and teachers'

development. Thus, this area of research may contribute to the betterment of digital transformation in education and Indonesian (e)quality of education in general.

#### **4.2. Study Design**

As this research would like to develop an in-depth understanding of teachers' challenges in implementing distance learning in Indonesia, a qualitative method of research is chosen as the methodology. The qualitative method is used to explore the challenges, barriers, and capabilities of teachers in Southeast Sulawesi in relation to distance learning implementation and their digital literacy. As the qualitative methodology is carried out by gathering data from the experience of individuals or groups ([Creswell & Poth, 2018](#)), it is deemed suitable to be used in this research to ensure a better understanding of the matter. A case study approach is used in this research as it would serve the purpose of unpacking the complexities of distance learning implementation in Indonesia as experienced by public senior high school teachers in Southeast Sulawesi as the case. As stated in Creswell & Poth's ([Ibid](#)), case study examined a specific case with the intent of illustrating the problems that persist in the process of implementation and mapping out the complexity of the issue. Senior high school teachers' experience in three regions in Southeast Sulawesi was chosen as the case to fill in the knowledge gap of the dynamics of distance learning implementation in Indonesia which for now are mostly explored within the region of Java and Sumatra.

#### **4.3. Sampling**

Interview sampling adopted a combination of convenience sampling and snowball sampling. Snowball sampling is used to generate a chain of interviews based on people who refer to other people who would be good sources and might have similar or different perspectives which could avoid bias ([Patton, 2015](#)). The criteria for samplings are selected based on the teachers' availability and willingness to participate. Other respondents are identified by asking the interviewees to refer to other teachers or school leaders that would be able to provide information on the research. The criteria of teachers who became research participants are senior high school teachers who are residing in the Southeast Sulawesi region, both in rural and urban areas, and who have been using ICT in their teaching method during the course of the distance learning due to the pandemic. Senior high school teachers were selected as they engage with technologically savvy

students that forcing the teachers to upskill their digital skills and adapt or accommodate their students' learning needs. Hence, exploring on the experiences of senior high school teachers in addressing their challenges and overcoming them is deemed relevant to the purpose of the study.

Due to several challenges and setbacks, however, out of 15 participants who filled in the participation form, only 10 participants managed to participate in the semi-structured interview. The other 5 participants either did not respond back to the scheduled interview confirmation or had other personal reasons, hence resulting in them withdrawing from the interview. The participants are public senior high school teachers who came from 3 different districts in Southeast Sulawesi namely Kendari, Bombana, and South Konawe. Kendari is the capital of the Southeast Sulawesi region therefore categorised as an urban area and the other two districts are categorised as rural areas. Out of 10 teachers, 3 are school leaders and 4 are females.

#### **4.4. Data Collection**

Data collection procedures include secondary research in which a desk research review was conducted to gain insights into existing literature and data available from secondary sources such as journals, government documents and press releases, UN reports, national statistics, etc. These secondary materials will be used extensively to support the data and analysis. The primary data is the in-depth interview sessions which were conducted with 10 public high school teachers in the Southeast Sulawesi region. In conducting the interview, a semi-structured interview format was used so as to engage in a more exploring response and give more freedom to the respondents to communicate their thoughts, opinions, and/or criticisms. Semi-structured interviews would allow for the exploration of the understandings and perceptions of the respondents on the issue of distance learning and further explore the issue and its impact on the respondents ([Hammet, et.al, 2014](#)). Due to the partial lockdown that is still imposed in Jakarta and complicated access to fly to Sulawesi and to do face-to-face interviews with the teachers, the interviews ended up being conducted through Zoom. Identified participants were asked to fill in the consent form prior to the interview. The in-depth semi-structured interviews were conducted over the course of January to February 2022. The interview guide was structured based on the research questions yet designed in a manner that



would allow follow-up questions and enable participants to elaborate more freely on their answers.

#### **4.5. Data Analysis**

A thematic analysis technique is used to analyse the data obtained from the in-depth semi-structured interviews. The thematic analysis involves a whole series of narrative data analysis processes using iterative techniques such as categorical strategies and contextualization in order to understand the experiences and challenges faced by the teachers ([Creswell & Kasmad, 2020](#)). The data obtained from the semi-structured interviews were transcribed, highlighted, and categorized based on the abovementioned Capability Approach analytical framework. Teachers' statements were categorized based on the thematic occurrence of resources, capabilities, conversion factors, and functionings. Significant and relevant statements also clustered into personal, technological, and pedagogical challenges. The process of data analysis was conducted manually, and the findings are reported in a descriptive manner to be then discussed in an attempt to obtain a clear answer to the research questions.

#### **4.6. Ethical Consideration**

Prior to conducting the interview, a consent form was formulated and sent to each of the participants in order to ensure that the participants agreed on the duration, the information needed, recording, transcribing, and confidentiality ([Hewson et al., 2016](#)). In addition to giving out the information about the purpose of the research in the consent form, the researcher also made sure that the participants understood the purpose of their involvement and agreed to the conditions of their participation prior to conducting the interview ([Lobe, et.al., 2020](#)). The freedom to withdraw from the study when they feel uncomfortable or harmed is guaranteed. A private and secure virtual meeting platform was used for interviews to ensure confidentiality and anonymity. However, the environment of the participants could not be controlled yet the participants have a right to turn off their web camera if they do not feel comfortable.

#### **4.7. Study Limitation**

The uncertainty of increasing positive cases of Covid-19 in Indonesia and the large-scale social restrictions policy have been the major obstacles faced by the researcher

throughout the process of data collection. Even though face-to-face interviews were preferred yet for the sake of health and security, the semi-structured interviews have to be conducted remotely through an online platform which is mainly Zoom. Although, face-to-face interviews would allow the researcher to go to the field and observe the practice of distance learning implemented in each of the senior high schools where the respondents are teaching. This could add data on the kind of setting and tools the teachers are using. Nevertheless, the use of an online platform when conducting the interviews also becomes an advantage as the researcher could observe the teachers' behaviours when using the platform which they also use in their day-to-day teaching practice during the pandemic. Hence, the technology itself becomes a part of the phenomenon under observation.

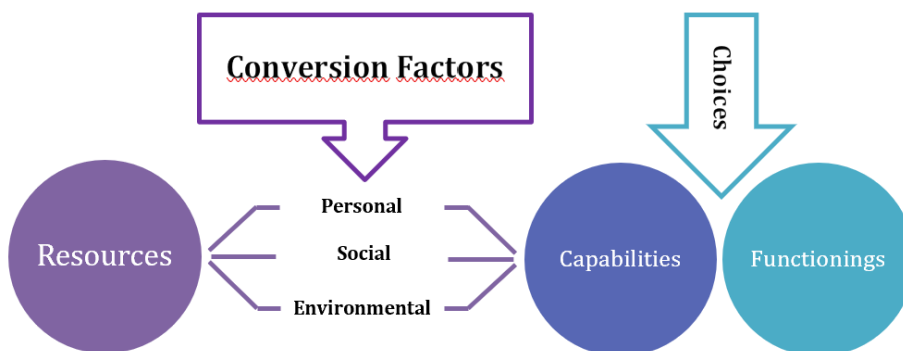
Additionally, the Capability Approach as a tool of analysis could provide a vagueness as it does not necessarily have strict guidelines on how to collect data and how to capture functioning, hence there are no pre-defined variables to measure. However, using the Capability Approach helps in drawing attention into individual values and the aspect of choice which we cannot skip when considering rights-based development interventions as when using the Capability Approach, the values of each individual are taken into consideration in the analysis ([Robeyns, 2005](#)).

## 5. Findings and Analysis

This chapter is structured based on the proposed analytical framework as explained in Chapter 3 aiming to answer the research questions. Accordingly, the first section of this chapter will explore the evaluation of teachers' capabilities during the implementation of distance learning due to the pandemic. The evaluation was done by unpacking the resources, capabilities, conversion factors, and achieved functionings that the teachers experienced. Then the second and last sections will put forth the extent of the teachers' challenges in the implementation of distance learning, their readiness as a way of tackling the challenges by drawing upon their technological and pedagogical skillset, and a set of opportunities in scaling up teachers' development programme to achieve proposed functionings. The quotations of the teachers were presented using pseudonyms of T1 to T10.

### 5.1. Teachers' Capabilities during the Implementation of Distance Learning

Teachers' experiences in implementing distance learning and the exploration of their experiences from the perspective of the capability approach formed the structure of this section. The findings are presented and analysed based on the following analytical framework as explained in Chapter 3, subheading 3.2. Analytical Framework, below:



#### 5.1.1. Resources

##### A. Technological Resources

Technological resources refer to the availability of hardware and software for teachers and students, teachers training, and any types of professional development programs provided by schools and the government to implement distance learning.

Based on the interviews conducted, all 10 teachers responded that they have access to digital tools to implement distance learning. These digital tools can be hardware-based or software-based. Hardware devices like laptops or computers, smartphones, and internet connections be they provided by a Wi-Fi router or internet package are available and accessible for all teachers. Most of them acquired the hardware personally, yet if they wanted to use the ones provided by their schools, they can freely access them in the school while maintaining a safe distance and health protocols applied in the schools. However, when talking about their students, various responses emerged. Two teachers from South Konawe, for example, stated that some of their students do not have access to laptops or computers. Most students accessed their learning materials and engaged in the learning process through smartphones. Even if they have a laptop or computer in their households, priority users are usually their parents or their college-student siblings. Unlike teachers, students were not allowed to access school facilities during the distance learning period as there is no control measurement for students in place at the provincial level.

The availability of software-based tools such as online communication channels, video conferencing, eLearning tools, Learning Management Systems, and online courses varied for each teacher. For communication channels, teachers mainly use WhatsApp over Facebook Messenger, or Line. Video conferencing tools varied depending on the schools and teachers. It is found that there was no rigid regulation from the provincial level of public schools, hence the teachers use either Zoom, Google Meet, Microsoft Teams, or Edmodo depending on their comfort with using the platform. Consequently, it might also differ for each subject that they are teaching.

*“We have Microsoft 365 licensing provided by the school so we can use Teams to teach and share teaching materials with our colleagues and also to students.” (T3)*

*“Teachers in my school use different platforms to teach, I mainly use Zoom but sometimes Zoom is too heavy (in internet data consumption),*

*so for particular subjects like Biology or Chemistry the teachers use Edmodo.” (T4, Headmaster)*

As for the teacher training and capacity development resources, the teachers mainly access them through their own initiative of searching for their desired digital skills and exploring them through Youtube or other online platforms. Schools also provide training and workshops for teachers to inform them about government policies on distance learning implementation or for knowledge sharing on digital tools and platforms. As expressed in the excerpts below:

*“We have teachers’ community in school and usually we get information of training and workshop through the shared community.” (T5)*

*“The school sometimes conducted a workshop about how to use zoom, teams, Edmodo, or information about webinars from MoEC. I joined them if I think it is relevant to my lesson plan.” (T8)*

The Government of Indonesia through the MoEC also provided *Rumah Belajar* and launched several capacity building programmes for teachers to develop their digital skills and enhance their digital learning practices. Among other programmes are *Guru Penggerak* or Teachers of Change, *PembaTIK* as an acronym of *Pembelajaran berbasis TIK* or ICT-based Learning, and *Sekolah Digital* or Digital School ([Kemendikbud, 2021](#)).

## **B. Pedagogical Resources**

Pedagogical resources refer to the knowledge, skills, and attitude of teachers to integrate technology during the process of distance learning. To explore these components, the semi-structured interviews include questions on teachers’ years of teaching and their perceptions about their confidence to implement distance learning, the digital skills they have, and their experience in using digital tools.

On average the teachers’ years of teaching is around 15.4 years ranging from 7 years to 22 years of teaching. All of them also conveyed that they have been using ICT during the process of learning engagement even before the pandemic. The integration of ICT was upsurged in the number of uses with digital tools as a means of teaching such as

WhatsApp, Zoom, Google Classroom, and Microsoft Education. Although it can be seen that social media platforms such as WhatsApp and conferencing applications like Zoom and Google Meet are their main choices for communication channels with their students as explained above. This communication platform makes the learning asynchronous and fosters a rigid one-way of learning engagement. Although occasionally, the teachers used video-conferencing tools such as Zoom, Google Meet, or Microsoft Teams to engage in synchronous sessions. One of the teachers expressed in the interview session:

*“Because of the lack of internet connection (for students), we cannot always use Zoom to teach, hence I usually give assignments through WhatsApp groups and tell them to send in their assignments through email and later give feedback through WhatsApp.” (T2)*

Another expressed that this communication channel is used as it is easier to use. It can be understood as they are affordable and do not require high internet speed hence people in rural areas will have no constraints in using them.

*“...sometimes I had to check on my students’ assignment by asking them directly through WhatsApp, it’s the easiest and fastest way to do” (T10)*

T10 also indicated that in some areas where the students live, they do not have appropriate access to internet connections. Therefore, to complement this condition teachers had to engage asynchronously with their students and have minimum control of learning engagement in the process.

Teachers with a higher level of engagement and digital skills get to use other platforms to accommodate their teaching and learning process. Several teachers use Youtube to upload their teaching materials and make instructional videos for their students so that their students can access the materials whenever they can. One of the teachers initiated a Youtube channel “*Sultra Cerdas*” or in literal translation “Smart Southeast Sulawesi” which already has 2.92 thousand of subscribers aiming to share knowledge and information, as well as training regarding digital skills and platforms to improve their teaching and learning process. Among the teachers, there are 4 teachers (T1, T2, T3, and

T10) out of 10 who either have their own online platform like website, blog, or a Youtube channel to share knowledge, information, and learning materials with their colleague and students. Teachers are using their knowledge and skills to create learning content and make use of the free platforms available online to engage with their students and encouraged active learning. The teachers demonstrated resourcefulness in their pedagogical process equipped with proactive use of their digital skills and created learning content to accommodate students' needs.

All these technological and pedagogical resources mentioned above, helped facilitate the teaching and learning engagement between teachers and students. With the availability of these resources, teachers could provide students with learning materials even without face-to-face classroom instructions. However, whether these resources can be turned into functioning achievements will be discussed in the later section of this research.

### **5.1.2. Conversion Factors**

As Hart (2018) suggested the ability of an individual to utilize their capabilities to achieve functionings is largely influenced by personal, social, and environmental factors surrounding them, which are the conversion factors. In the context of the teachers' experience in implementing distance learning, these conversion factors are distinctive in their conditions. The discussions below are structured within how teachers convert their resources into capabilities and achieve the proposed functionings.

#### **A. Personal Factors**

Personal factors which are hugely influenced by teachers' pre-equipped digital skills and knowledge allow teachers to have instrumental freedoms to achieve their aspirations. Teachers-students relationship and learning engagement are affected by teachers' whether it is conscious or unconscious (Vijayan, et.al, 2016). These behaviours emerged due to individual preference, personality, and values that the teachers have, and these affects how well prepared and passionate they are in engaging with their teaching and learning processes.

*We (teachers) have to cope with the situation that we are facing right now, so our initiatives and motivation to continue learning and upskilling I think is important. (T2)*

T2 here expressed the leadership qualities that one should have in as coping mechanisms to face challenges they encountered in their work. Teachers who have this pedagogical quality oftentimes could reflect good teaching and learning activities with student-directed approach (Alivi, 2019). The motivation of teachers to upskill and reskill their digital teaching strategy could be helpful for encouraging and reinforcing students to be responsible for their own learning process as the teachers also shown self-confidence and motivation to keep learning.

Teachers who do not have to worry about access to their technological and pedagogical tools tend to focus on enhancing their teaching strategy and content creation by utilizing the resources that they have. As mentioned in the previous discussion on resources, teachers could create their own digital learning platform and use them to contribute to capacity development of their colleagues.

Out of 10 teachers, 7 teachers stated that they are confidence with their level of digital literacy. This can be shown from the use of digital tools and digital platforms that they use to communicate and engage in their teaching materials with their students.

*“I am a certified Microsoft Educator, so I inform the headmaster in my school to conduct training and workshop where I can train my colleagues to use Microsoft-based learning platforms to improve their teaching experience.” (T3)*

*“I shared my teaching recordings in Youtube so that my students can watch them whenever and wherever they want. ...sometimes I spoke in webinar to share how I creatively create learning content.” (T1)*

## **B. Social Factors**

Social factors include factors where the teachers are belonging to in the society which is an academic society. The conversion of such policy created in this academic society thus



influence how teachers can utilize their resources into an achievement of outcomes. Here the institutional support from the government in the means of public policy and capacity development programmes were taken into account. During the course of distance learning, the government of Indonesia through the MoEC launched several teachers' development programmes and provided teaching and learning platform to accommodate distance learning. As mentioned in the resource's discussion, the institutional support from the government who has provided learning platform and capacity building programmes became the main conversion factors in this aspect. However, it is found from the interviews that these programmes were not able to empower the teachers as much as they might be intended to. Among the programmes mentioned, what was expressed from the interviews teachers are either have not heard or aware about the programmes or not showing any interest to join in the programmes as shown in the excerpts below:

*In my school, we don't really use Belajar.id because to access the platform we need to use our own account and it's really complicated to use. (T1)*

*I don't really use government platforms because I think the teaching materials is incomplete. Teaching materials from Google are better and more relevant to my method. (T2)*

T1 and T2 basically expressed that the *Rumah Belajar* platform is not easily accessible for them and did not provide many relevant teaching materials for the teacher. Hence, resulted in them choosing another platform for their learning engagement.

*The free internet subscription provided by the government are limited to only particular platforms, Microsoft is not included. (T2)*

The most recent World Bank Report on the teacher training in Indonesia showed that even there is a great demand of teacher training only a few of the training programmes enable teachers to improve their teaching and digital skills ([Yarrow, et al. 2022](#)). The Teachers of Change programme did not get enthusiastic response from the teachers. It is either because they are not aware of the programme, or they did not have enough motivation to join. Digital School programme is the government attempt to the

implementation of digital transformation in education. Throughout this programme, the MoEC provide digital learning facilities in schools by giving out computers, tablets, laptops, LCDs, routers, and other ICT-based learning tools ([Kemendikbud, 2019](#)). Participating schools in this research have received the provision of hardware devices and internet facilities in their schools, hence despite the unstable internet connection they have the tools they need to conduct distance learning.

### **C. Environmental Factors**

Environmental conversion posits the school environment where the teachers are based. This could be different depending on the geographical location of the schools as well as whether the schools are public schools or private schools as the funding of the institution could contribute to the facilities and support that the teachers have. As all respondents of this research are public senior high school teachers, the geographical location of the schools become the indicator. The schools are located in 3 different regions in Southeast Sulawesi in which represent the central, western, and southern side of the island. It is however only differed in the availability of stable internet connection and teachers' community. Kendari as the capital of the province has better internet connection and more proactive teachers' community hence teachers from the school located in this city could utilize their resources in a better way than those who are based in Bombana and South Konawe.

*Teachers' community like MGMP is very passive, we rarely meet and there is no knowledge sharing. (T1)*

*A colleague taught us to use Microsoft educational platforms, so the school use Microsoft because the teachers have been using it. (T2)*

The implementation of distance learning also requires optimal preparation not only by the teachers but also by the schools. Hence, with the resources provided by the schools, teachers with better school facilities could convert their capabilities into better outcomes (functionings).

These conversion factors heavily influence the teachers' capabilities in approaching their desired functionings. The teachers therefore then need to be creative to integrate the resources they have to convert them to their personal and professional achievements. The

following section will explain what kind of capabilities that the teachers are able to value and what functionings they are able to achieve or instead constrained.

### **5.1.3. Capabilities and Achieved Functionings**

Based on the proposed analytical framework, this research would lay out the possible capabilities and achieved functionings that the teachers may or may not reached in their personal achievements (“beings”) and professional achievements (“doings”). The core analysis is on the teachers’ actions and approaches that they have taken to value for themselves and for others. As stated in the earlier discussion of resources and conversion factors, teachers responses to what they deemed valuable to achieve in their beings and doings can be reflected on the following capabilities categories: life, senses, imagination and thought, emotions, practical reasoning, affiliation, and control over one’s environment which are based on Nussbaum’s (2000). These capabilities of actions helped the teachers in choosing what reasonable approaches for them to ensure their efficient way of implementing distance learning. They are able to form a conception of quality education by assessing their students’ needs and utilize their imagination and thoughts, practical reasoning, emotion, and control to create learning content and engage in proactive teaching and learning engagement in distance learning.

The teachers can also engage in their critical reflection with supportive institutional functions from their schools and the relevant government programmes. Teachers are able to proactively create learning content and teaching materials that could accommodate the curriculum design without ignoring the benefit of their students. Although, there are still some constraints in the governmental programmes that may not be seen fitted for the teachers’ teaching strategy.

The teachers’ choices to convert the capabilities into achieved functionings were supported by their personal, social, and environmental factors. Consequently, the teachers could convey their feeling of self-confidence and self-reliance to visualize the teaching and learning engagement that they value and deem effective for them. Albeit the teachers’ opportunity to develop further abilities in digital skills and digital teaching strategy is hindered by a lack of awareness of available capacity building programmes. In general, teachers’ professional achievements are made feasible by both personal and environmental factors as they are able to acquire relevant knowledge needed to

implement distance learning. Notwithstanding the lack of conversion on the available social institutional support for teacher development and training.

Based on the capability perspectives explained above, the next section will then unpack the challenges the teachers have faced and how their capabilities contribute to tackling the challenges and seizing the opportunities that exist to enhance their capabilities.

## **5.2. Challenges Faced by Teachers in the Implementation of Distance Learning**

Despite having an optimistic attitude toward the process of distance learning, the teachers still perceived many challenges in the process. Those challenges are categorised into three distinctions as described below.

### **5.2.1. Personal Challenges**

All teachers were affirmatively indicating that they have been using ICT in their teaching and learning processes even before the pandemic. The inclusion of ICT in their learning engagement helps them adapt to the abrupt changes from face-to-face interaction into distance learning. Most teachers hence expressed their optimistic perception toward their digital skills in using ICT during the school closure.

The interviews also disclosed some personal challenges that the teachers encountered during the implementation of distance learning. First, all female teachers expressed their challenges in managing time and roles that they have to do during the distance learning. Especially for those with kids, they oftentimes have difficulties in dividing the roles and finding or creating comfortable spaces to teach from home.

*At home, we (females) must do house chores and sometimes it's difficult to manage our tasks so we could not do our best in teaching.*

*(T1)*

*I have little kids at home, so I need to move from the living room to my bedroom or other places to avoid background noises as I do not have a dedicated place to work from home. (T7)*

The burden that these female teachers bear is exacerbated in many cases by family prejudices and social indifference. Despite having the double burden in exercising their

roles at home and at their workplace, society views that as normal as that is how it has always been.

Other teachers highlighted the barriers they faced in addressing their digital competence due to the lack of accessibility to ICT facilities and training from social and institutional support. This phenomenon highlights the interest of schools in the development of different infrastructures and instruments to measure their teachers' digital competence.

It is also found that it really is dependent on teachers' capacities and self-motivation in addressing their challenges. As explained above, with the right access to resources and conversion factors, a very motivated teacher could develop his or her skills by conducting training for his or her colleagues.

### **5.2.2. Technological Challenges**

In order to shift from traditional instructional classroom activities to digital learning, teachers indeed have to be prepared for their engagement in digital transformation. Consequently, teachers need to have all the resources and competencies that will help them adapt to these changes. Even with their aptitude to assimilate skills and knowledge in the use of digital tools as shown in the explanation of personal challenges above and despite having capabilities to convert their social and environmental support and enhance their teaching and learning process to some extent, the interviews revealed that some teachers were still struggling with using some of the educational tools that they had to use.

The subsidized internet package from the government cannot be used in some platforms that the teachers usually use in their teaching process. Within the distance learning process, teachers' prior exposure and experience in using digital skills and also their social and environmental support system highly influence their performance.

Geographical location also affects the teachers' performance as teachers in Kendari as the urban area shown a more proactive performance in their digital teaching strategy which is in line with the study conducted by [Soepriyanti et al, \(2022\)](#)

### 5.2.3. Pedagogical Challenges

Reflecting on the experience of teachers on their pedagogical challenges, teachers expressed that the ever-changing notion of the behaviour of not only students but also teachers in the online format is unavoidable.

*During online learning, I cannot interact freely with my students and it's difficult to have full control in class... I cannot push them to attend classes as some of them do not even have internet access and cannot afford to subscribe enough mobile data to use in their learning. (T1)*

T1 expressed that the changed learner behaviours are the most challenging as the teacher could not control the environment of the students and hence need to accommodate and also sympathize with their conditions. Teachers need to adapt their teaching methods to compromise with the students. This urged them to rethink and reinvent their teaching strategy to accommodate the conditions without losing the traditional classroom learning vibe. Most teachers then need to upskill their digital skills and explore the learning platforms that they can use. This includes integrating curriculum design, pedagogy, and organizational design into their teaching strategy. This can mean that the teachers are encouraged to be more proactive and flexible in their pedagogical practice to meet the needs of their students.

*If I can choose, I'll choose offline learning because I don't think the students are ready and the infrastructure in our school doesn't support the online learning. So, I tried to combine both online and offline learning, they can come to school if they need to consult about their assignments (T2)*

Although some teachers seemed to have moved their traditional classrooms into online classrooms. Meaning that they conveyed their explanations, gave teaching materials, and assignments, and checking up with the students through the video conferencing chat button or not at all. This particular pedagogical practice was in considerable risk of learning loss for students. Therefore, the need to upskill and reskill their digital pedagogical method is in need now more than ever.

### 5.3. Teachers' Readiness in Implementing Distance Learning

To evaluate how the teachers tackle these contemporary personal, technological, and pedagogical challenges they are facing during the implementation of distance learning, the aspect of digital readiness plays a significant role. Based on the evaluated capabilities, the teachers are showing their ability to convert their capabilities into their achieved functionings which mainly showed their readiness in utilizing digital tools and exercising digital learning strategy. From having the choice of using their capabilities to do what they valued, the teachers were able to accelerate their digital adaptation.

In the context of digital transformation in education, teachers' readiness is deemed important, as teachers who are the forefront enablers of education are able to develop their capacities and capabilities to fulfil the desired teaching and learning outcomes. The perceived effectiveness of digital technology is one of the key factors in enhancing the implementation of digital education ([Al-Awidi & Aldhafeeri, 2017](#)). Hence, the ability of individuals to have self-confidence and self-reliance in using digital tools and implementing recent technologies could also determine digital readiness ([Horrigan, 2016](#)). Although, it has to be acknowledged that different people can have varying levels of preparedness in using technology. It is shown from the result that albeit most of the teachers can function adequately throughout the implementation of distance learning, 2 of them still conveyed worrying expressions when evaluating their digital literacy.

Another measure of the teachers' digital readiness is their ability to find relevant and reliable online information and created learning content by utilizing online education technology platforms and other interactive learning platforms. Horrigan ([2016](#)) stated that people who have the confidence to familiarize themselves with technological skills are also more likely to use technology in their personal and collective learning. The teachers' ability to share knowledge and learning materials through their own platforms are thus has greater digital readiness. Therefore, to be able to ensure that digital transformation in education can be implemented effectively, it is imperative to identify teachers' capabilities and what roles each teacher can do with the resources they have or their conversion factors.

#### 5.4. Scaling Up Teachers' Development Programme

Based on the evaluation of teachers' capabilities and how their conversion factors influence their achieved functionings, it can be concluded that some hindrance to the desired functionings is from the lack of institutional support. This institutional support is mainly derived from governmental programmes of which the teachers are not aware or lack the motivation to join. The lack of awareness of government programmes is not a new thing for people outside of Java in Indonesia. As mentioned before in the previous study of this research, regions outside of Java are still commonly excluded even from governmental programmes ([Azzahra, 2021](#), [Suleiman, et.al., 2020](#), [Kemendikbud, 2019](#)). Therefore, to implement digital transformation in education, the government particularly needs to consider the aspect of the digitization of education communications. The communications schemes need to be greater and equally accessible to teachers in eastern regions of Indonesia and in rural areas which will significantly have benefited them.

Based on the interviews conducted, the teachers used their teachers' community to communicate and relay information on teacher training. Mainly, teachers found out about the information through their headmasters, teachers' community, colleagues and peers or MoEC social media. The majority of them get information directly from the official MoEC website and joining a training from the official Youtube channel. However, this needs motivation and willingness from the teachers themselves to seek out information on their own. Those who have no motivation to seek out information will then be left out. Therefore, as a suggestion, the MoEC need to do a better job in carrying out and disseminating their educational policies, especially in the rollout of programmes and teachers' development. Ineffective policy communication channels have the potential to lead to misunderstandings and are thus a factor that can perpetuate inequality of access to information.

One interesting example of this is the *Rumah Belajar* platform. *Rumah Belajar* is one of the main educational and learning platforms launched by the government of Indonesia to accelerate distance learning and tackle learning loss during the pandemic ([Kemendikbud, 2020](#)). During the period from January 2014 to June 2021, *Rumah Belajar* recorded 20,052,828 users with a total of 217,031,030 visits. In 2021 alone, *Rumah Belajar* users increased by 2,347,716 users with 22,953,918 visits ([Widiyanto N, 2021](#)). However,



despite having and providing learning materials, classroom, and communication facilities that facilitate inter-community interaction, are available on mobile, and support augmented reality, teachers still find it not user-friendly. As discussed, the teachers found that this platform does not provide the relevant learning materials that they seek. This facility has existed since 2011, but the global pandemic situation has increased its relevance of this facility ([Widiyanto, 2021](#)).

The government of Indonesia is also rolling out the Freedom of Learning programme in which one of the focuses is strengthening digital educational platform systems and integrating digital schools development and enhancing teachers' digital skills and digital learning process to be more student-centric ([Kemendikbud, 2021](#)). All these programmes may offer advanced and sophisticated features with a great intention of putting forward freedom of learning. However, we also need to ensure that the expansion and scale-up of digital transformation in education are balanced with teachers' and students' capacities and capabilities as the end users of these platforms.

## 6. Concluding Remarks

The capability approach is a people-centred model of development. This approach helps to expand our view of the factors that may contribute to the process of acquiring more capabilities and enjoying more opportunities to use those capabilities. With more capabilities and opportunities, people have more choices. This research has discussed the teachers' experiences in examining their challenges when implementing distance learning. This study examined teachers' experiences in implementing digital education with the participation of senior high school teachers from three regions in the Southeast Sulawesi region. The presented results and exploratory analysis gave insights into teachers' challenges in their distance learning implementation and may set further directions into digital transformation in education.

This research has shown how the capability approach may enable teachers' exploration and development of the aspirations that foster digital transformation in education. Based on the results, teachers could use their capabilities to achieve functionings in addressing their digital skills and literacy to adapt to the unprecedented circumstances of distance learning. However, some teachers had issues which caused by the lack of resources to actualize their freedoms to choose their desired digital upskilling and pedagogical reskilling. Lack of institutional support was also an issue that can be solved by considering teachers' needs and capacities in developing their digital skillset. The consideration of teachers' agency and capabilities highlights the need to facilitate their participatory rights to exercise the teachers' freedoms in implementing distance learning and digital education. This can be done through the teacher professional development programmes that the GoI is currently disseminating under the programme of Teacher Education and Training such as *Guru Penggerak*, *PembaTIK*, and *School Digitization* to close the gap of high-skilled and high-quality teachers, particularly in Southeast Sulawesi region. In order to ensure effective digital transformation in education, the role of teachers as frontline workers needs to be strengthened by empowering them through these blended models of learning that are more student centric.

## **Further Research**

Despite many having been exploring teachers' challenges and opportunities in the implementation of distance learning and digital education, the operationalizations of the Capability Approach in the literature are only a few. Furthermore, looking at the institutional side of the educational system explained how teachers' capabilities can be expanded or restricted, which may encourage the formulation of capability-based policies in the educational system. What was articulated in this research would impact the priorities for teachers' training and continuing professional development. In turn, capability-driven processes of teaching and learning and how to develop freedoms and achievements and encourage the development of critical agencies need to be designed to ensure the quality and effectiveness of Indonesian education systems. A capability-informed approach to assessing digital transformation in education should entail looking across diverse teachers' personal and social contexts and capabilities. Therefore, further research is needed to help evaluate the appropriateness of the capability-based approach towards digital transformation and educational development interventions and further explore how development programmes designed with the end users' capabilities in mind can become true enablers of freedom.

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# Appendices

## Appendix A. Consent Form



### Consent Form

This interview is conducted as a requirement for the researcher's thesis entitled as follow:  
Scaling Up Digital Transformation in Education: An Exploration of Teachers' Capabilities in  
Implementing Distance Learning in Southeast Sulawesi, Indonesia

Researcher: Dina Puspita Pelenkahu

The Researcher is a Lund University student majoring in International Development and Management. Her research focus is on people development, educational programme management, and digital transformation contributing to SDG 4 Quality Education.

Participant Name :

Participant Email :

Thank you for your willingness to be interviewed as part of the above research project. The interview will take around 30 - 60 minutes and will be conducted through Zoom. The researcher does not anticipate that there are any risks associated with your participation, but you have the right to stop the interview or withdraw from the research at any time. Ethical procedures for academic research undertaken from Lund University require that interviewees explicitly agree to be interviewed and how the information contained in their interview will be used. This consent form is necessary for the researcher to ensure that you understand the purpose of your involvement and that you agree to the conditions of your participation. Would you therefore read and then sign this form to certify that you approve the following:

- the interview will be recorded, and a transcript will be produced;
- the transcript of the interview will be analyzed by the researcher;
- access to the interview transcript will be limited to the researcher and academic colleagues with whom they might collaborate as part of the research process;
- the actual recording will be kept by the researcher;
- any variation of the conditions above will only occur with your further explicit approval.

By participating in this interview, the interviewee also understands that his/her words may be quoted directly. With regards to being quoted, please check the boxes to any of the statements that you agree with:

- I agree to be quoted directly.
- I agree to be quoted directly if my name is not published and a made-up name (pseudonym) is used.
- I agree that the researcher may publish documents that contain quotations by me.

All or part of the content of your interview may be used:

- In academic papers, policy papers, or news articles;
- In other media that the researcher may produce such as spoken presentations;
- On other feedback events;
- In an archive of the research project as noted above.

Please indicate your date and time availability for conducting the interview:

I consent to process personal data about me in accordance with the above.

Month, day, year:

Please type in your name in BLOCK letters to indicate an e-signature:

## Appendix B. Interview Guide



**LUNDS**  
UNIVERSITET

### Interview Guide

**Topic:** Scaling Up Digital Transformation in Education: An Exploration of Teachers' Capabilities in Implementing Distance Learning in Southeast Sulawesi, Indonesia

**Target people:** Secondary school teachers

**Purpose:** To explore the challenges faced by teachers on availability, accessibility, quality, and other bottlenecks of digital education in Indonesia that could risk inequitable access to quality education for all (SDG 4).

**Location:** Indonesia

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Date and time:

Name of interviewee:

School Name:

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#### Interview questions:

1. How long have you been teaching?
2. What subject(s) do you teach?
3. How many students do you have in your class(es)?
4. What kind of tools do you usually use for teaching? (online or offline)
5. Have you been using information and communication technology (ICT) in your teaching method before the pandemic? If yes, in what ways?
6. In what ways do you teach differently pre-covid and post-covid?
7. What are your main resources for online teaching (government platforms, private educational providers, etc)?
8. What are your main challenges in online teaching?
  - a. Personal challenges
  - b. Technological challenges
  - c. Pedagogical challenges

9. Do you receive any training for online teaching from your school and/or the government? If yes, do you think the training help ease your teaching method?
10. What are your thoughts on the digital education platforms managed by the government? Do you think the platforms help ease your teaching process during distance learning?

## Appendix C. List of Respondents

No.	Pseudonyms	Gender	School Name	Administrative Role	Subject	Region	Language
1	T1	F	02 Senior High School	-	English	South Konawe	English
2	T2	M	04 Senior High School	-	English	Kendari	English
3	T3	M	04 Senior High School	-	English	Kendari	English
4	T4	M	03 Senior High School	Headmaster	English	Bombana	English
5	T5	F	02 Senior High School	-	English	South Konawe	English & Bahasa
6	T6	M	02 Senior High School	Headmaster	English	South Konawe	English
7	T7	F	02 Senior High School	-	Biology	South Konawe	Bahasa
8	T8	F	02 Senior High School	Head of School Facilities	Chemistry	South Konawe	Bahasa
9	T9	M	01 Senior High School	-	English	Kendari	English
10	T10	M	02 Senior High School	-	Mathematics	South Konawe	Bahasa