

## **Navigating Digitalization**

Intersectional Perspectives on the Digital Divide and the  
Use of Digital Tools in the Introduction Programme

JULIANA KOURY GAIOSO

### **SUPERVISOR**

Hanne Haaland

### **University of Agder, 2024**

Faculty of Social Sciences

Department of Global Development and Planning

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## DECLARATION

I, Juliana Koury Gaioso, hereby declare that this master's thesis, titled "Navigating Digitalization: Intersectional Perspectives on the Digital Divide and the Use of Digital Tools in the Introduction Programme", is my original work. I also state that I have not submitted it to any other university or educational institution other than the University of Agder, Norway.

Place: Kristiansand, Norway

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Date: December 2024



Juliana Koury Gaioso

## **ABSTRACT**

This thesis investigates the intersectional dynamics of the digital divide and the use of digital tools within Norway's Introduction Programme (IP). The study examines how digitalization efforts in the IP contribute to the social and economic inclusion of immigrant women in the region of Agder. Utilizing an intersectional framework, this research addresses the unique barriers and opportunities presented by the interplay of gender, educational and geographic background and digital literacy.

The qualitative study draws on participant observation, semi-structured interviews, and focus group discussions, encompassing immigrant women and educators in the IP. The findings reveal critical disparities in digital access and literacy, shaped by intersecting factors such as educational background, language proficiency, and previous technological exposure. These disparities significantly affect participants' integration experiences, influencing their engagement with the digital tools designed to support their social and economic inclusion.

Through thematic analysis, this thesis identifies key challenges and opportunities in the digitalization of integration programs. It highlights the pivotal role of educators in bridging digital literacy gaps and the importance of culturally sensitive, tailored strategies to empower immigrant women. The study concludes with actionable policy recommendations aimed at enhancing the effectiveness of digital integration initiatives, ensuring they align with the SDGs and Norway's broader goals of equity and social inclusion in a rapidly digitalizing society.

By offering a nuanced understanding of the digital divide within the IP, this research contributes to the theoretical discourse on intersectionality and digital inclusion, while providing practical insights for improving integration policies and practices in Norway.

## SAMMEDRAG

Denne masteroppgaven undersøker de interseksjonelle dynamikkene i den digitale kløften og bruken av digitale verktøy i det norske Introduksjonsprogrammet (IP). Studien undersøker hvordan digitaliseringstiltak i IP bidrar til sosial og økonomisk inkludering av innvandrerkvinner i Agder-regionen. Ved hjelp av en interseksjonell tilnærming tar forskningen for seg de unike barrierene og mulighetene som oppstår i skjæringspunktet mellom kjønn, utdannings- og geografisk bakgrunn samt digital kompetanse.

Den kvalitative studien bygger på deltakende observasjon, semi-strukturerte intervjuer og fokusgruppediskusjoner med innvandrerkvinner og lærere i IP. Funnene avdekker kritiske forskjeller i digital tilgang og kompetanse, som er påvirket av faktorer som utdanningsnivå, språkferdigheter og tidligere erfaringer med teknologi. Disse forskjellene påvirker i betydelig grad deltakernes integreringsopplevelser og deres bruk av de digitale verktøy som er utviklet for å støtte deres sosiale og økonomiske inkludering.

Gjennom tematisk analyse identifiserer oppgaven sentrale utfordringer og muligheter knyttet til digitalisering av integreringsprogrammer. Den fremhever lærernes avgjørende rolle i å bygge bro over gapene i digital kompetanse og betydningen av kultursensitive og skreddersydde strategier for å styrke innvandrerkvinner. Studien avsluttes med konkrete politiske anbefalinger for å styrke effektiviteten av digitale integreringstiltak, og sikrer at de samsvarer med bærekrafts målene (SDG-ene) og Norges bredere mål om likestilling og sosial inkludering i et stadig mer digitalisert samfunn.

Ved å tilby en nyansert forståelse av den digitale kløften innenfor IP, bidrar denne forskningen til den teoretiske diskursen om interseksjonalitet og digital inkludering, samtidig som den gir praktiske innsikter for å forbedre integreringspolitikken og -praksisen i Norge.

## ACKNOWLEDGEMENT<sup>1</sup>

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I'm endlessly thankful to my family for their love and support. To Brian, whose constant belief in me (even when I questioned it myself) kept me going; to my daughter, Marina, for being the ultimate source of inspiration; and to my parents, Telma and Manoel, and sister, Gabriela, who, despite the distance, have always been a source of support.

A heartfelt thank you to my grandmothers, Donina Nunes Koury and Mariana da Silva Gaioso, whose resilience, determination, and ability to defy the odds have been the foundation of my life. Overcoming illiteracy until their fifties, and now, in their eighties they have enough level of digital literacy to stay connected despite the Atlantic between us. They are true survivors, and I'm proud to carry their legacy forward. This thesis is dedicated to them.

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<sup>1</sup> *In the process of preparing this thesis, 'UiO Chat,' an AI-based tool for proofreading and linguistic improvement, was used to identify and correct grammatical errors and to improve sentence structure. This assistance was crucial for ensuring linguistic clarity and correctness in the text (UiO Chat, 2023).*

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## LIST OF ABBREVIATIONS AND ACRONYMS

<b>AI</b>	Artificial Intelligence
<b>API</b>	Application Programming Interface
<b>APP</b>	Application or Application Programme
<b>CV</b>	Computer Vision
<b>CEFR</b>	Common European Framework of Reference for Languages
<b>ChatGPT</b>	Chat Generative Pre-Trained Transformer
<b>EEA</b>	European Economic Area
<b>EU</b>	European Union
<b>Feide</b>	Felles Elektronisk Identitet
<b>GDPR</b>	General Data Protection Regulation
<b>Gendig</b>	Gender and Digitalisation across context
<b>ICTs</b>	Information and Communication Technologies
<b>IMDi</b>	Directorate of Integration and Diversity
<b>IOM</b>	International Organization for Migration
<b>IP</b>	Introduction Programme
<b>KI</b>	Kunstig Intelligens
<b>KI i skolen</b>	Artificial Intelligence in Schools (Norwegian-specific tool discussed)
<b>ML</b>	Machine Learning
<b>NAV</b>	Norwegian Labour and Welfare Administration

<b>Nettskjema</b>	Norwegian online data collection and transcription tool
<b>NPM</b>	New Public Management
<b>NSD</b>	Norwegian Centre for Research Data
<b>SDGs</b>	Sustainable Development Goals
<b>Sikt</b>	Norwegian Agency for Shared Services in Education and Research
<b>SSB</b>	Statistisk sentralbyrå
<b>UDI</b>	Norwegian Directorate of Immigration
<b>UiA</b>	University of Agder
<b>UiB</b>	University of Bergen
<b>UiO</b>	University of Oslo
<b>UiO Chat</b>	University of Oslo's privacy-friendly GPT chat
<b>UN</b>	United Nations

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## FOREWORD

This thesis is the culmination of my academic and personal journey as an immigrant in Norway. I arrived in 2016, and one of the first privileges and responsibilities I had was attending the Norwegian *Voksenopplæring* program, a key part of integration policy. It was there that I met incredibly resilient women who, while learning a new language and adapting to a society that promotes their rights, also felt the invisible forces holding them back.

My academic path in Norway began with a bachelor's degree and continued with a master's in Global Development, Crisis, and Change at UiA, of which this thesis is the product. As I progressed, my understanding of the challenges faced by immigrants deepened, as did my awareness of my own privileges and struggles in navigating a new society. The invisible forces started to take shape, giving way to theories and frameworks. As a research assistant on the *Gender and Digitalisation Across Contexts* (Gendig) project, I gained valuable insight into the digital divide within academic circles, an experience that underscored how access to technology profoundly affects social inclusion, widening the gap for marginalized groups.

My exposure to decolonial and feminist epistemologies during the studies deepening and grounding my insights into global inequalities. These perspectives have shaped my critical approach to integration and inclusion, emphasizing power dynamics and social justice.

Ultimately, I hope this research offers a more inclusive and thoughtful understanding of integration, resilience, and equity in the digital age. Which is marked by contradictions, as poetically composed Caetano Veloso in *Anjos Tronchos* (*Crooked Angels*):

*Some crooked angels from Silicon Valley  
The kind who lives in the dark even in broad daylight  
Said: Be virtuous in the vice  
Of screens with blues bluer than blue*

*Now my story is a dense algorithm  
That sells blindness to real sellers  
My neurons have found a new, other rhythm  
And more, and more, and more, and more, and more*

[Translated by the author]

# CHAPTER ONE: INTRODUCTION

## 1.1 Background

In the increasingly interconnected and digitized world, Norway stands as an example of a nation during a rapid digital transformation. As technology continues to permeate all aspects of society, from education to the workforce and everyday life, there is a growing expectation that individuals, regardless of age or background, should possess a consistent level of digital literacy. This transformation prompts a critical inquiry into the multifaceted dimensions of Norway's digitalization and the following societal implications, with the aim of understanding how digital literacy, technology adoption, and the overall socioeconomic landscape interact. The evolving digital landscape raises concerns about exclusion, as uneven digitalization risks marginalizing vulnerable groups. This concern is particularly pertinent for the immigrant and refugees in the Norwegian context.

Norway, like many developed countries, boasts a significant immigrant population, comprising around 16% of its total inhabitants (Statistisk sentralbyrå, 2023). In accordance with Norway's immigration policy, individuals granted asylum, and their families are not only entitled to but also obligated to complete the Introduction Programme (IP). This program is mandated for all municipalities accommodating asylum recipients, targeting recently arrived foreign nationals aged between 18 and 55 who seek to attain "basic qualifications" after receiving asylum. The Directorate of Integration and Diversity (IMDi) claims that the program is to guarantee that people with an immigrant background are not left behind in the school system, or that adult immigrants are given the opportunity to develop their skills in line with their own needs to be included in the labour market (Integrerings- og Mangfoldsdirektoratet, 2019).

Amid the rapidly evolving digital age, the concept of "basic qualifications" has naturally evolved to encompass a certain level of technological literacy and engagement with the digital landscape. The digital transformation has been further accelerated by the COVID-19 pandemic, which has significantly reshaped presential education to remote learning. This crisis has opened new avenues for digital learning and skill development while also exacerbating inequalities, since not all individuals have access to digital tools, and even basic skills to navigate on the cyberspace. Effort has been made to include individuals who received asylum in the IP.

## **1.2 Motivation of the Study**

This study is motivated by both deeply personal experiences and the broader societal need to address the challenges some immigrant women face in navigating digitalization. As an immigrant from Latin America and the Amazon region, with a bachelor's degree in journalism and professional experience, I have faced, and continue to face, numerous challenges in integrating into Norwegian society, aiming a parity with Norwegian peers with same work and educational background. Despite my trilingual abilities (Portuguese, English and Norwegian) and relatively high level of digital literacy, I have encountered systemic barriers such as discrimination, objectification, and scepticism regarding my intentions, working ethics, skills and abilities. I have struggled to find employment aligned with my qualifications, been pushed toward low-paying jobs like cleaning and part-time interpreting, which helped financially and at the same time was source to mental and physical health problems.

My personal journey of integration has been supported by my Norwegian partner and his family, providing a safety net that many immigrant women lack. Even with this support and my digital skills, enabling me to apply for jobs, manage schedules, book appointments, and pursue education, I have often felt the weight of systemic inequities. These experiences compel me to consider the plight of those with fewer advantages: women who lack English proficiency, formal education, or access to digital tools. How do they navigate such a complex landscape?

Academically, this study is driven by the critical need to address digital inequality in a world increasingly shaped by technology. Access to education, employment, and social inclusion is now deeply intertwined with digital capabilities, yet marginalized groups, especially immigrant women, face compounded barriers due to intersecting of educational and geographic background. By exploring the lived experiences of these women, this research aims to amplify their voices and uncover practical strategies for closing the digital divide.

Norway's ambitions to be a global leader in digitalization and its commitment to equitable integration policies further inspire this study. These aspirations present a unique opportunity to investigate how national strategies intersect with the real-world experiences of immigrant women, particularly those participating in programs like the Introduction Programme. By addressing this critical gap, the study seeks to contribute to both academic scholarship and the development of more inclusive and effective integration practices.



### **1.3 Significance of the Study**

This study, "Navigating Digitalization: Intersectional Perspectives on the Digital Divide and the Use of Digital Tools in the Introduction Programme," addresses a critical issue at the intersection of digital transformation and refugee integration in Norway. By exploring the lived experiences of immigrant women in the Introduction Programme, this research provides valuable insights into the dynamics of digital literacy and its implications for social and economic inclusion. The significance of this study is multifaceted:

1. **Policy Implications:** The findings offer practical recommendations to inform policies aimed at bridging the digital divide. This is particularly relevant for addressing disparities in access to and use of digital tools within marginalized communities, aligning with Norway's digitalization and integration goals.
2. **Advancing Social Equity:** The research contributes to understanding how intersecting factors such as gender, socioeconomic status, educational background, and refugee status shape access to technology. By examining these dynamics, the study advocates for equitable solutions that prioritize the needs of vulnerable populations.
3. **Educational Relevance:** For educators and program facilitators, the study highlights the importance of developing tailored teaching methods and support structures. These efforts can enhance digital literacy and empower participants, enabling them to engage more effectively with Norway's increasingly digitalized society.
4. **Theoretical Contribution:** This study enriches the academic discourse on intersectionality and digital inclusion by applying these frameworks to the specific context of immigrant integration. It offers a nuanced perspective on the interplay between social identities and digital access, filling a critical gap in the literature.
5. **Global Context:** While focused on Norway, the study's findings have broader applicability for countries navigating the dual challenges of immigration and digitalization. The study aligns with the United Nations (UN) Sustainable Development Goals (SDGs), particularly Goals 4, Quality Education, 5, Gender Equality, 8, Decent Work and Economic Growth, and 10, Reduced Inequalities, by addressing digital literacy and inclusion challenges. These goals underscore the importance of inclusive

and equitable integration processes in achieving sustainable social and economic development globally (United Nations, n.d.).

By addressing these critical areas, this thesis not only contributes to the academic and policy landscape but also supports the broader goal of fostering inclusive and equitable digital transformation in an era of global migration.

## **1.4 Research Problem and Research Questions**

### ***1.4.1 Research Problem***

This research examines how digitalization in the Introduction Programme (IP) affects the inclusion of immigrant women in Southern Norway. As digital technologies continue to evolve in fast pace in the Norwegian context, they hold the potential to either include or exclude certain groups, contributing to the widening of the digital divide. The problem lies in understanding the role digitalization plays in either bridging or exacerbating this divide, particularly for immigrant women attending the IP. Additionally, the intersectional identities of these women, shaped by factors such as their educational background, nationality, previous access to technology, and literacy levels, complicate the essentialist view of “refugee women” as a homogenous group. Through an intersectional lens, this study investigates the dynamic between digital literacy, technology adoption, and broader social and economic inclusion. By examining these factors, the research aims to offer valuable insights for policy development, with the goal of fostering an inclusive and equitable digital transformation for immigrant women in the Agder region.

### ***1.4.2 Research Questions***

This research is centred around a primary question, with four supporting sub-questions designed to explore the various dimensions of digitalization within the IP. These sub-questions address key issues such as the role of technological tools, the usage of these tools, the participants perspectives on the impact of their digital inclusion and policy recommendations according to educators’ perspectives.

The main research question guiding this inquiry is: How does digitalization in the Introduction Programme contribute to the social and economic inclusion of immigrant women in Southern Norway?

- A. What are the specific digital tools and resources provided to immigrant women within the introduction program?
- B. How do women and educators in the introduction programs access and apply digital technologies, and what impact does this have on their learning experiences?
- C. According to women and educators' perspectives, how does the integration of digital technologies within the Norwegian introduction program impact the social and economic inclusion of immigrant women?
- D. From educators' perspectives, how effective are digital integration initiatives in the IP for socioeconomic inclusion, and what policy recommendations emerge from their experiences?

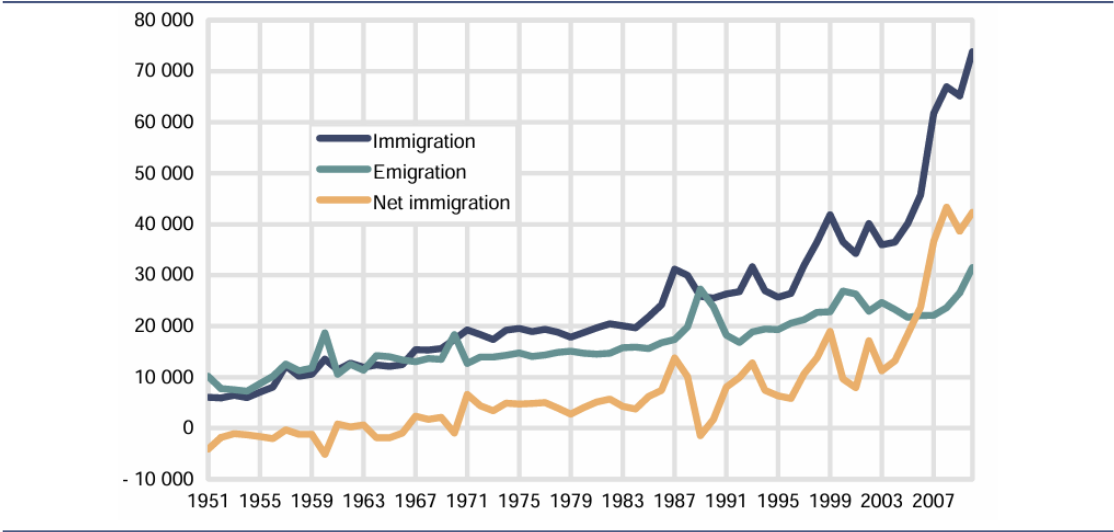
## **1.5 Context**

To provide a clearer understanding of the context, I have organized the discussion into five subsections. These address key themes: Migration in Norway, the Introduction Programme, the digital transformation within the Nordic Welfare State, the interplay of digitalization and gender in Norway, and the geographic framework of the study.

### ***1.5.1 Migration in Norway***

The history of migration in Norway has undergone significant shifts since the 20th century. Until the 1960s, emigration rates from Norway were higher than immigration (See **Figure 1**), with many Norwegians moving to the United States in search of economic opportunities and the “American dream.” This trend changed in the mid-20th century as the U.S. adopted stricter immigration policies, and Norway experienced economic growth. Since the 1970s, immigration to Norway has steadily increased, with notable peaks linked to global conflicts. For example, large numbers of asylum seekers arrived from Bosnia in 1993, Kosovo in 1999, and more

recently from Ukraine following the Russian invasion. Research shows that migration to Norway is shaped primarily by economic factors and immigration policies. Norway’s participation in the European Economic Area (EEA) and the Schengen Agreement has also facilitated an increase in immigration, making it easier for European residents to live and work in Norway (Cappelen & Skjerpen, 2012).



**Figure 1:** Migration to Norway. 1951-2010

**Source:** (Cappelen & Skjerpen, 2012)

Immigration, driven by diverse factors such as war, love, freedom, education, and employment, remains a pivotal focus in Norway. For instance, the Russian invasion of Ukraine in 2022 significantly increased the influx of refugees, with over 80,000 arrivals according to official government sources (The Norwegian Directorate of Immigration , 2024). This surge has tested Norway’s capacity and policies regarding asylum, raising questions about the sustainability of its traditionally open stance toward large-scale asylum seekers arrivals. Only in this year, the UDI registered until October, 19,819 individuals had applied for asylum or collective protection. Among these, 10,996 were residing in asylum reception centres, underscoring the urgent need for housing and comprehensive support services. Furthermore, the issuance of 7,492 family immigration permits during the same period demonstrates the country’s commitment to facilitating family reunification and highlights how immigration patterns are often shaped by global events and evolve over time (The Norwegian Directorate of Immigration, 2024).

Norway's reputation as a nation with a robust welfare system and equitable income distribution positions it as one of the most immigrant-friendly countries globally. However, before the invasion in Ukraine, incidents revealed a more nuanced picture of its refugee's support policies, which are sometimes constrained by capacity and influenced by political considerations. For example, after the 2020 fire at the Moria refugee camp in Greece, Norway committed to accepting only 50 people displaced from that camp. This limited response ignited public outcry, sparking the viral hashtag #50erikkenok ("50 is not enough") (Amnesty International, 2020). The Norwegian government defended its decision by citing logistical challenges and insufficient capacity to take in more refugees at that time. This incident reflects the ongoing tensions between Norway's international commitments, its capacity for humanitarian action, and the political realities of managing immigration in a globalized world.

Besides that, there are significant disparities in healthcare and labour market opening to immigrants. The COVID-19 pandemic impacted in already existing issues they (we) suffered. Social isolation, economic instability, and inequities in accessing public services, increase the mistrust in government and health authorities, and a growing sense of "us vs. them". These challenges, compounded by structural inequalities, highlight the ongoing disparities immigrants face. Mental health issues have consistently been found at a higher rate among adult immigrants, specifically among women and those from low- and middle-income countries compared to Norwegians and the general population (Abebe as cited in Arora et al., 2022). Immigrants' earnings and employment rates are considerably lower than the rest of the population, reflecting their struggle more with economy than the general population in terms of making ends meet and managing unforeseen and ongoing expenses (Brekke & Mastekaasa, Vrålstad & Wiggen as cited in Arora et al., 2022). Prejudices are also an issue for immigrants and children of immigrants, who consistently face comments about their gender, ethnicity, skin color and religion (Midtbøen et al. as cited in Arora et al., 2022).

In summary, Norway's migration history has evolved from emigration-dominated patterns to becoming a destination for immigrants shaped by global conflicts, economic opportunities, and policy shifts. While Norway has built a reputation as an immigrant-friendly nation with robust welfare systems, recent events, such as the Ukrainian refugee crisis and the COVID-19 pandemic, highlight the complexities and limitations of its immigration policies and integration efforts. Persistent disparities in healthcare, the labour market, and social inclusion underscore

systemic challenges faced by immigrants, revealing tensions between Norway's humanitarian ideals and the practical realities of managing migration in a globalized world. These issues illustrate the need for more equitable, inclusive policies that address structural inequalities and foster meaningful integration for all immigrants.

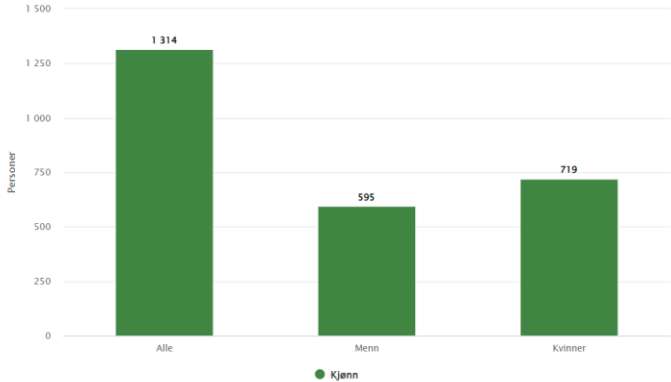
### ***1.5.2 Introduction Programme***

The Introduction Programme is a structured integration initiative in Scandinavian countries (Sweden, Denmark, and Norway) aimed at helping new immigrants and refugees integrate into society, primarily by reducing unemployment and reliance on welfare services. Sweden introduced its program in 1991, followed by Denmark in 1999 and Norway in 2004, largely in response to political and societal concerns about high unemployment and welfare dependency among new arrivals. Earlier integration measures were criticized for lacking quality, continuity, and intensity, and for failing to effectively communicate the host countries' core values to immigrants. Some programs mandate participation, and financial allowances vary, affecting the incentive structure for participants. Additionally, all three countries emphasize a personalized approach by ensuring that participants have an "individual plan" tailored to their needs, reflecting an effort to empower individuals within the integration process. This structure aims to foster self-sufficiency and reduce long-term dependency on welfare (Fernandes, 2015).

The IP in Norway for adult immigrants focuses on providing education and support to facilitate integration into Norwegian society. The municipalities share the responsibilities encompassing the identification and support of immigrant groups in their quest for gainful employment and educational opportunities, alongside their settlement into the host society (The Directorate of Integration and Diversity, 2022). It is structured to promote language proficiency, social studies, and employment attachment. The goal of the program is to help participants either enter the workforce or continue their education in Norway. While participation is mandatory for many immigrants, there is a nuanced distinction between "participation," which essentially means attendance, and actual engagement in the content of the program (Bjørge, 2011). Education is not value-neutral and is shaped by political forces, with the curriculum serving as a tool for imparting certain societal values and priorities. Teachers play a key role in interpreting the curriculum and determining how it is delivered, particularly in the context of adult immigrants, whose participation in the program is generally not optional (Shor as cited in

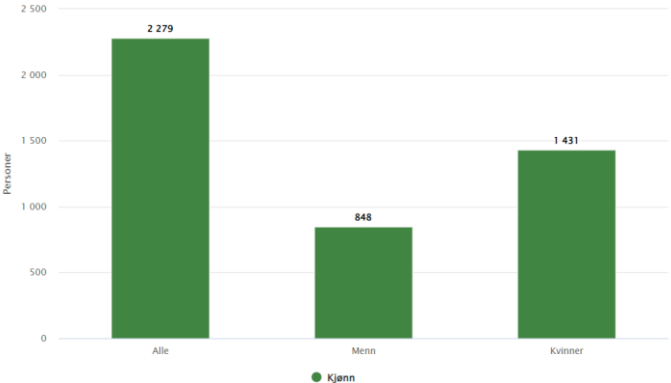
Bjørge, 2011). Thus, the IP is an essential part of the integration process, aiming to prepare immigrants for active participation in Norwegian.

Given the relevance of these municipal endeavours to the scope of this research, an examination of the municipalities within the Agder County assumes paramount significance, the gender gap increased among the individuals attending the IP. Women represent over 54% in 2020 and 62% in 2023 (See **Figure 2** and **Figure 3**). There was no data collection in previous years. The response towards the program is highly positive, according to the opinion of the participants. 56% of the people that completed the introduction program in 2021 in Agder are employed or studying (Integrerings- og mangfoldsdirektoratet, 2022).



**Figure 2:** Number of participants in the introduction Programme in Agder 2020

**Source:** (Integrerings- og mangfoldsdirektoratet, 2022)



**Figure 3:** Number of participants in the Introduction Programme in Agder 2023

**Source:** (Integrerings- og mangfoldsdirektoratet, 2022)

Relying on financial support or in the IP, one does not possess the autonomy to choose their place of residence anywhere within the country, these individuals are settled by each municipality they are assigned. The eligibility for participation in the IP and the receipt of initial economic benefits and other financial allowances from the municipality necessitates a formal agreement between the municipality and the state, through IMDi for the resettlement process. A stipulation for resettlement with public assistance is the prior grant of protective status to the individual in question (Integrerings- og mangfoldsdirektoratet, 2024).

According to the IMDi, the introduction program has articulated a particular focus on enhancing employment prospects among immigrant women who have been in a non-working or stay-at-home capacity and who require foundational qualifications (IMDi, 2022). Notably, the year 2022 witnessed an influx of over 35 thousand immigrants with refugee status due to the Russia-Ukraine conflict (Statistisk sentralbyrå, 2023). It is worth noting that most of the people forced to flee the country are women and children, as adult men have the duty to remain in their home countries to participate in conflict. Within this context, it is noteworthy that over five thousand immigrants have relocated to Agder County in 2022 (Statistisk sentralbyrå, 2023). This significant influx of refugees, particularly women, underscores the pressing need for education and skills development to facilitate their entry into the Norwegian labour market, where digitalization is playing an increasingly central role.

### ***1.5.3 The Digital Transformation of the Nordic Welfare State***

Norway's advanced digital infrastructure, a cornerstone of its modernized welfare state, presents both significant opportunities and notable challenges in addressing the needs of marginalized groups, particularly immigrant women. On one hand, the digitalization of welfare services has the potential to improve accessibility and efficiency, enabling broader public participation and aligning with the Nordic welfare state's commitment to universal service provision. However, the rapid integration of digital tools like AI and machine learning also raises significant concerns about exclusion, particularly for groups already facing systemic disadvantages (Huby et al., 2024).

Immigrant women, for example, as this study shows, often encounter language barriers, limited digital literacy, and intersecting socio-economic challenges, which can amplify their risk of exclusion in an increasingly digitalized welfare environment. While Norway's public sector



benefits from extensive citizen data, the reliance on AI to optimize service delivery or detect fraud may inadvertently reinforce inequalities (Tucker & Strange, 2024, as cited in Huby et al., 2024). Scholars warn that such technologies could erode trust and exacerbate marginalization if not deployed transparently and inclusively. The risks of surveillance, reduced human oversight, and algorithmic bias challenge the Nordic principles of equality and solidarity.

Furthermore, Norway's digital transformation intersects with the market-driven influences of New Public Management (NPM), where private sector involvement in welfare technologies might further complicate the balance between efficiency and equity (Esping-Andersen, 1990; Sandvin et al., 2020, as cited in Huby et al., 2024). Ensuring that marginalized groups like immigrant women are not left behind requires more than advanced infrastructure, it demands robust strategies that prioritize inclusion, accountability, and empowerment. A critical examination of these systems is necessary to align digital innovation with the values underpinning the Norwegian welfare state, avoiding a shift toward "public surveillance capitalism" and safeguarding the social contract that ensures equal opportunities for all (Corneliussen et al., 2023).

#### ***1.5.4 Digitalization and gender in a Norwegian context***

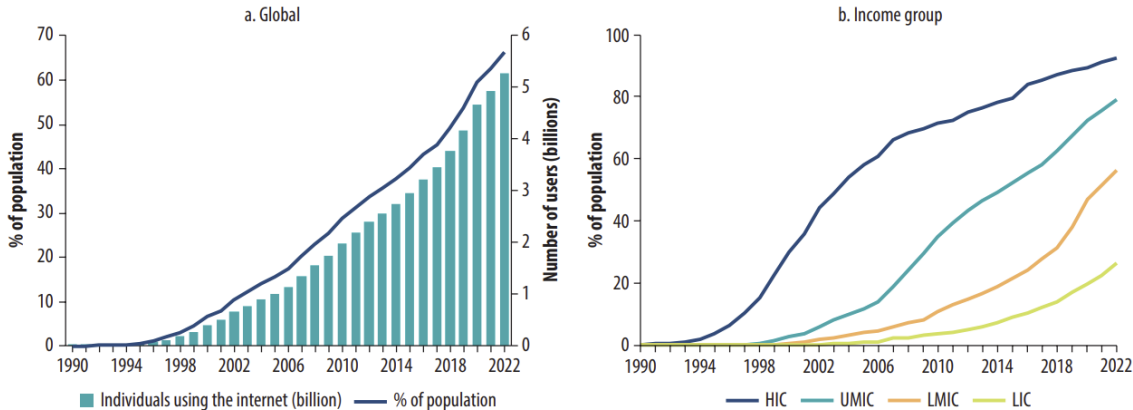
In this year, the Norwegian government released a strategy for the next six years called "The Digital Norway of the Future", predicting

In 2030, Norway will be the most digitalised country in the world and will have succeeded in the digital transformation of our society. Digitalisation will make everyday life easier and safer for citizens, make businesses more competitive and improve the public sector (Norwegian Ministry of Digitalisation and Public Governance, 2024).

To achieve that plan, the document highlights its priorities which includes increasing data sharing and harnessing the opportunities in data and data-driven innovation, leveraging opportunities in artificial intelligence, speeding up the green and digital transition, promoting an adaptable and innovative business sector while maintaining trust, strength inclusion, and safeguarding considerations for children and young people.

The growth in global internet access over time is closely linked to a country's income level, with high-income countries experiencing faster adoption, while low-income countries show

slower progress (See **Figure 4**). Looking to the present, Norway is ahead in digitalization compared to many countries from the Global South, for instance. Through firsthand experiences, for instance, in Norway, even commonplace activities like cash payments have been replaced by digital transactions. Social interactions, event planning, and information sharing are facilitated through various social media platforms. The realms of education, employment, and training have all transitioned into the digital domain. Book an appointment with the police or directorate of immigration are online, with warning on their websites to not show up or call the offices. These significant digital transformations present distinct challenges, particularly for newcomers who, historically, have faced geographical disparities limiting their access to these technologies.



**Figure 4:** Internet users as a share of population, global and by country income group, 1990-2022

**Source:** (World Bank Group, 2023)

Norway’s digital inclusion efforts, particularly within the IP, are significantly shaped by the country’s advanced digital infrastructure, which is one of the most developed in the world. In the landscape of gender and digitalization in Norway, a notable challenge persists. Data from the Statistics Norway (SSB) indicate that since 2016, the percentage of women in the tech sector has increased by a mere 2.2 points, highlighting a slow progression towards gender equality in the field. The significance of addressing this issue arises from the inherent bias in technology development. As it stands, technology solutions are predominantly created by men, thus, these

solutions are inherently tailored to men. This predisposition in technology development is far-reaching, as it affects the user population, creating challenges for both women and men. Mostly, marginalized women and in vulnerable situations, with technologies not fitting their needs (Kristiansand Kommune, 2023).

The Directorate for Higher Education and Competence (Kompetanse Norge), offers valuable insights to municipalities seeking to enhance the digital skills of participants in the introductory program. While not mandatory, it serves as a significant support system for the program's obligatory content. The official website states that the initiative underscores the importance of providing tailored and pertinent digital skills training to participants within the introductory program. The individual determination of participants ensures a flexible approach that meets diverse learning needs. At its core, the initiative strives for a broader objective – the empowerment of the entire population with digital self-sufficiency. This empowerment equips individuals to contribute actively as informed and engaged members of society. This vision encompasses participants within the introductory program, highlighting the pivotal role of digital competence in contemporary societal engagement. For municipalities, the onus lies in the provision of relevant and adaptive digital competence training, integral to the qualification process, in realizing this overarching mission (Digidel, 2021) (Integrerings- og mangfoldsdirektoratet, 2021).

### ***1.5.5 Geographic Study Area***

Agder County's demographic and geographic characteristics significantly shape the implementation of the IP and digital inclusion initiatives. Geographically, Agder is located in Southern Norway, covering a mix of urban and rural areas, which creates diverse logistical challenges and opportunities for program delivery (See **Figure 5**). With a population of 319 850 spread across 25 municipalities, including the urban hubs of Kristiansand and Arendal, Agder's varied settlement patterns demand tailored approaches to ensure equitable access to resources and support for immigrants (Statistisk sentralbyrå, 2024).



**Figure 5:** County borders, Norway, 2024

**Source:** (Regjeringen.no, 2024)

The urban centres like Kristiansand and Arendal, with more concentrated populations and advanced infrastructure, are better equipped to implement digital inclusion initiatives effectively. These cities can leverage their connectivity, institutional capacity, and access to educational resources to provide immigrant women with digital tools and training as part of the IP. However, in the more remote and rural parts of the county, where populations are sparse and infrastructure may be less developed, implementing such programs can be more complex. Limited internet access, fewer public transportation options, and a scarcity of tailored digital literacy resources pose barriers that require innovative solutions, such as mobile training units or satellite learning programs.

Furthermore, Agder's position within Norway's broader geographic isolation adds another layer of complexity (See **Figure 6**). As a region that may not see as many immigrants arriving via land borders due to Norway's Schengen alignment and geographic constraints, it might have a more concentrated immigrant population compared to other regions. This demographic concentration could allow for more focused, community-based approaches to integration, but

also risks isolating immigrant groups in smaller, less connected municipalities, exacerbating the digital divide.



**Figure 6:** The Schengen Area 2024

**Source:** (Lambert, 2024)

**1.6 Methodology in brief**

This study adopts a qualitative research approach to explore the perspectives of immigrant women on digitalization applied in the IP. By focusing on the lived experiences of participants, the research seeks to understand how factors such as education background, geographic background and socio-economic status intersect to shape these women's engagement with digital tools. The theoretical framework of intersectionality is central to the study and are also included in the methodology, allowing for an analysis of how these multiple identities create unique challenges and opportunities for immigrant women in the context of the Norwegian Introduction Programme.

Data were collected using a combination of semi-structured interviews, participant observation, and a focus group discussion. Interviews were conducted with immigrant women and educators to gain in-depth insights into the digital literacy barriers and opportunities within the

programme. Participant observation allowed for a deeper understanding of how women interact with digital tools in the classroom, capturing real-time usage and classroom dynamics.

Thematic analysis was employed to identify and categorize patterns across the data. This process was iterative, ensuring that emerging themes were continuously refined and interpreted within the context of the participants' experiences. Ethical issues were considered throughout the study, ensuring informed consent, confidentiality, and sensitivity to the researcher's positionality. These steps were critical in addressing potential biases and maintaining the integrity of the findings.

## **1.7 Thesis structure**

This thesis is divided into six chapters, each addressing specific requirements for the master's thesis in the Global Development, Crisis, and Change programme at UiA. This approach results in the structure presented in this thesis:

- 1. Introduction:** This section provides the context, background, and motivation for the study, presenting the research problem and the specific research questions. It outlines the significance of the study within the broader themes of migration in Norway, the digital transformation of the welfare system, and the intersection of digitalization and gender in the Norwegian context. Additionally, it introduces the geographic area of study and gives a brief overview of the methodology applied.
- 2. Literature Review and Theoretical Framework:** This section reviews the relevant literature, exploring key concepts and theories that support the discussion of digitalization. It provides a comprehensive understanding of existing research related to digital inclusion, migration, and gender, while also situating the study within the theoretical framework that informs the analysis, particularly in relation to intersectionality and digital divide theory.
- 3. Methodology:** This section outlines the systematic approach applied in the study, detailing the research design, data collection methods, and analytical strategies. It also highlights the ethical considerations taken into account, including informed consent, confidentiality, and reflexivity. The methodology section emphasizes the qualitative nature of the research and the ways in which it engages with participants to uncover their experiences and perspectives.

- 4. Empirical Findings:** This section presents the findings from the data collected, categorized under the relevant themes. It outlines the key results and highlights the insights gained from interviews, focus groups, and other data sources, providing a detailed account of the participants' experiences and challenges related to digitalization, migration, and gender in the Norwegian context.
- 5. Analysis:** This section discusses the empirical findings in-depth, linking them to the theoretical framework and the themes identified in the data. It offers reflections on the longitudinal implications of the findings, considering how these challenges and opportunities evolve over time and how they impact the integration and empowerment of immigrant women in Norway.
- 6. Conclusion:** This section summarizes the main findings and contributions of the study, offering practical recommendations based on the analysis. It also acknowledges the limitations of the study, providing a balanced view of the scope of the research and suggesting areas for future exploration.

# CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

## 2.1 Introduction

The literature review and theoretical framework provide the foundation for this study, weaving together key concepts and theories that illuminate the intersections of digitalization, integration, and intersectionality. These frameworks are essential for understanding how digital inclusion efforts shape and are shaped by the lived experiences of immigrant women participating in the Introduction Programme (IP). By critically engaging with concepts such as the digital divide, digital literacy, and artificial intelligence (AI), alongside broader themes of inclusion and empowerment, this chapter situates the research within a rich theoretical landscape. This approach not only clarifies the study's analytical lens but also highlights the complex interplay of structural, social, and individual factors influencing digital integration in the Norwegian context.

## 2.2 Main concepts

The theoretical framework guiding this study is intersectionality, which is integral to the conception, methodology, and discussion of the research. To understand the complex interaction between intersectionality, digitalization, and integration, it is necessary to explore related concepts that help frame these phenomena. Therefore, I have divided this subsection into key supporting concepts. This structure aims to facilitate navigation and to clarify how these concepts intersect within the broader context of digital inclusion and immigrant integration.

### 2.2.1 *Intersectionality*

The concept of intersectionality is central to this study as it challenges the use of the term “refugee” and “women,” which often fails to capture the full complexity of their identities. By adopting an intersectional lens, this research aims to highlight how overlapping identities, such as gender, education background, nationality, and the refugee status, shape the unique experiences and barriers faced by individuals. Intersectionality allows for a nuanced



understanding of the layered inequalities and disadvantages individuals experience, which cannot be fully understood by considering each aspect of identity in isolation.

Coined by legal scholar and civil rights advocate Kimberlé Crenshaw in 1989, intersectionality was introduced to address the compounded discrimination faced by Black women, discrimination that could not be understood through race or gender alone. For instance, issues like domestic violence were neglected by anti-racist movements, while Black women's experiences were sidelined in feminist civil rights efforts that primarily focused on white women. Crenshaw (1991) emphasized that race and gender are interconnected and cannot be separated when understanding the lived experiences of marginalized groups.

Over time, intersectionality has evolved to examine how various social identities interact and overlap, often creating unique experiences of discrimination and privilege. While Crenshaw's framework was designed to navigate the tensions between asserting multiple identities and the necessity of group politics, it has also been expanded to critique the essentialist approach, which reduces individuals or groups to a core set of predefined attributes, often ignoring variation, context, and complexity (Crenshaw, 1991).

This study uses an intersectional framework to better understand how diverse factors interact to shape the experiences of women in the IP. By focusing on these intersections, it allows for a more comprehensive analysis that considers how these different identities combine to create both opportunities and barriers. The research avoids essentialist labels like "refugee women," instead recognizing the complex, multi-dimensional realities of each participant, which was built earlier than their status as refugees. In this way, it contributes to a more holistic understanding of digital inclusion. Besides that, intersectionality will particularly shape the data analysis by providing a nuanced framework to understand how multiple overlapping social identities, such as gender, refugee status, nationality, and education, interact to create unique experiences of inclusion and exclusion in digital contexts.

### ***2.2.2 Digital divide and digital inclusion***

To fully understand the concept of digital inclusion of the participants, it is essential to understand first the concept and phenomenon of digital divide. The term is used to describe and analyse disparities in access to and use of digital technologies across different populations.

There are at least three main aspects related to the concept: inequalities in access ICTs, gaps in digital literacy, and the factors that contributes the disparity, such as economic status, education, geography, age, gender. The digital divide underscores the challenges faced by individuals who lack the infrastructure, skills, or opportunities necessary to engage with modern digital tools, creating significant barriers to their participation in an increasingly digital society (Esteban-Navarro et. al., 2020; Heeks, 2002).

The term gained prominence in 1995 with a report from the U.S. Department of Commerce, which highlighted inequalities in access to emerging ICTs both domestically and internationally. Esteban-Navarro and colleagues (2020) identify two key dimensions of the digital divide: access to digital tools and the ability to use them effectively. This inequality is not only about access to technological tools like smartphones, computers, and the internet, but also about the skills needed to utilize these technologies. As a result, those without the necessary skills are often unable to take advantage of the opportunities digital tools offer, which can limit their ability to meet needs and improve quality of life.

As observed by Esteban-Navarro and colleagues (2020), the concept of digital inclusion is efforts by governments or organizations to make ICTs accessible to people who currently lack them. These efforts are evident in the IP, which aims to equip the asylum seekers with the digital skills and access necessary for integration into an increasingly digitalized society, by addressing the challenges of both infrastructure and digital literacy. More than simply connecting people, according to the author, digital inclusion involves understanding how ICT is used and the factors that influence usage. Addressing the digital divide requires considering various factors, including disparities in access to ICTs and differences shaped by geography, demographics, education, socioeconomic conditions, and cultural influences. These elements significantly impact individuals' abilities and skills to effectively engage with digital technologies (p. 57).

In this research, I used these concepts to define my research questions and analyse the data, emphasizing three main dimensions of the digital divide:

- **Access to Technology:** Evaluate the types of ICTs available to participants and assess how these tools influence their ability to engage in digital environments.

- **Skills Gap:** Investigate participants' levels of digital literacy, focusing on their interaction with digital technologies, the specific purposes of their usage, and the contexts in which these skills are applied.
- **Factors Driving Disparities:** Explore the underlying causes of digital inequities, emphasizing how intersecting identities, such as gender, socioeconomic status, education, and refugee status, shape participants' opportunities and challenges in achieving digital inclusion.

The aspect of factors driving disparities within the digital divide is closely intertwined with the concept of intersectionality, as it highlights how overlapping social identities influence individuals' experiences with digital technologies. For instance, a person's gender may intersect with their socioeconomic status, educational background, or refugee status to compound barriers to digital inclusion. A low-income female asylum seeker may face unique challenges, such as limited access to affordable ICTs, societal expectations around technology use, and restricted opportunities to acquire digital literacy skills. These intersecting identities create layers of disadvantage, making it crucial to approach digital inclusion efforts with an understanding of how multiple factors collectively shape participants' access, skills, and engagement. By applying an intersectional lens, we can better identify and address the nuanced, interconnected obstacles that hinder equitable participation in the digital landscape.

In summary, the concepts of the digital divide and digital inclusion are fundamental to understanding the barriers and opportunities faced by individuals in accessing and utilizing digital technologies. The digital divide highlights the disparities in infrastructure, skills, and opportunities, while digital inclusion emphasizes the importance of bridging these gaps to empower individuals and communities. This research integrates these frameworks to explore how participants engage with ICTs, identify their skill gaps, and examine the structural factors contributing to digital inequities. By focusing on access, digital literacy, and the interplay of social identities, this study sheds light on the multifaceted nature of digital inclusion and its role in fostering equitable participation in a digital society.

### ***2.2.3 Digital literacy***

Digital literacy is more complex than it may initially seem. While traditional literacy refers to the ability to read and write, as technology and information have become more accessible and sophisticated, the concept of literacy has expanded to include new dimensions. Digital literacy goes beyond simply using ICTs. It involves the ability to effectively navigate, evaluate, and create information using digital technologies. This includes understanding how to use tools like computers, smartphones, and the internet, as well as critically assessing digital content, ensuring online safety, and engaging with digital platforms in a responsible, ethical manner (Gilster, 1997; Radovanović, 2023).

Gilster (1997) defined digital literacy as the ability to understand and use information from various sources and in different formats when accessed through computers. His definition encompassed more than just technical skills, it emphasized the importance of critical thinking and the ability to effectively analyse and interpret digital information. Recently, Radovanović (2023) redefined digital literacy as more than just basic technical skills from the early internet era, such as browsing, text formatting, or email communication. In today's world of Web 3.0 and the upcoming fifth industrial revolution<sup>2</sup>, digital literacy demands a deeper, more comprehensive skill set. It requires the ability to understand and navigate emerging technologies like artificial intelligence (AI) and virtual platforms. This literacy includes skills in analysing, processing, designing, and producing information thoughtfully.

Digital literacy also emphasizes critical thinking in an environment where misinformation is prevalent, encouraging individuals to interact with AI and algorithms responsibly and strategically. In the case of AI, it is worth noting that, during this inquiry in the field work, I witnessed the implementation of specific language model AI-driven in the IP curriculum, based on ChatGPT, but protected by the Norwegian Government and public agencies. This evolved

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<sup>2</sup> The Fifth Industrial Revolution (Industry 5.0) focuses on advancing beyond the purely technology-driven innovation of Industry 4.0, emphasizing a human-centric approach that integrates sustainability, resilience, and social well-being alongside technological progress. Unlike its predecessor, which centered on automation, AI, and machine-to-machine communication, Industry 5.0 envisions collaborative interaction between humans and machines (Noblea et al., 2022).

concept of digital literacy is also relevant. Moreover, it involves ethical online behaviour, with a strong focus on data privacy, digital footprints, accountability, and the social impact of one's actions. These skills are essential not only for independent and critical thinking but also for fostering responsible, resilient, and collaborative digital citizens.

#### **2.2.4 AI**

Technically, AI, or artificial intelligence, refers to digital systems designed to automate or assist in tasks traditionally associated with human cognition, such as decision-making, problem-solving, learning, and creativity. AI often encompasses technologies like machine learning (ML) and computer vision (CV). ML focuses on learning patterns from large datasets and can handle various data types such as numerical, textual, and temporal data. On the other hand, CV specializes in processing and interpreting visual data. These technologies are used to automate recordkeeping processes, improve data analysis, and assist archivists in managing vast digital collections, often with the goal of increasing efficiency and precision (Crawford as cited in Cushing & Osti, 2022, p. 13). However, despite its advancements, AI relies heavily on human input to train and feed it with information, ensuring that it can function accurately, ethically, and effectively in diverse contexts.

The emergence of advanced language models like ChatGPT has fuelled a widespread fascination with AI, often overshadowing its broader historical and technical contexts. As Professor Pinar Heggernes of the University of Bergen noted, the underlying principles of AI have been in development since the 1980s, but the explosion of accessible digital data has now made these theories practical and impactful. Tools like ChatGPT create the illusion of interacting with intelligent beings due to their sophisticated language capabilities, amplifying the hype surrounding AI. This perception, tied to the use of the term "intelligence," can feel overwhelming but is ultimately a continuation of digitalization (Gjengedal, 2004). Notably, the institutional implementation of AI-based tools like *KI i skolen* in Norwegian municipalities highlights this growing enthusiasm, though other AI-driven applications in education have not received the same level of visibility or critical engagement, such as Duolingo and Google Translate.

According to the municipality guidelines, instead of public ChatGPT, *KI i skolen*, AI in school in English, provides teachers and students a claimed 'safe' access to AI-powered tools, since

they have access through Feide. Feide stands for *Felles Elektronisk Identitet*, common electronic identity in English, and it is owned and managed by the Norwegian Agency for Shared Services in Education and Research (Sikt), which is responsible for developing and maintaining Feide as the national identity management system for the education and research sector (Sikt, n.d.). *KI i skolen* is based on an API (Application Programme Interface)<sup>3</sup> to OpenAI's<sup>4</sup> GPT-3.5 language model, which is recognized for its ability to generate human-like text, answer complex questions, and provide insightful explanations. Since January 2024, this interfaced was also included in the curriculum of IP, as part of the digitalization education. According to guidance from the government is expected to serve as a resource and support for both students and teachers, besides of helping students and teachers to adapt to modern technological advancements in a safe and controlled environment, and adherence to guidelines to maintain ethical use (Kristiansand Kommune, 2023).

While the integration of AI into the education system, exemplified by *KI i skolen*, highlights its potential to transform teaching and learning, it also raises important concerns about equity, ethics, and the overreliance on digital systems. The use of secure platforms like Feide seeks to address privacy and accessibility concerns, but it inadvertently excludes those without digital IDs, reinforcing digital divides. Additionally, framing AI as a neutral tool may obscure its limitations, such as the potential to perpetuate biases, reduce critical engagement, or overshadow traditional educational practices. These challenges necessitate a more critical approach to ensure that AI serves diverse educational needs. Despite its promise as a resource to support tailored learning and prepare students for a digital future, it is crucial to question whether AI ultimately facilitates or hinders integration.

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<sup>3</sup> An API (Application Programmable Interface) is a set of operations and interfaces that allows systems or developers to interact with hardware or software, much like using a remote control to manage specific functions (Preibisch, 2018).

<sup>4</sup> OpenAI is an American AI research organization focused on developing artificial intelligence systems, including advanced language models like GPT (OpenAI, 2015-2024).

### ***2.2.5 Integration and empowerment***

Integration, particularly within the framework of the IP, demands more than mere access to digital tools and basic instruction to navigate them; it requires equipping individuals with the skills to engage with and meaningfully benefit from these tools. As Proba's (2019) report provides an analysis over the concept that integration is a multifaceted concept with no universal definition, varying across contexts and often characterized as a "two-way process of mutual adaptation". This definition emphasizes not only the incorporation of migrants into the social, economic, cultural, and political life of the host society but also the active role of the host community in facilitating inclusion and building relationships.

Successful integration goes beyond achieving socioeconomic parity with the majority population. It also encompasses immigrants' levels of social inclusion, political participation, and trust in public institutions. These dimensions illustrate integration as both a process and a state, evaluated through measurable indicators such as employment rates, educational attainment, and civic engagement, rather than a singular metric. Active engagement by host communities is vital for creating reciprocal relationships and dismantling systemic barriers that perpetuate exclusion (Proba, 2019).

Freire's (2017) framework of critical pedagogy can be linked to enhance this discussion by framing education as a transformative process. His emphasis on empowerment through education underscores the importance of equipping oppressed communities with not only technical skills but also the critical thinking required to navigate and challenge power dynamics. This also can be applied within digital technologies and the integration of immigrant women, as they can be recognized as the oppressed ones, both from the forced migration and for the disadvantage of integration. This approach complements integration efforts by fostering agency among immigrants, enabling them to engage in society as active participants rather than passive recipients of inclusion initiatives. For example, digital literacy programs designed with Freirean principles can empower immigrant women to question and address systemic inequities, thereby enhancing their capacity to use digital tools as a means of social and economic participation.

In conclusion, integration involves more than achieving individual success; it is a collective effort that requires systemic change. By incorporating both technical and critical skills into digital literacy initiatives, integration programs can bridge the gap between access and

meaningful participation, fostering a more inclusive society. This approach not only aligns with the multidimensional nature of integration but also ensures that both immigrants and host communities benefit from and contribute to a more equitable and cohesive social fabric.

### **2.3 Development and the Digital Divide**

The role of ICTs in global development cannot be solely focused on digital solutions without considering the broader socio-economic, cultural, and infrastructural contexts. Without this understanding, technological interventions risk perpetuating inequalities or imposing values that do not align with local realities. This critique is central to postcolonial computing (Philip et al., 2010), which emphasizes the need to interrogate how global technology systems, often designed within Western frameworks, may fail to consider the diverse social and cultural contexts of non-Western communities. Postcolonial computing challenges the dominance of universalized technological solutions by advocating for development practices that are informed by the local needs, histories, and epistemologies of the target communities.

Heeks' (2002) concept of 'i-development' aligns with this perspective by stressing that successful development initiatives must be grounded in local realities rather than imposing one-size-fits-all digital solutions. For populations with forced migration, addressing the digital divide requires a nuanced approach that considers local infrastructure, cultural practices, and the levels of digital literacy among participants. This is particularly important as postcolonial computing critiques the exportation of Western technological norms, which can marginalize local knowledge systems and create dependencies rather than fostering self-sufficiency.

Both approaches underscore the importance of tailoring informational resources and infrastructure to the specific social and cultural contexts of the communities they serve. For example, postcolonial computing advocates for rethinking the design and deployment of ICTs to better align with the lived experiences and capacities of users. In many low-income or displacement settings, where infrastructure is limited and literacy levels are low, digital solutions that prioritize high-tech systems often fail to meet fundamental informational needs, deepening disparities and reinforcing the digital divide.

The digital divide, as both a material and epistemological gap, reflects not just disparities in access to technology but also in the power dynamics embedded in the development process



itself. Postcolonial computing calls for a re-evaluation of these dynamics, urging practitioners to adopt participatory and inclusive approaches to ensure that digital technologies empower rather than exclude. In this light, the promotion of digital inclusion and equity must extend beyond enhancing infrastructure and skills to critically examining how these technologies are introduced, adapted, and valued in specific socio-cultural contexts (Philip et. al., 2010; Heeks, 2002).

To bridge the gap effectively, it is necessary to move beyond simply addressing access and usage by integrating meaningful engagement with local knowledge and practices. This involves creating systems that support and integrate with local ways of knowing, as opposed to imposing foreign solutions that risk being irrelevant or harmful. By adopting a postcolonial lens, development projects can strive for sustainable digital inclusion that respects and uplifts the communities they aim to serve.

#### **2.4 Digitalization and immigrants in Agder**

The rapid digitalization of Norwegian society has prompted significant efforts to incorporate digital skills into public education and integration programs for those seeking asylum, aiming to foster “digital citizens” who can successfully navigate Norway's increasingly digital landscape. Central to this initiative is the concept of “digital Bildung,” which emphasizes how education can prepare individuals for responsible participation in public life within a democratic society. This approach also supports identity development, equipping students with the skills necessary for effective engagement in the digital world from childhood through adulthood (Willbergh as cited in Gran et al., 2019).

In the Agder context, Bønnhoff's (2019) highlights how migrant mothers, often with limited exposure to digital tools, must navigate new educational systems while simultaneously managing their children's digital engagement. Bønnhoff underscores the intersection of gender, migration status, and digital literacy as key factors shaping women's experiences. Her institutional ethnography illustrates how the expectations of "digital Bildung" are institutionalized in Norway and extended to newcomer families, requiring mothers to also become “digital citizens.” However, this expectation presents significant challenges, especially for women from marginalized backgrounds.

To become a digital citizen in Norway, the first step is acquiring a BankID, a personal identification system that is claimed to offer the highest level of security. This ID is required for accessing both private and public services and is tied to the Norwegian national identity number, with the system being provided and managed by banks. While BankID facilitates seamless interactions with digital infrastructures, its reliance on private financial institutions reflects a broader neoliberal approach to digitalization. By outsourcing such critical identification infrastructure to the banking sector, the state not only prioritizes market-driven solutions but also embeds citizens' access to essential services within a system that privileges financial inclusion and economic productivity (Bønnhoff, 2019).

This approach aligns with critiques of digitalization as a tool for neoliberal governance, where citizenship increasingly becomes contingent upon one's integration into digital and economic systems. The requirement for a BankID creates a stratified form of inclusion: those who lack the prerequisites for obtaining it, such as immigrants without a national identity number or access to financial institutions, are effectively excluded from participating in critical aspects of society. This highlights how digital tools, while enabling access for many, can deepen exclusion for others by reinforcing existing digital and socio-economic divides.

## **2.5 Connecting theories**

The theories presented are interconnected through their focus on understanding and addressing the multidimensional challenges of digitalization and integration, particularly for immigrant women with diverse backgrounds. Central to this exploration is the concept of intersectionality, which highlights how overlapping identities, such as gender, refugee status, and education, shape unique experiences. This is coupled with the examination of the digital divide and digital inclusion, which identify disparities in access, skills, and opportunities in using digital technologies. Digital literacy emerges as a critical skill set, encompassing not only technical proficiency but also critical thinking, ethical online behavior, and engagement with advanced tools like AI, which also is expected in the integration process. The integration of these theoretical frameworks emphasizes a transformative approach, advocating for the empowerment of marginalized groups through education and equitable access to technology. These concepts are further contextualized within the Norwegian digital landscape, where structural requirements like BankID illustrate both the potential and limitations of digital

inclusion efforts. Together, these theories create a comprehensive lens to analyse the structural, social, and individual factors shaping digital integration and empowerment.

In summary, this chapter attempts to use a red thread to connect the theoretical foundation by exploring the key concepts and frameworks relevant to this study, by providing a critical lens for understanding the interplay between digitalization and the integration of women in the IP. By examining existing literature and contextualizing these theories within the Norwegian context, the chapter has highlighted the complexities and challenges inherent in fostering digital inclusion, both including aspects of the digitalization in the region and the development efforts in implementing digital inclusion. This foundation paves the way for the chapter of empirical findings and explore how these theoretical insights manifest in the lived experiences of the study participants.

## **CHAPTER THREE: METHODOLOGY**

### **3.1 Introduction**

The methodology chapter outlines the philosophical foundations, research strategies, and methods employed in this study to investigate the digitalization challenges faced by immigrant women in the IP in Southern Norway. This chapter begins by establishing the epistemological and ontological considerations that underpin the study, emphasizing intersectionality in shaping the research framework. It then describes the qualitative approach adopted, detailing the use of participant observation, semi-structured interviews, and focus group as primary data collection methods. Sampling strategies and ethical considerations are thoroughly discussed to highlight the rigor and sensitivity required when engaging with a vulnerable population. The chapter concludes by addressing the challenges encountered during fieldwork and the measures taken to ensure ethical and valid research practices.

### **3.2 Epistemological and Ontological considerations**

Briefly, epistemology can be simplified as the way we make assumptions of the world, how we produce knowledge and validate it, whereas ontology is the way we see the world (Bhattacharjee, 2012, ss. 18,19). For example, within indigenous ontology, a mountain may be perceived as an active participant, an actor, in contrast, other academic disciplines might view it as an object for study or use. To exemplify epistemology, I highlight that the feminist critiques have scrutinized the gendered methods and systems involved in knowledge production in academia. This has led to the development of new methodologies that consider power structures in the generation of knowledge, such as standpoint theory and method (Clark et al., 2021).

That being said, my main participants are women fleeing wars and rely on policies of settlement and integration of other countries, these considerations became a crucial aspect for analysis, which also implies in my sampling. Part of their rights and duties in Norway is to be familiar with digital technologies as a mean for integration. Their insights and knowledge based on their own experiences can challenge the power structure, and how they make use of technology and if it aligns with their personal goals. Positionality situates researcher and research participants as we occupy positions in the power structure, based on gender, race, age, ethnicity, class, geographies, etc. (Clark et al., 2021). Purposely, I avoid the word ‘refugee’ to not carry the

stigma and essentialism produced by otherness and generalization. In contrast to positivism, which assumed in an objective inquiry a neutrality, positionality determines the perspective from which knowledge is constructed. This acknowledgment of positionality facilitates an understanding of the structures that delineate the participant's role in the investigation.

To further delve into the participants' lived experiences, I turn to phenomenology, not just as a method, but as a philosophical approach that deepens the analysis of subjective experience. Rooted in the German philosopher Immanuel Kant, who criticized the analysis of subjective experiences through pure reason, and it was lately shaped by another German philosopher Edmund Husserl, as the human experience is a source of knowledge (Bhattacharjee, 2012, s. 109). I emphasized its political nature, as it rejects the notion of neutral knowledge and challenges universal concepts and theories.

### **3.3 Research methods and strategies**

This study employs qualitative research methods to investigate the challenges surrounding digitalization and the perspectives of immigrant women in the evolving digital and socioeconomic<sup>5</sup> landscape of the Agder region. The selection of qualitative research is intentional, harnessing its flexibility and depth for a nuanced exploration of participants' experiences, perceptions, and interactions. Besides that, it facilitates the organic development of concepts and theories that emerge naturally from the data (Clark et al., 2021), providing valuable insights into the diverse challenges faced by immigrant women in the digital age.

This research employed a mixed-method approach that combines participant observation, semi-structured interviews and a focus group to comprehensively explore the role of digitalization and the perspective of immigrant women on the use of technologies.

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<sup>5</sup> I have chosen to use the term "socioeconomic" in this context to better capture the interaction between social and economic factors. This term more accurately reflects how these elements are intertwined and influence one another.

### ***3.3.1 Participant Observation***

My role as a participant observer aligns with the notion that “the researcher is considered part of the social phenomenon, and her specific role and involvement in the research process must be made clear during data analysis” (Bhattacharjee, 2012, s. 104). Although I am not an immigrant who sought asylum, my role as a foreign female student allows me to connect with participants by sharing my immigrant background, its challenges, and opportunities, fostering a sense of commonality through sharing of experiences. My participation in classroom activities involving observations of computer and smartphones use provided insights into the program's dynamics and the application of technological tools as part of digitalisation.

Before introducing myself in person to the class, my main informant announced my presence in the schedule provided by the teacher, who gave me access to the field, which means access to classes, meetings, participants in the IP, other teachers. I negotiated my access by making myself available as a volunteer since I am a former student in the same school, not part of the Introduction Programme, but in the Norwegian classes and Social Studies.

On my first day as an observer, the teacher formally introduced me to the class, highlighting that I would be conducting research during the class sessions. The announcement also mentioned my dual role in helping with conversation practice and assisting the students, leveraging my background. This dynamic established my position not only as a researcher but also as an additional resource for the students. Consequently, some students perceived me as more than a participant; they recognized me as a resource, often seeking assistance not only with language-related queries but also with practical matters, for instance, to apply for higher education and to help to find internship opportunities. My different roles reflect an imbalanced power dynamic, in which students rely on me for some activities, even I heard from one of my participants they would like to become like me, referring to be a researcher and get a spot on the University.

In contrast, during some classes, I was treated like an equal student, as the teacher corrected my Norwegian in front of the class by using techniques of repetition, and I also tried to emphasize I was also learning how to deal with AI as they were doing. I had to try to follow the role of a phenomenologist, as described by Bogdan and Taylor (1975), “The phenomenologist views human behavior... as a product of how people interpret the world. ... In order to grasp the

meanings of a person's behavior, the phenomenologist attempts to see things from that person's point of view" (as cited in Clark et al., 2021, p. 127). I had to try to not only be an observer but place myself as a participant, in that sense I had to understand the other participants' point of view.

I actively engaged with the program, attending relevant sessions, classes, activities. Moreover, I also attended courses in AI and watched seminars at the national level about the implementation of AI in the curriculum of public schools. This approach allowed me for an in-depth understanding of the digital tools and resources offered by the program to the participants, their accessibility, and the alignment with the participant's integration needs. Through attending training and seminars, I could also perceive the learning process of the teachers.

To register the data collected as a participant observer, I took descriptive notes, and I often added reflections on what was happening in the classroom, both for analysis and for further exploration. I always started the note with the date, number of students based on gender, and the digital resources used in class. For ethical requirements, I have not collected any personal data during the observation period.

Through participant observation, I also assess the comprehensiveness of the program in addressing the diverse requirements and challenges faced by subgroups of immigrant women, and the role of the educator in making sense of the digital tools offered. I took detailed field notes to capture observations, interactions, and any emerging themes.

Some of the advantages of participant observation are to better understand the participant by sharing experience, perhaps revealing some power dynamics usually not captured in interviews, the challenges faced by accessing new tools, and the amount of time they need to access technology (Clark et al., 2021). For instance, by engaging with people seeking asylum in an informal setting, I gained a profound understanding of their struggles and opportunities, particularly the practical issues such as navigating bureaucracy. Certain participants developed strategies to fulfil the requirements, demonstrating their resilience. As an immigrant myself, though not an asylum seeker, I found common ground with them in the continuous effort to prove our worthiness and eligibility through documentation for residency. Challenges included lost documents or family members not fulfilling requirements. Having navigated the system to secure permanent residency, university admission, and employment, I held valuable

knowledge, thus power, which I shared with my participants. My goal was to bridge the gap by providing insights and guidance on accessing opportunities when they looked for me asking for help. However, not all welcomed my assistance; one participant seemed uncomfortable, possibly because my knowledge and position made them feel subordinate to a non-European/non-Norwegian.

Informal interactions revealed how participants truly engaged with technology, as opposed to how they presented themselves in formal settings. In interviews, they tried to appear knowledgeable and worthy, akin to a job interview. However, in casual settings, the facade often dropped, and I saw them as regular individuals striving to improve their lives and those of their loved ones. This contrast between formal and informal behavior unveiled the inherent human struggle for betterment, regardless of the context.

I observed firsthand the challenges participants faced with technology. There were taboos around using social media and seeking help from digital tools. As a mediator, I noticed that in formal interviews, participants made concerted efforts to appear proficient with technology to impress and sceptical as the use of social media for leisure. However, informal sessions exposed their genuine struggles and learning processes, and constant chatting. This observation highlighted the gap between self-perceived and actual technological competence among participants.

### ***3.3.2 Sampling***

In accordance with the methods and strategies, I apply theoretical sampling strategy, as the study site and respondents were purposive selected based on theoretical considerations related to the phenomenon of digitalization (Bhattacharjee, 2012; Clark et al., 2021). If a sample should be information-rich to generate meaningful data, the IP seems to be an opportunity to this inquiry, by both offer a program designed to integration and use of technology for development purposes. In a first level, the sample context, I chose a school which offer the IP for the immigrants who sought asylum, a specific classroom and specific class that offers access and education in ICTs.

In a second level, the sample participants, my primary informant, who also happens to be a teacher, granted me access to specific classes with potential participants for this study. I



initiated the selection process based on gender within the IP (noting that not all students in the classroom I conducted the research are enrolled in the IP), considered women as a target, since they are behind in paid workforce in Agder. Besides that, they were the majority in the classrooms I was present. Additionally, educators in the classes where I have been actively present were considered and included as participants for interviews.

As I gained access to the class as a participant observer, I needed to determine which individuals would best answer my inquiries. To facilitate this, I sought assistance from the teacher to connect me with suitable participants. My project focused on gender and participation in the introduction programme, stemming from data showing that the gender gap in the job market overlaps with ethnicity and minority status, often resulting in worse outcomes for non-Western women compared to their Western counterparts (Wiborg, 2024, s. 70). I also hypothesized that regimes in their countries of origin might hinder their job market inclusion and access to technologies. Therefore, the first prerequisite was to interview women who are asylum seekers.

When discussing with my main informant, I learned that classes were divided by level and previous education. Initially, I aimed to access students with low levels of education, considering literacy and digital literacy aspects. However, the instructors of those classes took longer to reply and set time, I started with the other class as they were most accessible for the research, which consisted of highly qualified women.

### ***3.3.3 Interview subjects' recruitment***

**Immigrant Women Attending the Introduction Programme.** These interviewees are my main participants, since their perspective is paramount to answer my research questions. I aim to assess how digitalization in the IP corresponds to their abilities to utilities and explore their attitudes and perceptions toward digital technologies.

Once they grew accustomed to my presence in the classroom, I approached my potential respondents to inquire about conducting interviews. The first three participants attending the IP promptly agreed without hesitation. We arranged a convenient time for the interviews, and their eagerness to collaborate was evident. While two of them were fluent in English, I enlisted an interpreter for the third participant. (The interpreter is a colleague from the master's degree at UiA who voluntarily agreed in facilitated the interview in translating English to Turkish). The

fourth participant I informally met in the canteen of the school (the field), as we talked, I recognized her profile as a potential participant to the research.

As I engaged with my initial participants, all of whom held advanced degrees, including two with master's degrees, I realized the potential to significantly broaden the scope of my research by including women from lower educational backgrounds. While awaiting responses from participants in this demographic, I decided to visit the classroom of a key informant. This informant suggested I meet in person with the teacher responsible for students in lower-level education. To my surprise, despite this participant did not reply to my e-mail, later explained to me as a known characteristic of this participant, the teacher was highly receptive. They not only welcomed my request but also granted me the opportunity to observe the classroom, enriching the depth and diversity of my research.

In the second class on the appointed day, I was introduced as both a researcher and as an observer, the student group consisted of individuals with lower levels of education and older age groups. During my second visit to the class, I approached three women who were seated together during the break and asked if they would be willing to participate in my research interviews. One of the women initially struggled to communicate in Norwegian, and her colleague helped facilitate communication by translating between Tigrinya and Norwegian. After confirming their interest, the woman who had difficulty speaking Norwegian asked if her interview could be with her colleague (the one interpreting). At that point, I suggested conducting the interview in group with all three participants, which they readily agreed to. Although I had not initially planned to conduct a focus group, I recognized it as a valuable opportunity, especially given the participants' request and enthusiasm.

**Educators.** Educators play a central role in delivering the program's content and shaping learning experiences, significantly influencing how immigrant women acquire digital literacy and effectively utilize technology. Recognizing their pivotal role, this study sought to understand educators' perceptions, challenges, and successes in integrating digital technologies into the program. Their insights provided a rich source of information, particularly for formulating policy recommendations. Accordingly, educators were included as key participants in the study, and research questions were tailored to address their unique experiences and perspectives.

The first educator, who also served as my main informant and facilitated access to the field, was the initial participant recruited. The second educator, responsible for teaching a class with students of lower educational backgrounds, offered a contrasting perspective, highlighting the specific struggles and needs of disadvantaged students. This inclusion of educators from two distinct settings enriched the analysis, providing nuanced insights into the complexities of digital literacy education.

The table below summarizes the demographic characteristics of the study participants, additional demographic information about the educators has been omitted to protect their identities; only the classes they teach are indicated.

<b>Demographic details</b>					
<b>Participants</b>	<b>Age range</b>	<b>Gender</b>	<b>Education Level</b>	<b>Nationality</b>	<b>Class Level</b>
Student 1	20-30	Female	Master	Ukraine	High
Student 2	20-30	Female	Bachelor	Ukraine	High
Student 3	30-40	Female	Master	Turkey/Syria	High
Student 4	35-45	Female	Bachelor	Syria	High
Student 5	40-50	Female	-	Eritrea	Low
Student 6	40-50	Female	-	Eritrea	Low
Student 7	40-50	Female	-	Eritrea	Low
Educator 1	-	-	-	-	High
Educator 2	-	-	-	-	Low

### ***3.3.4 Semi-Structured Interviews***

The interviews with key informants are often part of the participation observation (Clark et al., 2021, s. 1998), added to the chosen research design, I chose semi-structured interviews as a

main data collection method since it provides more flexibility and freedom to the interviewee. Instead of having pre-determined questions, I opted for an interview guide (See APPENDICES Appendix 1 and Appendix 2), in which I was able to vary according with the participant flow, giving me the possibility to add or remove questions, accordingly, still keeping a certain control of my research (O'Reilly, 2012, s. 138). In order to provide an accessible analysis and comparison with other respondents, I followed the guidelines in keeping with the similar wording and use all the questions in the guide, even though they are not identical (Clark et al., 2021, s. 1382), doing so I avoided constrain or limit the respondent's narrative.

I conducted the interviews face to face, recording with a mobile application called Nettskjema-Dictaphone, installed on my phone. That application is recommended and provided by UiO and UiA, and it is a secure tool that meets the requirements towards data collection and ethical implications by protecting data, both during the recording and the storage process in the Nettskjema platform (UiA, 2024). More information about ethical implications is available in the ethical section of this chapter.

For my role as an interviewer, I follow the guidelines proposed by O'Reilly (2021) such as having prepared myself, to have control of time and having in mind the focus of this research. I estimated the interviews to have a duration of 30 minutes interview, in practice it took an average of 45 minutes. Moreover, I was aware of the importance of location; I chose the school setting for providing the interview subjects with the feeling of safety, confidence and alignment with the study purposes and topic. I was flexible and relied on their availability, usually after their last class; and I encouraged them to participate in the research, because if I successfully conduct the research and learn from their perspectives, it is a relevant and up-to-date phenomenon that can help to improve the learning environment (p. 120). As a result, some of the respondents were very well prepared for the interviews, for instance one of them had screenshots of how they use AI for educational purposes.

### ***3.3.5 Focus Group***

The inclusion of a focus group was not initially planned in the research proposal; rather, it emerged organically during the data collection process. During recruitment, one of the participants I approached requested that a colleague join the interview to provide language

support. Initially, I intended to treat this as a group interview. However, as the session progressed, it became evident that the interaction between participants aligned with the characteristics of a focus group.

The participants engaged with one another, building on each other's contributions and collaboratively constructing meaning through their dialogue. This dynamic offered valuable insights into their relationships, as it highlighted how they relied on and supported one another. For example, one participant frequently sought clarification or reinforcement from others, illustrating the cooperative nature of their learning environment and shared experiences. These interactions underscored the value of the focus group as a method for uncovering collective perspectives and shared challenges (Clark et al., 2021).

This unplanned focus group enriched the study by revealing nuances of group dynamics and mutual support among participants, offering a deeper understanding of their lived experiences and how they navigated challenges together.

### **3.4 Research design**

The most appropriate blueprint to answer the research question of this research is the interpretative design, as this aim “subjective interpretations of social phenomenon from the perspectives of the subjects involved” (Bhattacharjee, 2012, p. 40). Initially I followed the steps of ethnography: I deeply immersed myself in the field, watching class as a student regularly, engaging, and observing the participants, informally and formally talking with them, until I started to theorize (see Clark et al., 2021, p. 1280). However, ethnography is often defined as an immersive experience for a long period of time, varying from 8 months to two years (Clark et al., 2021, p. 1280; Bhattacharjee, 2012, p. 40), Other authors defend that ethnography can be performed in a small period of time (O'Reilly, 2012, s. 3). I have had a time limitation to my field engagement, meaning that I have had less than six months to spend in the field. Thus, since I was investigating immigrants’ experiences with digitalization, I decided to apply a phenomenological approach instead.

Phenomenology is described as a “philosophical approach that focuses on how individuals make sense of the world around them [...]” (Clark et al., 2021), intertwining with Bhattacharjee’s (2021) interpretative design definition. This research design has proven

particularly fitting for this study. The central focus of the inquiry revolves around the impact of digital transformation, specifically its implementation in educational and integrational realms through the participants' perspectives. Thus, the adoption of a phenomenological approach not only aligns seamlessly with the research goals but also offers an adequate tool to answer the research questions, based on the detailed definition:

Phenomenology is concerned with the systematic reflection and analysis of phenomena associated with conscious experiences, such as human judgment, perceptions, and actions, with the goal of (1) appreciating and describing social reality from the diverse subjective perspectives of the participants involved, and (2) understanding the symbolic meanings (“deep structure”) underlying these subjective experiences (Bhattacharjee, 2012, s. 109).

Following Bhattacharjee conceptualization, I also could divide the semi-structured interview into two parts. The first part explores my interview subject's use of technologies, whilst the second part focuses on meaning.

### **3.5 Data Collection Methods**

My primary data collection methods comprised fieldnotes, interviews and focus group transcript.

#### ***3.5.1 Fieldnotes***

To avoid relying solely on my memory, I adopted the role of a participant observer, a challenging task that required active engagement during classes while also documenting key observations. Despite the difficulty of simultaneous participation and note-taking, I utilized a notebook and pen, employing quick handwriting techniques with topics, abbreviations, and bullet points for efficient recording. This method, as described by Clark and colleagues (2021) as jotted notes, brief reminders for post-field-checking (p. 1323), proved instrumental. I consistently reviewed and refined my notes, ensuring I captured all relevant behaviours and dynamics. When time and insights permitted during observations, I even ventured into preliminary analysis.

### ***3.5.2 Interviews and focus group transcript***

All interviews were recorded using the Nettskjema-diktafon mobile phone app, provided by UiO and UiA. This application is linked to a secure cloud storage system, also provided by UiA, ensuring encryption for added security. The recordings were stored in this cloud and accessible via the Nettskjema platform. When convenient I used that automatic transcription of that platform, in the case of multilanguage interview, I downloaded the audios onto Microsoft Word UiA account, which is also encrypted and logged into the protected cloud provided by UiA. For transcription, I employed a tool called Dictate on Word, which automatically transcribes the audio and choose the language which I would like to highlight. While this automated process significantly saved time, minor errors still required manual review and correction. Fortunately, the document was marked with speaker labels and timestamps, facilitating easy identification and correction of any errors in the transcription by cross-referencing with the original audio recordings. I also used the automatic transcription on Nettskjema when convenient.

### **3.6 Data Analysis**

The data collected through participant observation and semi-structured interviews were analysed using thematic analysis. This method involves identifying, analysing, and interpreting recurring themes and patterns in the data to answer the main research question. The thematic analysis process facilitates a deeper understanding of the role of digitalization in the IP and the perspectives of the participants.

The qualitative data gathered from semi-structured interviews were transcribed for analysis. Some interviews were transcribed automatically using Nettskjema, with manual corrections made where automatic transcription contained errors. Interviews conducted in Norwegian were translated by the researcher, with support from tools such as Google Translate and UiO Chat to ensure accuracy. Once transcribed and translated, the data were analysed systematically using thematic analysis following the six-phase framework proposed by Braun and Clarke (Clark et al., 2021):

1. Familiarization with the Data: I began by listening to the interviews again while reviewing the transcripts to ensure accuracy and consistency. During this step, I made notes and highlighted key points that appeared relevant to the research question.
2. Generating Initial Codes: The transcripts were coded manually. I labelled where I identify specific segments of the data related to the research question. Examples of initial codes include *digital skills*, *challenges*, *devices used*, *ICT function*, *age dynamics*, *geographic barriers*.
3. Identifying Themes: Related codes were grouped into broader themes that captured recurring ideas or issues. For instance, codes like *language barriers* and *digital skills* were grouped under a broader theme such as *digital literacy*.
4. Reviewing Themes: The themes were refined to ensure that they were coherent and accurately represented the data. I have excluded some on this step as they seemed irrelevant aside the general analysis.
5. Defining and Naming Themes: Each theme was clearly defined. This step made me go back to the Literature Review and define key concepts. Key themes identified included *Intersectional Barriers to Digital Literacy*, *Digital Tools as Empowerment vs. Exclusion* and *Educator's Role and Challenges*.
6. Writing the thesis: The final themes were integrated into the thesis, illustrating how they address the research question and connect to existing literature. Supporting excerpts from the data were included to provide evidence for the findings.

### **3.7 Research Ethics**

Several ethical concerns arise from this research methodology to uphold ethical principles and safeguard the rights and well-being of participants while conducting rigorous and meaningful research. Following the guidelines of the Institutions involved UiA, Sikt, NSD, I listed:

#### ***3.7.1 Informed Consent***

To ensure that all participants fully understood the nature of the research, its purpose, potential risks, and benefits, I provided a comprehensive face-to-face explanation alongside a written



Informed Consent Form (see Appendix 3 and Appendix 4). The project was initially presented under the title *Empowering Immigrant Women in Agder: Exploring the Role of Digitalization in Education*. While the thesis title was later adapted to reflect the findings, the scope of the project remained unchanged, as originally communicated to participants.

Recognizing that participants came from diverse cultural backgrounds and might face language barriers or varying literacy levels, I enlisted the assistance of interpreters to ensure that the content was clearly understood and their teacher worked as gatekeepers, since I presented the thesis to them and asked if I could perform the research in their classrooms, they also mediated the contact. I also emphasized that the research focused solely on their relationships with technology in the context of integration. To reassure participants, I clarified that sensitive and deeply personal information was neither the subject of the research nor would it be recorded.

### ***3.7.2 Confidentiality***

Given the vulnerable nature of the population under study, who suffered forced displacement, it is essential to protect their identities and ensure confidentiality. This involves careful handling of data, anonymization, and secure storage to prevent potential harm or stigmatization. I explained the data processing procedures in the data collection method, where I outlined the guidelines and tools provided by UiA to ensure secure handling and storage of data. Although I recorded participants' voices, I did not link these recordings to any other personal information. Participants were identified as 'Educators' and 'Students' and were assigned a unique number in sequence as I interviewed them. Only I had access to this identification system.

Additionally, the interpreter and my supervisor, who helped contact a key informant, were informed of the confidentiality measures and their roles were acknowledged and accepted by the participants.

### ***3.7.3 Data Security and Privacy***

Adequate measures were taken to ensure the security and privacy of collected data, including recordings of interviews and field notes, as previously outlined. This included using secure storage platforms (e.g., encrypted cloud storage) with password protection to prevent unauthorized access. Audio recordings and other sensitive data were encrypted, ensuring that

they were securely stored and only accessible to authorized individuals, such as myself. Access to the data was strictly limited, with permissions granted only to those directly involved in the research, such as the interpreter and supervisor, and all parties were informed of the confidentiality protocols.

Additionally, to maintain participant anonymity, all personally identifiable information was removed or replaced with pseudonyms during data transcription. Identifiers were used only for organizational purposes and were not connected to personal information or recordings. The data was stored securely on Nettskjema and on encrypted cloud storage provided by UiA.

The collected data will be retained until December 2024, after which it will be securely deleted in compliance with institutional guidelines and legal requirements, ensuring that no data is kept beyond its necessary use. Throughout the process, all data handling adhered to applicable legal and ethical standards, ensuring that participants' privacy and confidentiality were upheld.

#### ***3.7.4 Positionality/Power dynamics***

The researcher's positionality—particularly as a former student and immigrant woman—can influence interactions with participants and shape the research process. It is crucial to acknowledge the power dynamics at play, ensuring that the voices of participants are equitably represented, and their experiences are authentically captured. As discussed in the previous subsection in this chapter, I am aware that my position in the research process might affect the data collection and interpretation. Positionality involves the recognition that both researchers and participants occupy distinct positions in social and power structures, which are influenced by factors such as gender, race, ethnicity, class, and geography (Clark et al., 2021).

In order to mitigate potential biases or power imbalances, I intentionally avoided using the term “refugee”, as it often carries a stigma and reinforces essentialist notions of otherness. This decision was made to prevent generalizations and to emphasize the individuality of participants rather than reducing them to a singular label.

Additionally, during some sessions as I mentioned previously, I was treated as an equal student, which reinforces my participation as student and thus in a learning process. By positioning myself as a fellow learner in these contexts, I aimed to bridge the power gap and foster a more collaborative and equitable environment for both me and the participants.

### ***3.7.5 Respect for Cultural Sensitivities***

Immigrant women may hold unique cultural beliefs, values, and norms that must be respected throughout the research process. Ongoing reflexivity were essential in navigating potential misunderstandings and ensuring respectful engagement with participants. For example, one respondent described the accessibility provided by technology as a “God blessing”. Rather than judging this perspective, I made a conscious effort to understand and appreciate her point of view.

Additionally, I chose to conduct the interviews at the school, as I recognized that some participants might feel uncomfortable in more public or unfamiliar settings. This location provided a more private and intimate environment, where participants could speak freely without feeling exposed. I also showed respect to older participants, acknowledging that in their culture, age often commands high respect. At the same time, I validated the younger participants by actively listening to and valuing their perspectives. When working with participants with lower levels of education, patience was crucial. I made sure to offer support whenever needed, but always without interfering with their autonomy and agency.

### ***3.7.6 Digital Literacy and Access***

Given the focus on digitalization, as a researcher, I consider participants' varying levels of digital literacy and access to technology, including the educators, that sometimes they hold a power to educate about tools they do not even manage as good as the students. In those scenarios, I respected and did not raise any comment or question that could cause any embarrassment. Ensuring equitable participation requires addressing barriers to access and providing necessary support for those with limited digital skills.

### ***3.7.7 Bias and Subjectivity***

I was mindful of the potential for bias in data collection, analysis, and interpretation and made conscious efforts to minimize its impact. Reflexivity, constantly reflecting on my own role, assumptions, and perspectives, was central to this process. By acknowledging my background and any preconceived notions, I aimed to ensure that these did not unduly influence the research findings. Transparency about my positionality allowed me to critically assess how my identity

as a former immigrant woman and researcher might shape my interactions with participants and influence the interpretation of the data.

Throughout the study, I employed various strategies to maintain rigor and trustworthiness, such as member checking, where I sought participant feedback on my interpretations, I have shared with them my reflection and wait their comments on it. This process also led me to exclude some data. These practices helped me remain open to alternative viewpoints and reduce the risk of imposing my own biases on the data. Additionally, I sought to triangulate findings by using multiple data sources and perspectives, double checking the educators some narratives, without identifying the student, thus checking with students' information passed by the educators, further ensuring a balanced and accurate representation of participants' voices.

### ***3.7.8 Ethical approval***

Prior to conducting this research, I submitted a comprehensive research ethics application to Sikt, in accordance with the requirements set by the University of Agder (UiA) and Norwegian regulations governing the processing of personal data. The application outlined the study's methodology, participant recruitment process, data handling procedures, and measures for ensuring participant privacy and confidentiality. It also addressed the ethical considerations related to the vulnerable nature of the participants, including informed consent and the protection of sensitive information.

The application was carefully reviewed by the ethics committee, and approval was granted on December 14, 2023, ensuring that the study adhered to both institutional and national ethical standards for research involving human subjects. This approval was essential for ensuring that the research was conducted responsibly and in full compliance with relevant ethical guidelines.

## **3.8 Research Challenges**

Perhaps the most significant challenge I faced was managing time and resources. In addition to my responsibilities as a researcher and student, I am also a mother and work as a substitute cleaner. My earnings depend on how much I work, which led to significant fatigue, particularly during the transcription and data analysis stages, which were particularly time-consuming. Health issues further complicated the process, causing delays and contributing to psychological

stress, ultimately delaying the completion of this thesis by six months. In my original thesis proposal, I had planned to finish by June 2024, but I am now submitting it in December 2024. After speaking with my peers, I found that at least three of them are in similar situations.

Conducting qualitative interviews was also inherently subjective. I made a conscious effort to remain neutral and positive, even when I felt skeptical about some responses, particularly during informal interactions or when I disagreed with what was being reported. I also acknowledge that my personal background influenced both the interviews and data interpretation in a positive way, as my eagerness to listen and connect with participants helped create a trusting environment. Some participants, feeling empowered through their interactions, developed coping mechanisms to overcome their sense of powerlessness.

Working with vulnerable populations, such as immigrant women, required careful ethical consideration. I consistently sought informed consent, ensuring participants' identities were protected and their rights and privacy upheld throughout the study. I was careful to avoid asking questions that could potentially cause harm or discomfort.

A significant challenge I observed was the wide variation in digital literacy among participants. While some women were highly proficient with digital tools, others struggled with even basic digital skills. This disparity added complexity to the research, and some questions related to the use of technology or AI were excluded from certain interviews because participants could not recognize or engage with the topic. It required thoughtful planning and effort to capture the diverse experiences of the participants, and I conducted an interview with an educator to better understand the context. I believe this approach helped avoid potentially embarrassing situations for students who lacked certain skills.

One potential challenge that was ultimately overcome involved the educator responsible for classes with lower education-level students. Initially, he delayed our meetings because the days that suited both of us coincided with sessions where no digital tools, such as PCs, were being used. I anticipated a busy schedule, language barriers, and reluctance to participate due to concerns about sharing personal stories or the discomfort of being observed by a researcher. As a result, I began my research with higher-education-level students, who were more eager to participate. However, when I later met the educator from the lower-level class, I found him to be far more receptive than I had anticipated. Although he was known for being unresponsive to

emails, he encouraged me to visit at any time, even when no digital classes were scheduled. This led to valuable insights, particularly in showing that technology usage was not a priority in these classes, as language instruction was more effectively conducted through oral methods.

## **CHAPTER FOUR: EMPIRICAL FINDINGS**

### **4.1 Introduction**

This chapter presents the key findings from the research, focusing on the use of digital tools, experiences and perspectives of immigrant women and educators in the Introduction Programme. It begins with an overview of the field, based on observations and insights gathered during the fieldwork. These initial observations provide context for understanding how digital tools are implemented and used. The following section organizes the findings around the research questions, allowing for a focused exploration of the factors influencing digital inclusion and their implications for immigrant integration, and explore the perspectives and experiences of the respondents. Note that this chapter is expected to be more descriptive with relevant information of the context and reflections to focus on the aspect which are the aim of this inquiry. Analysis through theoretical lens will be treated in the chapter five.

### **4.2 Overview of the Field**

My research was conducted within two distinct groups that are part of the IP, which I chose to name as, the Foundational Education Class, consisting of students with limited formal education from their home countries, and the Advanced Education Class, comprising participants with higher educational backgrounds. Both groups were at a basic Norwegian language proficiency level, categorized as A1-A2 according to the Norwegian language system, the levels come from the Common European Framework of Reference for Languages (CEFR). These levels correspond to the beginner and elementary stages of language acquisition. Students at these levels demonstrate varying abilities, such as understanding and using basic phrases and expressions for everyday situations, introducing themselves, asking and answering simple questions about personal details, and engaging in straightforward interactions. These foundational skills are essential for everyday communication and are a critical part of the initial integration process for newcomers and eligibility for a permanent residence permit in Norway (The Directorate of Integration and Diversity, n.d.). The distinction between the two classes in my research was based solely on the participants' prior educational experiences, highlighting the diversity of their starting points in the integration journey.

In addition to classroom observations, I conducted interviews with two instructors from each class, which were held in their offices. Furthermore, I interviewed four students from the Advanced Education Class and three from the Foundational Education Class. These interviews, along with the classroom observations, form the foundation of my empirical findings. All data collection was carried out within a single school dedicated to adult education, in Norwegian language training and other education supports, in an urban area in Southern Norway. To ensure the anonymity of the participants, no additional identifying details about the school will be disclosed. Most of the data in this subsection was gathered through a combination of interviews and direct classroom observations.

#### ***4.2.1 Advanced education class***

In the advanced education class, the primary participants are from Ukraine, reflecting the fact that most current refugees in Norway originate from Ukraine due to the ongoing Russian invasion. The class comprises predominantly women, many of whom have husbands unable to leave Ukraine due to martial law<sup>6</sup>. This explains why women constitute the majority of asylum seekers. Additionally, some male spouses with Russian nationality were unable to leave conflict zones and join their families in Norway. This information emerged during observations when I inquired about the use of smartphones. Many students mentioned that their primary use of these devices was to communicate with their husbands, who were unable to flee, or with other family members still trapped in war zones.

A typical day in the classroom begins with the teacher capturing the students' attention. A text document is displayed on a whiteboard via a projector, outlining the day's schedule. As the teacher begins speaking, student conversations gradually become less intense. If necessary, the teacher addresses individuals directly, saying in Norwegian, "You need to listen to the instructions I am giving. It's time to listen; you can talk afterward", I witnessed this situation a couple of times. Once the class is silent, the teacher carefully explains each step of the lesson,

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<sup>6</sup> Under the martial law declared by President Volodymyr Zelensky in response to the Russian invasion, Ukrainian men of military age were prohibited from leaving the country to ensure they could fulfil their military duties (Fremer, 2022).



highlighting the tools to be used and their purposes, including the importance of the Norwegian proficiency exam required for a residency permit.

Students are encouraged to ask questions or seek help with digital tools. During critical instructions, the teacher translates into English or asks students to interpret for their peers. High-achieving students often assist classmates, serving as additional resources. The teacher actively engages with students by visiting their desks during activities to provide tailored support and maintain discipline. For instance, extra guidance is offered to absent students to help them catch up, as seen when the teacher gave special attention to students who missed previous classes.

Peer interactions and collaboration in the classroom vary. Some students eagerly offer support, while others prefer working independently. Ukrainian women frequently converse in their mother tongue, despite the teacher's efforts to encourage Norwegian practice. Male students appear more introverted, often working quietly and alone. Older female students frequently seek help from younger peers, demonstrating a consistent pattern across all classes. This dynamic reflects the influence of age on digital literacy, as older women tend to view younger classmates as more proficient with digital tools and tasks. The observed gender differences in assistance-seeking behavior highlight the complex social impacts of digitalization on learning habits.

The participants' educational backgrounds also reflect the diverse skills and qualifications present in the classroom. Among the respondents in this research from this class, two students hold master's degrees, one from Ukraine and the other from Syria, while two others have bachelor's degrees. The Ukrainian student is multilingual, showcasing the varied competencies students bring to the learning environment. These qualifications are indicative of the potential for professional integration, but they also highlight the challenge of adapting prior expertise to a new cultural and linguistic context.

During one session, the teacher worked with a student engaged in self-driven study as a solution to social anxiety. I was invited to observe the guidance provided. Later that day, a key informant from the school staff mentioned that some students are offered fully online courses if they are deemed capable of managing their time independently, require minimal technical support, have strong educational backgrounds, and face challenges attending in-person classes. Although

these online students are not the primary focus of this study, the school's provisions for them are noteworthy.

#### ***4.2.2 Foundational education class***

The IP provides educational opportunities for individuals who lack primary and secondary education from their home countries. Notably, the teacher of this class also has a family migration background, which may facilitate empathetic communication and understanding with the students. During my observation, the students appeared to be older than those in the other class I had visited, suggesting a diverse demographic of adult learners.

One key challenge encountered during the research was the scheduling of a “digital class,” wherein students were expected to use computers. My visit was postponed for three weeks due to the class not utilizing computers as initially planned. Even on the day of my eventual visit, the computers were not used, reportedly due to different educational priorities, as communicated by the teacher. In addition to limited computer use, the classroom environment was equipped with a microphone for every two students, enabling them to read aloud or respond to questions in an interactive manner. This technology appeared to enhance the classroom dynamic, fostering engagement with the teacher. Despite this, there was minimal peer-to-peer interaction observed, indicating that the primary form of communication was between student and teacher. Nevertheless, the students exhibited positive and respectful interactions when engaging with one another.

A noteworthy behavioural pattern was the frequency with which students left the classroom to answer phone calls. Upon discussing this with the teacher, I learned that students were allowed to leave class to take personal calls, a practice justified by the teacher to reduce distractions and anxiety. This dynamic appeared to accommodate the students' familial responsibilities, allowing them to remain mentally present in class without the stress of missing an important call. By addressing the students' needs in this manner, the class environment was designed to be flexible and supportive of the students' broader social contexts.

#### **4.3 Answering the Research Questions**

This subsection is divided based on a variety of sources, including participant observation, student feedback, educator narratives, and official publications from the municipality and from

experts in the field. It begins with outlining the implementation of digital tools in the school, detailing how these tools are presented to students and what resources the municipality provides.

#### **4.3.1 Research Question A**

**What are the specific digital tools and resources provided to immigrant women within the introduction program?**

According to my main informant at the school where this research was conducted, the implementation of digital tools in the classroom began in 2009. This informant played a pivotal role in the initial implementation, aligning digital tools with pedagogical purposes, a process I describe in further detail. Since then, the school has gradually infused digitalization into its curriculum and operational framework. As a participant observer embedded within the program, I have through the course of my fieldwork closely observed a significant digital transformation, marked by the increasing integration of an AI-driven platform, not only in teaching methods but also in the ways participants themselves utilize digital tools.

Historical details about the initial implementation of digital tools were gathered through interviews with educators. As Educator 1 explained, the model for creating computer labs was inspired by similar setups in Norwegian high schools:

*Since, I think, 2009, I've been an online teacher. And I also have been IKT [in English, ICT] pedagogic responsible for the last five or six years. [...] I was in on a project, and we visited a high school to see how they used study rooms [rooms with computers for the students use], how they built them, and then we built our study rooms after. I was in a group who decided how to build them here in the school. [...] And then they did not listen to me, and they just did the first study room here, the first data room. Not as I had said, and I was so angry. So, I went up to the rektor [principal] and I said, well, you put me in a group to tell how [...] I am going to work in this room. You do not make it pedagogical at all. (Educator 1, 2024)*

As described by Educator 1, the goal of the implementation was to create a computer lab for students to use independently, tailored to their individual needs. This educator, who was actively involved in the planning and implementation of the lab, reflected that the initial design

in 2009 did not fully address the pedagogical needs of the students, despite those needs being a key consideration during the planning process by this educator.

Besides that, the educator highlighted the complex nature of digitalization, emphasizing that merely replacing analogue tools with digital ones fails to capture the transformative potential of digital technologies. The educator pointed out the significant gap between the high cost of advanced technology and the insufficient training provided to educators, which has hindered the effective integration of digital tools.

*I said, I think in our level we don't need smart boards, we can use white boards. And since then, I have never, I don't often write on the board with a tush (marker). I normally just use my computer to write, and they can see how I use it. So that's something different from teacher to teacher. Someone used the white board the old way, I use mostly the tastatur (keyboard) when I want to show them what to do. [...] So, they [other teachers] didn't use it [smartboard], and I said, but you just use it [smartboard] as a white board, you don't use it as a smartboard. [...] So, I said, why do you buy smart boards for seventy thousand kroner (Norwegian kroner) if you don't use them? [...] It's kind of a revolution, but you have to use them if you want them to be a revolution. (Educator 1, 2024)*

While certain digital tools have been in use for decades, the pandemic acted as a catalyst, accelerating the widespread use of computers and other digital technologies among students. Due to social distancing measures, in-person classes were cancelled, and the shift to online learning became a necessary adaptation. Government initiatives aimed to provide financial aid, so the student buy technological devices to support this transition. However, some students prioritized familial needs over acquiring laptops, underscoring the reality that digitalization may not be a primary concern for those struggling to meet basic needs. This issue was also highlighted in one of the interviews with educators. In the respondent words:

*And it always stops in NAV system and the program will say, no we can't do that [give a computer], we can only give them the money to buy one, but we can't give them a computer instead of the money [...] the problem is that when you are not a refugee, you just go and buy a computer when you need it. And when you are a refugee, you want to send the money back to the family in your home country. (Educator 1, 2024)*

In an interview with Educator 2 about the foundational education class, the tools provided by the school were discussed, specifically those available to students. The educator explained that the pedagogical strategy begins with less literate students using iPads, followed by a transition to PCs as part of the program's progression. Educator 2 also acknowledged that engagement with digitalization is central to the IP.

*Then we move away from the iPad to a PC. Even though the iPad also has Google and everything, and you can use Classroom, they're learning a bit more about writing now. [...] The school is now putting a lot of focus on digitalization. We have iPads and PCs. And we have PC cabinets where students have access to practice and use them extensively. (Educator 2, 2024 [Translated by the author])*

The iPads are equipped with apps specifically designed to enhance learning and engage students with educational content. These devices are particularly beneficial for students with low literacy, as they offer an alternative to traditional keyboards, which can be more challenging for some learners. This educator also emphasized the importance of providing access to PCs and laptops, especially for students with limited or no prior exposure to digital tools, typically those with low levels of education. The educator acknowledges that by using these devices, students have the opportunity to develop essential digital skills, such as typing and using software that mimics real-world tasks. This not only helps build digital literacy but also prepares students for practical, everyday applications in their personal and professional lives. Educator 1 also noted in their interview and as I observed firsthand, both classes also have access to PCs and laptops, which are stored in designated areas, such as PC lockers.

In terms of software tools, one of the primary platforms used in the classroom is Google Classroom, where students can access assignments, share materials, and track their weekly educational progress. To support students who are not fluent in Norwegian, translation tools like Google Translate and other translation apps are permitted. These tools help students better understand course content and actively engage in class discussions. Additionally, students are allowed to use mobile phones in the classroom. Many are familiar with apps like WhatsApp, where they often rely on voice messages for communication, particularly due to challenges with literacy.

In the observed advanced education classes, students use a variety of digital tools, including Google Classroom, Microsoft Word, and Google Translate. They also utilize ChatGPT, including a version protected by Feide, a secure login system for accessing public databases and services. This Norwegian version of ChatGPT, often referred to as *KI i skolen*, is a generative AI language model implemented in several municipalities across Norway. Here a following example how this platform is pretend in one of the Agder municipalities:

AI, KI, in Kristiansandskolen is a solution to give teachers and students in Kristiansandskolen access to use creative artificial intelligence in a safe way. The solution is based on an API to the language model GPT v3.5. from OpenAI with its various language models. Although it is behind FEIDE login, it does not store personal data. (Kristiansand Kommune, 2023)

Empirically, the specific model in use is GPTv3.5, a version of OpenAI's language models known for its ability to generate human-like text, answer questions, and provide explanations. During this research, the topic has been debated publicly, as the existence fear of replacement of humans by AI, and even plagiarism issues, as AI can reproduce text of a lifetime of intellectuals and artists. However, it was observed a very positive approach by the Ministry of Education, since it is recognized as a tool, and was improved to guarantee a secure login system using Feide, used across Norwegian educational institutions. There is a whole webpage that addresses to the justification to use the AI platform offered by the municipality with login on Feide, as ensuring full anonymity, no personal data or user logs are stored, and texts sent to the AI cannot be traced back to individuals (GDPR – Hvorfor er det greit å bruke denne tjenesten?, u.d.).

This system ensures that only authorized users, such as teachers and students, can access the AI tool, preventing unauthorized use. A key distinction of the municipality-provided KI tool, compared to the public ChatGPT, is its adherence to Norway's strong commitment to privacy, operating without storing any personal data. However, access through Feide requires a digital ID, which is a gateway to many online services. Those without a digital ID are effectively excluded, becoming "digitally invisible" and unable to access services that significantly impact their offline lives. This exclusion highlights critical questions about digital citizenship, making it an essential topic for further discussion.

Out of concern for security, while investigating the origins of Feide, I also examined other platforms like Google Classroom and Microsoft Teams, both controlled by tech giants Google and Microsoft, which dominate many of the online platforms used in education. Notably, this information was neither highlighted in the municipality's public documentation nor communicated to students during my time in class, raising questions about transparency if security is indeed a significant priority in the Norwegian education system.

Turn to the advanced education classroom where I conduct part of the fieldwork, I usually arrived after the students, as they had previous classes before the digital ones. I observed students with their personal smartphones placed on their desks. Throughout the lessons, many frequently used their phones, with Google Translate being the most common tool. It appears to be the primary digital resource they rely on. In certain sessions, known as digital classes, the teacher provided laptops for each student. One student would retrieve a key to the storage room where the laptops were kept, each labelled with an ID number assigned to a specific student. The students would then line up, follow the key-holder to the room, locate their assigned laptops, and unplug them from their chargers. These laptops are stored plugged in, so they are fully charged when the students pick them up. However, this wasn't always the case during my observations. Occasionally, students had to select a different machine because some laptops had not been properly charged.

Besides some laptops were found with no battery, in every class I've attended, at least one student has needed assistance logging into these devices, usually struggling with their username and password. Before they announce the issue, they spend some time trying to fix it by themselves. Even teachers occasionally had to rely on IT support for tasks like student registration. This challenges the notion that technology can fully replace human interaction and roles in education. Simple tasks as plug to charge or not registration, is a time-consuming activity and rely on and one or more person. On three separate occasions during my observation, a seemingly simple step to access digital materials took nearly 45 minutes, consuming the entire class period.

The answer of the first research question according to the empirical findings reveal that since the implementation of digital tools in 2009, the school has integrated a variety of technologies to support students' learning, including iPads, PCs, Google Classroom, Microsoft Word,

Google Translate, and *KI i Skolen*. These tools are used to enhance digital literacy, facilitate language learning, and provide access to educational resources. Notably, the use of AI and the Feide login system has become central to the school's approach during my observation. Despite these advancements, challenges such as access to technology, technical issues, and the need for ongoing educator training were also identified.

#### **4.3.2 Research Question B**

**How do women and educators in the introduction programs access and apply digital technologies, and what impact does this have on their learning experiences?**

To enhance clarity, the findings to answer the research question B are organized under distinct subheadings: educators' perspectives on digital tools, students' experiences and access to digital technologies, attitudes towards AI, and the broader impact of ICTs on the learning dynamic. This structure aims to present a logical flow, allowing readers to understand the multi-faceted relationship between digital tools and learning in the IP.

***Educators' Perspectives on Digital Tools.*** Both educators interviewed in this inquiry have a positive narrative towards digitalization. They exhibit a positive attitude towards the use of digital tools in life in general and in the IP, viewing it as a valuable tool when used “correctly” to enhance teaching and learning experiences and also adhering to the government guidelines to digitalization. Educator 1 sees digitalization as crucial for full participation into Norwegian society, as access to many essential services is primarily digital in the following words: “It [digitalization] is important for integration because the Norwegian society is now digitalized”. Based on my firsthand experience and observations, digital literacy is indispensable for accessing a wide range of public and private services. Without it, individuals often face exclusion from essential resources. In addition to digital skills, having a digital identity, such as BankID, is critical for navigating many aspects of daily life. BankID facilitates access to key services, including banking, welfare benefits through NAV, healthcare platforms like Helse Norge for booking doctor's appointments and viewing medical records, and educational systems that monitor children's progress through applications like Visma and Spond. It is also a vital tool for online shopping and everyday transactions, highlighting its foundational role in economic and social participation.



Yet the educator discusses the efforts and challenges to tailor teaching environments, emphasizing the importance of flexible approaches that cater to diverse student backgrounds and learning goals.

*If you're going to be a digitalized teacher, you have to work with didactic. How are you going to use the tool so that the student can learn in another way? How can we take the most out of digitalization [...] you have to transform the way of teaching. It's not a big revolution. You just have to do some small adjustments. (Educator 1, 2024)*

The statement emphasizes that effective integration of digital tools requires educators to align their teaching methods with the capabilities of these tools. The term “*work with didactic*” highlights that educators must thoughtfully design their lessons to harness the potential of digital technologies, ensuring that tools are not used arbitrarily but are aligned with specific learning outcomes.

Regarding usability, Educator 2 highlighted that many immigrant students, particularly those with lower education levels or limited prior experience with digital tools, face initial challenges. The process can be challenging, particularly, as they require close and ongoing guidance for basic tasks like logging in, using passwords, and navigating the software. However, with patience, time and support, they can learn, or not and start over. In the educator words:

*It [to teach basic access] takes a little time, then you have to sit with them and show them. Then it's a case with those who have little schooling background. You have to show it, sit with them, show them. [...] Passwords, usernames, and all that, you need to prepare that. Also, they need to take pictures, and maybe they forget them at home. These are people who know only a little. And whether you work with them every day or just one day a week, it doesn't matter. Everything has to be, we just have to start over again. [...] But they only use it [smartphones], for example, when they contact through WhatsApp. (Educator 2, 2024[translated by the author]).*

In terms of infrastructure accessibility, the IP provides essential tools such as iPads, PCs, internet access, digital IDs, and teacher guidance to help students develop digital literacy, yet it was observed to not be enough for those with low literacy or no previous relations with digital technologies. The access and usability of these resources depends on the students' backgrounds,

and additional efforts are required for those with limited prior exposure to technology. Apps like Google Classroom and Google Translate play a key role in making content accessible, particularly for students with varying levels of language proficiency. However, this was not always the case for the students observed in the foundational education class, who struggled even with basic access. Smartphones are also used, especially for communication, as students with literacy challenges often rely on voice messaging through apps like WhatsApp.

The accessibility of voice messages is a valuable tool for overcoming literacy barriers, enabling students to communicate despite limited reading and writing skills, even in their native language. This tool fulfills its primary purpose of facilitating communication. However, other digital resources provided by the program, such as Google Classroom, present greater challenges. As observed, some students spend a considerable amount of class time simply trying to access the platform, highlighting that while these tools are useful, they also require time and support to be effectively utilized. When asked about their experience with these tools, one student in the foundational education class, who was struggling, remarked: “det er bra, men er vanskelig” (in English: “it is good, but it is difficult”). This response suggests that the student may be limited by language barriers or may not fully recognize the relevance or applicability of the tools to their learning.

The findings illustrate a dual reality: while digital tools have immense potential to enhance learning and integration in the Introduction Program, their effectiveness depends heavily on the user’s prior experience, literacy level, and access to guidance. For educators, digitalization requires thoughtful adjustments to their teaching methods, emphasizing flexibility and the need for targeted support. For students, especially those with limited digital literacy, the tools provided can be both empowering and challenging, necessitating sustained guidance to realize their full potential. These insights highlight the critical interplay between accessibility, usability, and the broader impact of ICTs on learning, answering the research question by demonstrating how women and educators navigate digital technologies to foster integration and education in the Norwegian context.

***Students’ Experience and Access to Digital Technologies.*** This section delves into how women in the Introduction Program (IP) access and engage with digital technologies in their daily lives and educational settings. Drawing from interviews and observations, it highlights

the tools they frequently use, the challenges they encounter, and the ways these technologies impact their learning experiences. By examining their personal and academic use of digital devices, this section underscores the critical role of digital tools in fostering communication, language acquisition, and integration into Norwegian society, while also revealing the barriers that can hinder their effective application.

Starting with Student 1, she highlighted the digital usage in her daily life:

*First is for communication with my family, I use WhatsApp. Almost all news I read in Telegram channel, it's popular in Ukraine. I think I have a lot of telegram channels now with different kinds of news. Some are bad, some are about fashion, movies, all my interests. [...] I use sometimes Skype, but it's not popular, only for video calls. Maybe some parts of my apps are for photos [...] YouTube of course because I like it when I have free time. I try to listen some Norwegian, I tried to use it for my language improvement. [...] Computer and laptop, I use only Word, YouTube and watch movies on Netflix. (Student 1, 2024)*

Student 2, who is also from Ukraine, mentioned the use for communication and reading:

*I used Skype before to talk with my friends. I use some social media like Instagram, Facebook, and some groups. Also, I use it to read books. I read a lot online [...] I use it [phone] daily because I use a lot of apps. I make videos with these apps. Also, I speak a lot with my family. For example, on telegram. Or we call each other by Internet not by normal telephone. [...].*

These two statements reveal that digital tools play a central role in the daily lives of participants, particularly for communication, information access, and entertainment. Both students emphasize the use of apps like Telegram to stay connected with family and friends, reflecting the importance of digital technologies in maintaining relationships across borders. Telegram, in particular, emerges as a popular platform among Ukrainian participants, used not only for communication but also for accessing news and content tailored to their interests. Tools like YouTube also serve dual purposes, providing entertainment and supporting language learning efforts, as students actively engage with Norwegian content to improve their skills. While digital devices such as smartphones are integral to their routines, computers and laptops are

used more sporadically, mainly for tasks like word processing and streaming. These insights underscore the multifaceted utility of digital tools in facilitating integration, language acquisition, and connectivity, while also highlighting how personal preferences and cultural contexts shape the adoption and application of technology.

Student 3, originally from Syria, spent over a decade in Turkey, where she earned a master's degree in business management, her field is rooted in statistical analysis. She highlighted her familiarity with coding-related programs, such as Code LLaMA. Besides this high literacy with digital technology, she relies on her smartphone, primarily using WhatsApp to stay connected with her family, like the other participants. She expressed gratitude for this tool, saying, "Thank God to technology" (holding her phone) for being able to connect with family members she has not seen in four years. Her parents only know her children through the internet. As the only participant with school-aged children, she highlighted the widespread use of digital technology, such as tablets and computers, in Norwegian education, something she did not experience in Turkey. She is very positive about the role of technology in education but also voiced concerns about the heavy reliance on screens, particularly regarding their impact on children. Despite this, she tries to limit her own screen time and avoid spending too much time on her phone.<sup>7</sup>

Her experience offers valuable insight into the diverse ways women in the introduction programs access and apply digital technologies. Her advanced digital literacy, coupled with her reliance on smartphones for communication and her positive but cautious attitude towards technology in education, reflects the complex relationship that many immigrants have with digital tools. While these technologies enable connectivity and educational opportunities, they also present challenges related to screen time and over-reliance. This nuanced perspective highlights the need for tailored approaches in integrating digital technologies into the learning experience, particularly for students with varying levels of prior exposure to technology.

Student 4, also from Syria, had limited experience with digital tools prior to coming to Norway. Her previous role in school administration involved managing a student database, which was more of a storage system than a dynamic educational tool. This limited her exposure to

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<sup>7</sup> I did not use direct citation from this interview because it was mediated by an interpreter.

interactive learning and digital engagement. Additionally, she described the challenges she faced in Syria due to inconsistent electricity access, which further hindered her ability to effectively use digital technologies.

During the interview, which was conducted in Norwegian, she had just started her first week of language classes in the IP. Before being granted place in the IP, to learn Norwegian, she made use of various digital platforms, such as Duolingo for language learning, YouTube for video lessons, and Instagram, where she followed Norwegian language teachers for additional support. This approach highlights her resourcefulness and commitment to self-directed learning. In addition to her educational pursuits, Student 4 enjoys playing puzzle games on her smartphone during her free time, a hobby she finds both relaxing and mentally stimulating. She also actively uses her smartphone to stay in touch with her family, demonstrating how digital tools are integral to maintaining personal connections as well as supporting her educational goals.<sup>8</sup>

In contrast, the findings from the focus group with Students 5, 6, and 7 from Eritrea illustrate the distinct challenges they face in their integration into the Norwegian education system, particularly concerning digital tools. Student 5, who has low literacy in her mother tongue, Tigrinya, and has been living in Norway for two years, faces significant barriers in adapting to digital technologies. Student 6, who has lived in Norway for nearly 14 years but only began school this year, spoke about her lack of access to both PCs and mobile phones during her time in Eritrea. Although she has developed strong oral Norwegian skills and often acts as a translator within the group, she still struggles with basic tasks such as typing on a computer and writing texts in Norwegian. Student 7, who had some exposure to PCs in Eritrea, shared similar challenges, highlighting discomfort with using PCs and preferring mobile phones for most daily tasks. A statement that was agreed with the other two participants.

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<sup>8</sup> I did not use direct citations from this interview because part of it was not recorded, and the notes taken during the interview were not detailed enough. For better readability, I chose to present the information in paraphrased form rather than as direct quotes.

This preference for mobile phones over PCs is not just a matter of convenience but also speaks to a lack of exposure and confidence with computers. During the focus group, the students noted that they primarily use mobile phones at home for communication and other daily functions, while PCs are only used in school settings. This suggests that their engagement with technology is limited and that they do not perceive PCs as necessary outside the classroom.

In terms of accessibility, Student 5 noted that her family in Eritrea lacks access to internet and social media, which further complicates their ability to communicate. She explained, "My family doesn't have Wi-Fi" [translated by the author], indicating how difficult and expensive it is to stay in touch through traditional phone calls. Similarly, Student 7 mentioned using her mobile phone to stay connected with her child's kindergarten in Norway, highlighting the reliance on mobile technology for both personal and educational communication.

While the students expressed a strong desire to improve their Norwegian language skills, they also acknowledged the challenges they face in using digital tools effectively. Their difficulties with basic functions, such as logging into devices or navigating software, indicate a gap between their current digital skills and the skills required for their educational participation. This suggests that while the students see digital tools as beneficial for their learning, more support is needed to help them effectively use these tools to enhance their integration and education.

The findings regarding students' experiences underscore the significant disparity in educational backgrounds and digital exposure among the students in the IP. While some participants, like Student 3, bring advanced digital literacy and familiarity with various educational tools, others, such as Students 5, 6, and 7, face considerable challenges due to limited access to technology and formal education in their home countries. This gap in digital skills and educational experiences highlights the need for tailored support within the Norwegian educational system to bridge these differences. Ensuring equitable access to digital tools and targeted digital literacy training is essential for enabling all students to fully engage with their studies and integrate into Norwegian society.

***Attitudes towards AI.*** The use of AI tools varies among participants, the following accounts highlight how students interact with AI-driven applications like ChatGPT, Google Translate, and Duolingo, as well as their perceptions of AI in education.

Student 1 highlighted the use of AI tools in their personal and professional life, noting both the potential and limitations of such technology within their field.

*But recently, I used for example Chat GPT or something like this. But of course, in my area, in law area, I could use only computer without some creative parts. Sometimes for my free time, I want to know about some a book, so I ask, 'what about this book?' But I didn't have a lot of free time to read it, and I just asked Chat GPT to help me in this part, but in my profession it's not very popular. (Student 1, 2024)*

This statement highlights the selective use of AI tools like ChatGPT, where their utility is perceived to be more valuable in personal contexts rather than professional ones. In fields such as law, which demand strict adherence to factual accuracy and specialized knowledge, the use of such tools is less common. The participant specifically noted how AI facilitated quick access to summaries of books they lacked time to read, illustrating how AI can serve as a time-saving resource for personal enrichment, though its professional application remains limited.

Student 2, who is from Ukraine, mentioned the use of an AI driven application without acknowledging it was an AI, noting that this student is a Chinese language learner:

*I use it [Google Translate] in the university very much because Chinese is hard language to learn, and I have to find some information on the Internet also as a translator I use a lot of different types of apps and translators on the Internet. [...] Google translator the most the fast from everything you could take a photo, or you record your voice and all other translators you just could use them when you're sitting home and writing something not in the process. Sometimes I use AI, but not very often. I don't want to have this habit to use AI for everything, and it's not allowed here in Norway. And I don't want to have this habit to use it very often. (Student 2, 2024)*

By discussing the participant's use of Google Translator, which involves the text and language detection from pictures, for instance, is a tool driven by AI. Noting that AI is not limited to language models like ChatGPT. During the field work I received the February edition of a Norwegian Academic Research Magazine, *Forskerforum*, which the cover was related to the AI revolution. The magazine article highlighted a common misconception of AI, which is solely

associated with language models, the Professor and Prorector of the University of Bergen (UiB), Pinar Heggernes (2024), states:

Now everyone talks as if this (ChatGPT) is something new, but we have been working with it since the 1980s. However, there is now access to much more digital data than before, which has made the theories practically useful. Quite suddenly, we have gained access to a multitude of new tools that have become good at communicating in human language, giving the impression of talking to an intelligent being. Because the word 'intelligence' is used, it can seem overwhelming, but for me, this is just a part of digitalization. (Gjengedal, 2004, s. 17 [Translated by the author])

From that statement highlights the importance of emphasize the tool usage, some are based on AI without the users acknowledging it. The institutional implementation of AI based on ChatGPT, *KI I Skolen*, in some Norwegian municipalities took place in January 2024, coinciding with the time I was in the field. That was a lot of noise around the digital policies involving it, yet other applications driven by AI, such as Goggle Translator, which have been used by students and teachers for a long time did not receive the same level of introduction or attention as the new language model with generative pre-trained transformer (GPT).

Student attitudes towards digital tools and AI, when acknowledged, range from scepticism to embracement. While some verify AI platform responses, as Student 3 that came prepared for the interview with a screenshot of her verifying if the *KI i Skolen* was reliable. Others readily incorporate technology into their learning, as I observed during the fieldwork even utilizing it to facilitate language practice, as a second interlocutor, which is not recommended according to the guidelines for AI usage (Kristiansand Kommune, 2023). Reflecting on the benefits and drawbacks of technology in education reveals its potential to offer round-the-clock assistance and address language barriers, albeit with the warning of potential social isolation among students.

Student 3, the coding-related program she is familiar with is Code LLaMA, an AI model developed by Meta and commonly used by software engineers and developers (Meta, 2023). During her time in Turkey, she frequently used Google Translate to assist in learning Turkish. When asked whether she prefers Google Translate or *KI i Skolen*, she remarked, "Both, but in my experience, the KI program provides better results and translations."



Student 4, a new participant in the IP from Syria with a background in educational administration, shared her positive experience with the AI-driven language-learning app Duolingo. She used the app extensively before securing a spot in the Norwegian course, which contributed to her impressive Norwegian proficiency; the interview with her was conducted entirely in Norwegian. She described Duolingo as straightforward and engaging, highlighting its role in making Norwegian more accessible.

I did not delve further into this topic during the focus group, as I recognized limitations in their experience, particularly since they did not have access to *KI i skolen* at the time of my visit to the class.

***ICTs impact in the learning dynamic.*** The integration of ICTs in educational contexts has significantly reshaped the learning dynamics, especially in multicultural settings where students' digital literacy levels and language proficiency vary. This subsection specifically addresses how ICTs impact students' access to learning resources, collaboration with peers, and the development of digital literacy, as well as how cultural and linguistic diversity influence the use of these tools.

During the “digital classes”, the routine of borrowing laptops illustrates a “physical” activity, as the students get up from their desks, walk to a slightly closed room on the same floor, stay in a queue and each one detached their assigned laptops from the chargers. The short hour on using digital devices at IP, count on that activity of finding it and delivering back. Since they are back to their desks, start the process of login, first the devices and in the other online platform, all of them relies on the Feide system, which indicates a significant move towards centralized digital identity management in educational contexts. Students utilize various platforms such as Google Classroom and *KI i skolen* designed for education. While these resources enhance the learning experience, they also require a level of digital literacy that not all students possess initially, becoming a challenging that takes the fulltime of the class in just to login in those platforms. I participate in those classes sometimes helping the students to login, or following a long waiting since the PCs was fully logged. According to the teacher, that usually happened at the first time, after the student are used to it, the process becomes shorter.

Frequent requests for help signal that many students face hurdles in navigating technology, emphasizing the need for additional support structures. The observed reliance on peer assistance

highlights collaborative learning dynamics, especially among female students, who often seek help from each other, reinforcing social bonds while navigating the challenges posed by technology. When the peers and teacher cannot help, IP personal is also involved.

In the Foundational education class, some students struggle with literacy in their mother tongue, which increased the difficulty to access digital tools. The multicultural context may complicate technology integration, if we consider the Western model of keyboards which does not contains other symbols from other languages, such as Arabic. However, iPads can offer a digital keyboard tailored for the language chosen. While many women are familiar with different languages, accessing resources in Norwegian, others are still struggling with basic understandings. The use of Google Translate demonstrates a bridging of these linguistic barriers, though it may also reflect an over-reliance on technology to facilitate communication.

About the hardware's, the time consuming of logging seems to be a gap in the learning process, as the student distract until the moment, they can use the platform required for the assignment of the day. The reliance on the IT department for support indicates that educators may not always have immediate solutions, potentially impeding learning. This also reflect the need for personal for digitalization process and maintenance, in this point the machine did not replace professionals both in learning process and on the digitalization process.

As I notice, most female students displaying their PC, smartphone, notebooks and books on their desks, I had an insight about how multiple devices (laptops and smartphones) can lead to cognitive overload, where the learning process becomes fragmented. As an observer, I was quite challenged to describe this picture and the dynamic during the class, in a blink the students shift from one to another, check the phone, write a note on the notebook, go back to the book. When I asked the students why they also had a notebook and pen when they could use an online document and type notes, the participants told me, to write down help in their learning process, they could memorize and learn faster, instead of just read on the screen. More than hesitation to fully transition to digital tools, their learning process is connected to traditional tools.

While digital tools facilitate individual learning, some of them fear that they also risk fostering isolation, as Student 1 observed if students rely heavily on technology at the expense of collaborative learning experiences, what I observed more among male students. The dual use of devices reflects an attempt to balance traditional learning methods with modern technology.

In conclusion, the findings related to research question B, emphasize the significant yet complex role of digital technologies in the IP. While they offer immense potential for enhancing integration, communication, and education, their impact is mediated by individual digital literacy levels, cultural contexts, and infrastructural support. Educators must adopt flexible, didactic approaches to maximize these tools' benefits, ensuring they are accessible to all learners. For students, especially those with limited prior exposure to technology, digital tools are challenging, and also highlight gaps, as the connection with their families, where there is no internet access. Bridging these gaps requires targeted interventions, including training, tailored guidance, and investment in user-friendly systems. These observations illuminate the nuanced interplay between technology and learning, providing valuable insights into fostering inclusivity and effectiveness in multicultural educational settings.

### ***4.3.3 Research Question C***

**According to women and educators' perspectives, how does the integration of digital technologies within the Norwegian introduction program impact the social and economic inclusion of immigrant women?**

This section addresses Research Question C, exploring how the integration of digital technologies within the IP impacts the social and economic inclusion of immigrant women, based on the perspectives of both participants and educators. The findings highlight the dual role of digital tools in facilitating access to job opportunities, building networks, and maintaining connections, while also revealing significant barriers related to digital literacy, cultural nuances, and infrastructure. By examining the varied experiences of students and the reflections of educators, this section provides a nuanced understanding of how ICTs influence integration outcomes, setting the stage for a broader analysis in subsequent chapters.

For Student 1, digital tools played a pivotal role in facilitating job search activities, including creating CVs and cover letters, understanding job market expectations, and preparing for Norwegian employment opportunities. This underscores how digitalization equips individuals with practical skills essential for enhancing their socioeconomic integration by providing access to the labor market. By the conclusion of this research, Student 1 successfully utilized the NAV website to apply for a position and secured employment. Her ability to navigate this critical platform and adapt her applications to align with Norwegian standards was instrumental in her

success. Reflecting on her experience during an interview in January 2024, she described the exposure to such technology as both empowering and confidence-building, emphasizing its significance for future employment prospects and expressing optimism about her opportunities ahead.

In addition to recognizing the role of digital tools in supporting economic inclusion, Student 1 expressed appreciation for their availability in the classroom, contrasting this with the limited access she experienced in Ukrainian educational settings. When discussing social inclusion, she provided a thoughtful response, reflecting on how digital technologies shape her ability to connect with others. She highlighted the value of platforms like Instagram and Facebook for discovering social events, which are commonly used in Norway, and described how these tools help her find opportunities to meet people with shared interests. However, she also emphasized that most of her current friendships began through in-person interactions at her Norwegian school, suggesting that while digital tools are useful for initiating connections, face-to-face interaction remains important. Her statement humorously illustrates the cultural and personal challenges of making friends in a new environment:

*For Norwegian people I can't imagine going to the street and say "OH hello, I want to have friends" (laughter). It's an impossible thing. I search some information on Instagram and Facebook [she refers to social events promoted on social media], for example, a meeting with pizza to some place. Yesterday I found it, and I will go to this meeting and meet people. I first found on Internet, on Instagram, this information and I think it helped me. But of course, now I have most of my friends from Norwegian school, so we first met without Internet. I think in the future I will have the opportunity to meet new friends only with the Internet. Because first, I can find people with the same interests. I can't imagine finding new friends on the street, for example.*

This reflection adds context to the cultural dynamics of social integration and aligns with the section's focus on the role of digital tools in fostering inclusion. Student 1's humorous account resonates with a broader observation: initiating conversations with strangers in public, particularly to form friendships, is generally uncommon in Norwegian society. This cultural nuance underscores the challenges of social integration in a new environment. Moreover, as both Student 1 and I observed, this difficulty is not unique to Norway but reflects a global shift,

where relationships increasingly begin in digital spaces. Platforms like Facebook, which are widely used in Southern Norway, play a crucial role in organizing social events and facilitating connections. My own experiences as a foreigner echo this sentiment, as digital tools have been instrumental in helping me build networks and discover events in the city, further reinforcing their significance in supporting social inclusion for immigrants.

This finding reinforces what Student 2 said about finding people online: “The teachers show a lot of popular websites [Facebook groups] which everybody used in Norway, and I could explore it together with someone who already knows it.” While the interviewee expresses a preference for in-person friendships, she acknowledges that technology facilitates initial connections, making it easier to build a network beyond the classroom. This digital aspect contributes to her social integration, as it provides more channels for engagement, helping her connect with others and integrate into Norwegian society. However, she also recognizes the potential downsides of relying solely on technology, particularly the risk of isolation. She values technology as a tool for connection, skill-building, and a stepping stone toward deeper immersion in Norwegian culture.

Later in the interview, Student 2 reflected on how she tries to limit her dependence on technology, striving to strike a balance between online and offline interactions for her mental well-being and adaptation to the Norwegian lifestyle. Interestingly, when asked about the economic impact of digital tools, she could not identify a direct connection to her economic inclusion, such as finding jobs. However, she shared how digital tools aid her social integration by helping her navigate cultural differences: “That's nice when I don't understand some cultural things...I could ask it to AI and it will give a lot of examples, and I will write it down to my notes.” This highlights the role of technology in supporting cultural understanding and social inclusion, even if its direct impact on economic inclusion remains less clear. Despite some reservations about the potential effects of digitalization, Student 2 recognizes the value of these tools in her journey toward integration.

Student 3 made a clear distinction between the social and economic outcomes of using digital tools. Socially, she expressed that digitalization does not have a significant impact on fostering in-person connections, as people primarily use phones and social media to interact, which reduces face-to-face engagement. While she acknowledges that technology plays a role in

facilitating communication, she believes it cannot fully replace the value of direct social interaction for building relationships and integration. On the positive side, technology also allows her to stay connected with her parents in Syria, which is a crucial aspect of her well-being. This ability to maintain family ties provides emotional support, which in turn contributes to her mental health and creates a more stable and positive learning environment.

As Educator 1 mentioned that the ability to communicate with family back home via smartphones contributes positively to the psychological well-being of immigrants, particularly refugees. “I see that the physical health is better for the refugees because of the smartphone. Because they know how their family members are... Now they can just click on a mobile phone, and they are right in the face.” This connection helps alleviate stress and enhances their overall mental health, allowing them to engage more effectively in educational activities. In turn, this supports both their social and economic inclusion, as psychological stability is crucial for learning and skill development. The educator further explained that the flexibility within classrooms to use digital tools empowers immigrant women, making them feel more engaged and eager to learn. “If you are thinking about something else and you are sitting the whole time waiting for the break to take the phone call, you will not learn anything.” By allowing students to address their personal concerns and maintain connections with loved ones, educators create a more conducive learning environment. This flexibility supports the emotional well-being of students, particularly those facing the challenges of displacement. Overall, the integration of digital technologies not only facilitates communication and enhances well-being but also empowers immigrant women by promoting their active participation in educational settings, thereby contributing to their successful integration into Norwegian society.

On the economic side for Student 3, she views digital tools more positively, especially in terms of saving time and increasing efficiency. For example, she noted that learning a new language is made easier through digital technologies, which help her understand texts more thoroughly and access various learning resources. The convenience of these tools allows her to perform tasks more quickly, thereby contributing to her economic inclusion by improving her ability to engage with the labour market.

Overall, Student 3’s perspective reflects a nuanced view: while digital tools support aspects of socioeconomic inclusion, such as language acquisition, maintaining family ties, and enhancing

task efficiency, they do not fully address the social integration needed for broader inclusion. Face-to-face interactions remain crucial for creating lasting relationships and cultural immersion, indicating that while technology aids integration, it cannot replace the social connections essential for full societal participation.

Student 4 highlighted the significant role of digital tools in language acquisition, which is essential for her economic inclusion and social integration. By using digital resources, she is able to improve her language skills, a key factor for accessing job opportunities and participating more fully in the local community. In addition to supporting her language development, digital connectivity enables her to maintain important family ties, which she refers to as contributing to a "family connection." This connection not only reinforces her sense of stability but also enhances her mental well-being, which is crucial for her overall integration into Norwegian society. Both educators also emphasized how maintaining family connections through digital tools can promote emotional well-being, creating a more supportive and effective learning environment. This combination of language learning and emotional support underscores the multifaceted role of digital tools in promoting both social and economic inclusion, thereby facilitating the integration process

The experiences of Students 5, 6, and 7 underscore the dual impact of digital technologies on social and economic inclusion, revealing both opportunities and significant challenges. During the focus group, these students struggled to articulate how ICTs directly supported their integration process, reflecting a limited connection between digital tools and their experiences. While smartphones played a role in fostering communication and maintaining connections for two of the participants, Student 5 highlighted the absence of internet access for her family in Eritrea, which further complicated maintaining cross-border social ties. So, the comfort provided by communicate with family, this participant does not have. Adding to their limited proficiency with more advanced technologies, such as PCs and educational platforms, coupled with the lack of focus on using digital tools for economic opportunities, significantly restricted their broader inclusion. This digital divide is compounded by foundational education gaps, making social inclusion even more challenging, as their lack of confidence in navigating essential tools deepens existing barriers.

Reflecting on these challenges, the perspective of Educator 1 becomes particularly relevant. They emphasized the importance of a didactic approach, requiring educators to thoughtfully integrate digital tools into teaching to support diverse learning needs. As the educator noted, “There is a training with the teachers... We have had a lot of workshops.” This highlights the critical need for ongoing professional development in digital literacy for educators to effectively guide immigrant women, enabling them to overcome barriers and engage more fully in social and economic integration processes.

The findings reveal the multifaceted role of digital technologies in promoting social and economic inclusion among immigrant women in the Norwegian Introduction Program. While digital tools enhance communication, facilitate job search activities, and support language acquisition, challenges such as limited digital literacy, foundational education gaps, and the potential for social isolation hinder their full potential. Educators play a pivotal role in bridging these gaps by adopting tailored, didactic approaches and leveraging technology to meet diverse learning needs. However, ensuring equitable access to digital tools and providing sustained guidance are critical for enabling immigrant women to harness the transformative potential of digital technologies for integration. These insights underline the need for targeted interventions at both institutional and policy levels to maximize the inclusive impact of digitalization in multicultural settings.

#### ***4.3.4 Research Question D***

**From educators’ perspectives, how effective are digital integration initiatives in the IP for socioeconomic inclusion, and what policy recommendations emerge from their experiences?**

This section addresses Research Question D, focusing on educators' perspectives regarding the effectiveness of digital integration initiatives within the Norwegian Introduction Program for socioeconomic inclusion. The educators provide valuable insights into both the potential and challenges of using digital tools in the classroom. While digital technologies are seen as a promising resource for language learning and integration, issues such as digital literacy disparities, the need for appropriate tools, and educator training emerge as key factors that determine the success of these initiatives. Based on their experiences, several policy



recommendations are put forward to enhance the effectiveness of digital integration for immigrant women.

***“Listen to the people on the floor, please”.*** This is a quotation from Educator 1 when asked about recommendations based on their experiences. This educator provided valuable insights into the digitalization of the integration process, drawing from their expertise and experience. Emphasizing the importance of creating a study environment that supports varied learning needs, highlighting that the effectiveness of digital tools depends heavily on their proper use: “For me, it is use it the right way and it will be a good tool. Use it the wrong way and it will not be good.” This reflects a strong belief in the value of digitalization when it is pedagogically aligned with student needs. This educator also recounted challenges faced in setting up digital study spaces. Initially, the first study lab was constructed without following their recommendations, even though they were included in the planning step. After advocating for a more adaptable design, subsequent rooms were adjusted according to their suggestions, creating spaces better suited to immigrant learners with diverse educational backgrounds. This experience underscores the importance of including educators’ input in planning digital spaces to ensure they are functional and inclusive. The primary recommendation emerging from this experience is involving educators in the planning of digital resources, and most important, listening to them as they have firsthand knowledge of classroom challenges. Their input is essential in not only designing digital learning environments that genuinely support immigrant students’ needs, but also adapt the whole learning process with inclusive pedagogies.

***Tailored digital literacy support.*** Another key recommendation is the development of tailored digital literacy support for students with diverse digital backgrounds. The educator suggests that incorporating structured digital training into the IP would more effectively address the varying levels of digital familiarity among students. While digital courses are offered, they often lack the necessary pedagogical approaches to support students facing additional challenges, such as illiteracy or limited prior exposure to ICTs. A more meaningful approach, one that considers these overlapping barriers, would enhance student engagement and help ensure that all learners can fully benefit from digital training.

***Enhance Training Programmes for Educators.*** Over time, the Educator 1 has observed that despite the presence of costly digital equipment in classrooms, some teachers still use it as

if it were analogue, emphasizing the need for ongoing digital literacy development among educators themselves. Continuous training and access to adaptable digital resources are crucial, especially since immigrant women often benefit from gradual learning in a supportive environment.

***The Right Tool.*** Educator 2 observed that digital tools, especially tablets and apps, have significantly supported language learning in the IP. They noted, “We started with iPads... There was a need to learn the language better, and we needed more apps for practice,” indicating that digital integration provides valuable resources for language acquisition. However, for effective use of these tools, students often need further language skills. Notably, some participants are also illiterate in their mother tongue, which poses an additional challenge when using *KI i skolen* or translation apps, as they cannot interpret even simple translations without foundational literacy. While the potential of digital tools is clear, Educator 2 emphasized substantial challenges in digital literacy, particularly among students with limited prior education, reflecting for targeted support to ensure equitable benefits from digital integration, especially given the disparity in educational backgrounds. While the course structure accommodates these students, specific digital aspects, such as apps with accessibility options, could be further tailored to their needs. For instance, students with higher educational backgrounds are more adept at using platforms like Google Classroom and *KI i skolen*, as they have experience with reading and writing prompts. Alternative applications and platforms may be more suitable for students with lower educational levels.

***Community Collaboration.*** Given the demands on educators’ time and expertise to identify and guide students in using appropriate digital tools, community organizations or NGOs could offer valuable additional support for immigrant women’s digital literacy. This might include mentorship programs or workshops that focus on practical digital skills for daily life and employment, extending support beyond the classroom.

The educators’ perspectives reveal that while digital integration in the Norwegian Introduction Program holds significant potential for supporting the socioeconomic inclusion of immigrant women, several challenges remain. These include varying levels of digital literacy, the need for tailored digital tools, and the importance of continuous professional development for educators. Key policy recommendations include enhancing digital literacy training for both students and

teachers, ensuring digital resources are better aligned with students' diverse educational backgrounds, and fostering community collaboration to provide additional support. By addressing these challenges, the integration of digital technologies can be more effectively leveraged to promote inclusion and empower immigrant women in their journey toward full participation in Norwegian society.

## CHAPTER FIVE: ANALYSIS

### 5.1 Introduction

This chapter presents the analysis of the empirical findings discussed in Chapter 4, with a focus on the thematic exploration of the intersectional dynamics of digital inclusion and immigrant women's integration into Norwegian society. The analysis is structured around key themes that emerged from the data: the barriers to digital literacy, the potential of Information and Communication Technologies (ICTs) to empower or exclude, and the role of educators in facilitating digital inclusion.

First, the chapter addresses the intersectional barriers that shape participants' digital literacy, examining how factors such as gender, educational background, and socioeconomic status intersect to create unique challenges. It highlights the nuanced ways in which these factors influence their engagement with digital tools, revealing the complexities of integration beyond just access to technology.

Next, the chapter explores the dual nature of digital tools as both enablers and barriers. While technology has the potential to empower immigrant women, it can also exacerbate existing inequalities, especially for those on the margins of society. This section critically examines how the digital divide within the Introduction Programme reflects broader societal inequalities.

Finally, the analysis focuses on the role of educators in shaping the digital learning experience. Through examining the strategies employed by educators, this section explores how the educational environment can either support or hinder the digital integration of immigrant women, emphasizing the need for tailored, culturally sensitive teaching approaches.

This chapter aims to provide a deeper understanding of the implications of digital literacy for immigrant women's inclusion and empowerment, drawing connections between the empirical findings and the broader theoretical frameworks discussed earlier in the thesis. Through this analysis, I hope to offer practical insights that can inform policy and practice in digital inclusion for immigrant populations.

## **5.2 Thematic Discussion**

The findings that answer those questions presented in the previous chapter are now structured to address three primary themes identified in the analysis: Intersectional Barriers to Digital Literacy, Digital Tools as Empowerment vs. Exclusion, and the Educator's Role and Challenges. The study is guided by four key research questions that examine how digital technologies intersect with the integration experiences of immigrant women, reminding them:

A. What specific digital tools and resources are provided to immigrant women within the Introduction Programme?

B. How do women and educators in the programme access and apply these digital technologies, and what impact does this have on their learning experiences?

C. From the perspectives of women and educators, how does the integration of digital technologies within the Norwegian Introduction Programme influence the social and economic inclusion of immigrant women?

D. From educators' perspectives, how effective are digital integration initiatives in the IP for socioeconomic inclusion, and what policy recommendations emerge from their experiences?

The answers to those questions provided data that were divided in themes. Each theme is a framework for understanding the complex ways in which digital technologies can both facilitate and hinder the integration process for immigrant women, offering valuable insights into how digitalization can shape their socioeconomic inclusion in Norway. Finally, the chapter concludes with a discussion of the long-term implications of the findings, highlighting the broader consequences of digital integration for the future of immigrant women's inclusion in Norwegian society.

### ***5.2.1 Intersectional Barriers to Digital Literacy***

Using an intersectional lens to analyse these empirical findings enables a nuanced understanding that challenges essentialist views of "refugee women" by recognizing that individuals hold multiple, intersecting identities (Crenshaw, 1991). This perspective reveals the complex, multifaceted identities of these women, which are often oversimplified or erased when categorized solely by their refugee status, a socially constructed label (Vigil & Abidi,

2018). Refugee status is not an inherent identity but rather a legal and social construct determined by the circumstances that reflects how societies organize responses to forced migration (Hathaway & Foster, 2014). While it is crucial for facilitating access to support and inclusion programs, it also has the unintended effect of homogenizing individuals with diverse experiences, backgrounds, and skills.

In practice, this construction shapes the opportunities and constraints faced by immigrants in their host countries. For example, in Norway, the category "refugee" is a mechanism for determining eligibility for the Introduction Program and other forms of social support. However, it may also overshadow individual differences and perpetuate policies that do not fully account for diverse needs. Intersectionality highlights that within the refugee individuals, some women hold privileges over others based on factors like educational background, digital literacy, or age, as observed among my participants. Recognizing this diversity is essential to addressing the nuanced barriers these women face as they navigate both opportunities and limitations shaped by their constructed status as "refugees."

**Multiple and fluid identities.** Observing the participants' backgrounds and skills, it becomes evident that their identities are both multiple and fluid, reshaping as they navigate their new status as refugees. In their home countries, they were defined by attributes such as educational achievement, professional roles, and social standing. For instance, Student 1 from Ukraine holds a master's degree in law and was employed in her field. In Norway, she spends her time learning Norwegian, improving her English, and seeking volunteer work to strengthen her language skills, as her legal qualifications are not recognized for practicing law. This shift has reshaped her socioeconomic reality—and with it, her identity.

Similarly, the two Syrian participants also experienced significant changes in their identities. One, with a master's degree and high-level digital literacy, and the other, with a bachelor's degree and a solid career in school administration, now find themselves primarily identified as "refugees" in Norway. Their placement in either advanced education or foundational education classes reflects a categorization based on their educational backgrounds, which broadly shapes the instruction they receive. While this tailored approach addresses their needs, it also underscores how policies categorize individuals, potentially overlooking their full range of skills and experiences.

Participants with advanced degrees and previously high social or professional status face significant challenges to career mobility due to language barriers and the non-recognition of their qualifications. These barriers restrict their opportunities and reshape their social identities in ways that diminish their prior accomplishments. Crenshaw (1991) highlights how language barriers limit access to critical resources and services in her studies, which directly parallels the experiences of refugee women in your study who face challenges accessing digital tools and educational platforms due to limited Norwegian language proficiency.

For example, the findings show, participants with limited literacy, whether in Norwegian or even their native language, struggle to use apps, translation tools, or educational software effectively. This creates a structural disadvantage, as they cannot fully engage with resources designed to promote their integration. In contrast, participants from lower socioeconomic backgrounds are more likely to remain on the margins, relying heavily on additional integration policies for support. This dynamic highlights the intersectional challenges faced by refugee women as they navigate shifting identities and structural barriers in their host country.

**Age dynamics.** Women in the study often rely on younger peers for assistance, reflecting a gendered dynamic where younger women are perceived as more digitally proficient. This interplay between age and gender underscores how these factors intersect with digital literacy, influencing learning behaviours and confidence levels. The digital divide, manifested across various dimensions, highlights the unequal distribution of digital skills based on demographic characteristics such as age, gender, socioeconomic status, ethnicity, and geography (Helsper, 2010; Mossberger et al., 2003, as cited in Scheerder et al., 2017). Age impacts both confidence and familiarity with technology, as younger generations are generally more accustomed to digital tools. For older students, this difference may create a significant barrier to developing digital literacy, especially when compounded by limited prior education.

In the high-educational-level class, younger students frequently assist their older peers, illustrating a supportive dynamic that bridges some of these barriers. Conversely, in the low-educational-level class, students are generally older, and the support dynamic is less evident, with most students directing their concerns primarily to the teacher. Among the participants, Eritrean students attending low-level educational classes face distinct challenges. Eritrea's adult illiteracy rate exceeds 20%, despite ongoing efforts in adult education (Asfaha & Idris,

2023), which likely contributes to additional difficulties in adapting to digital learning. This contrasts sharply with participants from Ukraine, where adult illiteracy is effectively zero, and the focus has shifted to fostering critical digital literacy, particularly in the context of social media (Pasitselska, 2024). Syrian participants fall in between, with an adult female illiteracy rate of less than 3% before the war, a figure notably lower than the male rate (World Bank Group, 2021).

**Geographic barriers.** Geography plays a critical role in shaping digital literacy and access to educational opportunities. Participants from Eritrea face layered challenges, where limited exposure to digital infrastructure in their home country intersects with low literacy levels in their mother tongue. These barriers inhibit their ability to engage effectively with digital tools. For instance, Eritrean participants in the Norwegian Introduction Program often struggle to navigate educational platforms, requiring substantial support to build foundational skills. This reveals a double issue: the absence of digital infrastructure in their home country creates initial barriers, while low literacy further compounds these difficulties in a well-resourced environment like Norway. Bridging the digital divide, therefore, demands more than providing physical infrastructure or basic digital training, it requires culturally, and linguistically responsive interventions tailored to address these intersecting barriers.

These challenges reflect global patterns of inequality as outlined by digital divide theory, which identifies three levels of disparity: access (infrastructure), use (skills), and outcomes (benefits from digital participation). Participants from Eritrea exemplify all three levels of exclusion: they had minimal exposure to PCs and smartphones before migration, lacked the skills to navigate translation apps or educational tools, and consequently failed to fully benefit from the resources intended to support their integration. Low literacy further complicates their use of translation tools like Google Translate, as these require a baseline of linguistic competence to interpret even the translated output. This double exclusion effect, created by intersecting linguistic and technological barriers, amplifies systemic inequalities rooted in broader social and economic disparities.

An intersectional lens highlights how multiple axes of marginalization, such as geography, literacy, gender, and ethnicity, converge to create compounded disadvantages for these women. For Eritrean participants, the overlap of linguistic and digital exclusion demonstrates that



providing infrastructure or basic training alone is insufficient. Without addressing fundamental literacy gaps and cultural contexts, the tools themselves remain underutilized or ineffective. Addressing these issues requires holistic solutions that integrate foundational literacy training, culturally relevant tools, and systemic efforts to reduce global digital inequalities.

**Linguistic Diversity and Digital Exclusion.** Although Eritrean students have varying levels of literacy in Tigrinya, their engagement with digital technology is hindered by the keyboard design of the digital tools used in the Norwegian Introduction Program (IP). Linguistic diversity plays a crucial role in shaping access to digital tools and educational opportunities. While some participants, especially those with English proficiency, have an advantage in navigating digital resources, others face significant barriers due to the limitations of tools that are often designed around Western alphabets. This highlights how digital literacy depends not only on access to technology but also on the compatibility of tools with users' linguistic realities.

For example, Eritrean participants who speak Tigrinya, using the Ge'ez script, face challenges because many digital tools, including standard keyboards, do not support this script. The absence of Ge'ez symbols on Western keyboards exemplifies a linguistic barrier that requires users to adapt to tools designed for European languages. Similarly, Arabic and Ukrainian speakers encounter issues with keyboards lacking Arabic and Cyrillic characters. Students 1, 2, 3, and 4 experience similar obstacles when using tools primarily tailored to Latin characters. These challenges reflect a cultural bias in technological design that favours languages and scripts used by dominant Western cultures.

While these challenges primarily affect non-English-speaking participants, English proficiency provides a significant advantage. For instance, Students 1 and 2 from Ukraine, who are proficient in English, have a smoother experience with digital tools, as many platforms and resources are designed with English-language users in mind. Platforms like Google, social media, and job-searching websites are often easier to navigate for English speakers due to the widespread availability of content and instructions in English, or automatic translation tools. However, this advantage is not universal—many refugee women in the program do not have strong English proficiency, and for them, linguistic diversity barriers are compounded.

Digital tools offer some support, such as virtual keyboards with various alphabets, as mentioned by Educator 2. However, despite their availability, I did not observe their use during fieldwork. This points to a mismatch between the available technology and the participants' needs, highlighting the inadequacy of generic tools in addressing specific linguistic challenges.

From an intersectional perspective, these issues illustrate how language, ethnicity, and digital literacy intersect to create compounded barriers for non-Western language speakers. For example, non-English speakers whose scripts are unsupported by mainstream digital tools face exclusion due to both linguistic and technological factors. Furthermore, postcolonial theory, particularly critiques of postcolonial computing, emphasizes how technological design reflects the dominance of Western norms, marginalizing non-Western cultures (Philip et al., 2010). The absence of Ge'ez, Arabic, or Cyrillic symbols on keyboards is a legacy of colonial biases, forcing non-Western users to adapt to systems designed without consideration for their linguistic and cultural needs.

Bridging these gaps requires more than just providing digital infrastructure or basic training. It demands culturally and linguistically responsive interventions that account for the specific linguistic and educational backgrounds of immigrant women. Tailored tools, training programs, and support systems are essential to ensuring that all participants can fully benefit from digital resources, regardless of their linguistic or cultural background.

The findings under the theme *Intersectional Barriers to Digital Literacy* highlight the complex and multifaceted barriers that refugee women face in accessing and engaging with digital tools, which are shaped by their intersecting identities. From linguistic challenges posed by non-Latin scripts to the influence of age and educational background, these barriers are further exacerbated by the dominance of Western norms in digital tool design. Addressing these challenges requires more than simply providing access to digital resources, it demands culturally and linguistically responsive interventions that account for the diverse needs of refugee women. By integrating intersectional frameworks and postcolonial critiques, this analysis emphasizes the importance of creating inclusive, tailored digital tools and educational strategies that promote equity and empowerment in the integration process.

### ***5.2.2 ICTs: Empowerment vs. Exclusion***

The intersection of ICTs (information and communication technologies) with the lives of immigrant women in the Norwegian IP offers a powerful lens to understand both empowerment and exclusion. While digital tools, such as smartphones and educational platforms, provide significant opportunities for connection, education, and social integration, they also present challenges related to misinformation, mental health, and unequal access. This dual nature of ICTs, both as tools of empowerment and exclusion, shapes the experiences of refugee women, creating a complex dynamic where digital technologies can either facilitate or hinder their integration into Norwegian society.

**Empowering Potential of ICTs.** The efforts to make the Norwegian Society the most digitalized in the world the next years has certain advantages, the ones observed in the findings: Communication and wellbeing, how the ICTs can bridge gaps.

***Communication and wellbeing.*** One of the empowering aspects of digital tools highlighted in the findings is the use of smartphones to facilitate communication between immigrants and their families in their countries of origin, often in warzones or precarious conditions. Educator 1 emphasized that this connection helps alleviate stress and uncertainty, significantly improving participants' mental health. For instance, the findings reveal that maintaining regular contact with loved ones provides a sense of emotional stability and security, which positively affects students' ability to focus and participate in class. This aligns with Freire's (2017) notion of empowerment<sup>9</sup>, where the ability to reclaim agency, through emotional connection and reduced anxiety, enables individuals to more fully engage in learning and societal integration. However, as noted in the findings, this emotional relief is not universally experienced, as geographic and technological disparities restrict access for Student 5, as her family has no internet connection.

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<sup>9</sup> Paulo Freire, while widely associated with the concept of empowerment, does not use the term "empowerment" in *Pedagogy of the Oppressed* (2017). Instead, he discusses related ideas using terms such as "conscientization" (or "critical consciousness") and "liberation." His focus is on enabling individuals to become critically aware of their social, political, and economic conditions and to take transformative action.

***Bridging Gaps.*** Other observed benefits are the enhanced accessibility, technology bridge gaps of communication in general, translation tools like Google Translate address linguistic challenges, enabling immigrant women to participate in classroom discussions and understand course content. By reducing language as a barrier, these tools foster confidence and allow women to engage more effectively in education and social interactions, which are critical aspects of empowerment. Yet, it applies for those with good level of digital literacy and access. Digital literacy can be a path to agency. This was evident in the case of the Syrian student who had recently begun learning Norwegian and was able to communicate effectively thanks to language classes on Duolingo.

The integration of AI tools within the IP, though, *KI i skolen*, aims a secure and creative educational use. Student 3, for instance, brought screenshots of her use of *KI i skolen*, in most of them she uses incorrect sentences on purpose to see if the AI could identify, as a test if she could rely on it. Based on her own observation, she thinks it is better than Google Translator. She critically engaged and tested. What was encouraged by the Educator 1, that mentioned that *KI i skolen* is a tool and people need to learn how to use it well. I also observed her effort in creating an engaging in critical use of those tools.

The perspective from educators also highlights the divides in digital literacy and their awareness of this issue. Educator 1, who is proactive and engaged with the implementation of digital tools, recognized a recurring disconnect between the high-tech resources available in the classroom and their actual use by both teachers and students. For instance, although expensive technologies such as interactive whiteboards were installed, some teachers continued to use them in a traditional, analogue manner, failing to fully utilize the available resources. These findings are analysed through two key lenses: e-development, which critiques the focus on selling ICTs, and the low digital literacy levels among educators.

As Heeks (2002) critiques in his analysis of e-development, the rush to invest in ICTs, driven by economic interests, often ignores the underlying social and economic inequalities that create the digital divide. The author argues that this “digital divide” is perpetuated when interventions focus on technology itself, rather than addressing the root causes of inequality. In this context, educators, acting as the intermediaries of ICTs, are seen as gatekeepers of the digital realm, yet they too must be adequately equipped to manage and sustain the technology they use. As Heeks

notes, the involvement of educators in this space is critical for bridging, or exacerbating, the divide.

The gap in digital literacy among educators further underscores the need for a more comprehensive understanding of digital skills. According to Radovanovic (2023), digital literacy goes beyond basic technical proficiency; it requires a deeper skill set, including the ability to navigate emerging technologies such as artificial intelligence and virtual platforms. This highlights the necessity for educators to continuously develop their skills in order to foster digital inclusion effectively and support their students in the digital age.

**Exclusionary Challenges of ICTs.** Exposure to PCs, iPads, and educational platforms have the potential to provide people skills to navigate technology in their personal and professional lives. Based on my observations, it is plausible that the use of computers might serve as an additional barrier to learning for some students with low literacy and digital literacy level. For instance, the postponement of digital classes with low level education students and the eventual non-use of computers reflects immediate educational priorities. This observation suggests that the integration of technology may not align with the perceived primary needs of the students, potentially creating additional barriers for those already struggling with digital literacy. Not only these aspects, but I identified problem related to health issues, control and invisibilities.

**ICTs and health issues.** The findings also underscore the dual nature of ICTs. Student 2 from Ukraine expressed concern about excessive screen time. While these tools provide vital communication, they also contribute to mental health issues like addiction, anxiety, and diminished concentration. Prolonged screen exposure, as research shows, is linked to conditions such as depression, anxiety, and mood disorders (Devi & Singh, 2023). These effects can reach any of the students. Yet, the case of Student 7, who expressed that found using PCs tiring, reflects mental exhaustion another layer of exclusion.

Another concern of Student 2 was the spread of misinformation, such as propaganda on social media. This highlights the need for critical digital literacy, as reliance on these tools without the skills to evaluate content exacerbates the negative impact of exposure to misinformation and disinformation. The theoretical lens of intersectionality can further explain how

overlapping vulnerabilities, such as displacement, trauma, and limited digital literacy, magnify these challenges for immigrant women (Crenshaw, 1991).

This tension between empowerment and potential harm calls for a more nuanced understanding of ICTs' role in migrant well-being. Bønnhoff (2019) specifically highlights how digital tools, while offering opportunities, can impose the neoliberal ideal of the “digital citizen,” prioritizing individual economic productivity over collective well-being and ignoring structural inequalities. For immigrant women, this results in a double burden: they are expected to navigate digital tools proficiently while grappling with systemic barriers, such as unreliable infrastructure and insufficient training.

These findings emphasize the necessity of integrating critical pedagogy (Freire, 2017) into digital literacy programs. This approach can help immigrant women critically engage with ICTs, equipping them not only with technical skills but also with the ability to question and navigate the socio-political implications of digital tools. By fostering agency and resilience, such programs can counteract the risks of over-reliance, misinformation, and digital fatigue while maximizing the empowering potential of ICTs. At the same time, addressing structural barriers, such as equitable access to infrastructure and tailored support, remains vital to ensuring inclusive digital empowerment. While the two educators are mindful of the challenges, as they expressed in the interviews, the guidelines from the higher hierarchy of the educational system seem disconnected.

***Connection and Control.*** The necessity for connection through ICTs raises critical concerns about data privacy and security. Communication tools like WhatsApp and Facebook Messenger often collect personal data, which users may not fully understand or control. For migrant communities with lower digital literacy, these risks are particularly relevant, as they often have less awareness of digital privacy concerns or limited agency in managing their data. While these tools provide emotional benefits by enabling contact with family members, especially in precarious circumstances, they also expose users to potential exploitation and surveillance. The process of digital inclusion must therefore address these ethical and security risks. Access to digital literacy programs that incorporate privacy and security education is essential for empowering immigrant communities and minimizing harms associated with overuse or misuse of digital tools.

In Norway, Feide, a centralized digital identity system, offers a layer of control and security for navigating educational platforms. By emphasizing privacy and secure access, Feide represents a localized attempt to create a safer digital environment for students. Observations from the field reveal that educators focus on teaching students how to use Feide, reflecting efforts to integrate privacy-conscious tools into education. However, this focus is limited to local systems like Feide and does not extend to the broader landscape of global platforms frequently used by students, such as Google Classroom or Microsoft Office. This disconnect highlights a gap in privacy education, as students remain unprepared to critically navigate the privacy risks and power imbalances embedded in global ICT systems.

Postcolonial computing, which critiques the dominance of Western-designed ICT systems in global contexts, provides a useful lens to analyse this disparity. While Feide reflects an effort to reclaim local agency and data sovereignty, reliance on platforms like Google and Microsoft underscores continued dependence on Western-centric systems. This dependence perpetuates systemic inequalities, as marginalized users must adapt to platforms designed with little consideration for their specific cultural and contextual needs. The dominance of these global systems challenges Feide's ability to fully empower users, as its scope does not extend to the broader digital ecosystem.

From the perspective of Heeks (2002), the transformative potential of ICTs lies in their ability to empower marginalized communities by disseminating critical information and amplifying their voices. Tools like Feide can contribute to this transformation by providing secure access to educational resources, while global platforms expand opportunities for connection and collaboration. However, realizing this potential requires more than access to tools, it demands critical engagement with the power structures embedded in digitalization. For ICTs to truly facilitate equitable development outcomes, digital literacy initiatives must prepare users to navigate both local and global platforms with confidence, awareness, and agency.

To access the digital tools that has the potential to promote empowerment, is necessary to have a digital BankID, a requirement that excludes individuals who lack one, leaving them "digitally invisible" and unable to participate in essential services. This raises important questions about equitable access and digital citizenship, as those excluded from these tools face further marginalization in both online and offline contexts.

***Invisibilities.*** The findings on BankID and digital invisibility highlight how the digital divide framework can elucidate the layers of exclusion faced by marginalized groups. At the access level, structural barriers, such as lack of documentation, prevent some individuals from obtaining BankID. At the usage level, insufficient digital literacy and language barriers further inhibit effective engagement. Finally, at the outcomes level, exclusion from essential services like healthcare and banking perpetuates systemic inequities, underscoring the need for comprehensive policies to bridge these divides and ensure equitable digital inclusion.

The use of Apps and internet to communicate with family in the origin country is not reality of all participants. Geographic and socioeconomic factors significantly exacerbate the digital disadvantage related to age and educational background. For instance, one participant reported limited communication with her family in Eritrea due to unreliable internet access in her home region. The precarity of infrastructure in some regions in the Global South, hinder the potential of global connectivity. Besides that, in the participant previous context, her lack of exposure to digital tools in the past underscores the irrelevance of basic digital skills, such as browsing, formatting text, or using email (Radovanovic, 2023), where both devices and internet access were unavailable.

For the participant, digital inclusion often feels like an imposed expectation, disconnected from her lived experiences and socioeconomic challenges. On multiple occasions, I observed her struggling for nearly an entire class period to log in. At one point, she spent about 30 minutes searching through her bag for a piece of paper with her login details after forgetting her password. On another occasion, though she had her password, she spent a long time staring at the screen, appearing embarrassed to ask for help. This example underscores the need to consider how digital literacy initiatives can inadvertently reinforce inequalities by adopting a one-size-fits-all approach that fails to account for diverse backgrounds and barriers.

**Balancing Empowerment and Exclusion.** The integration of ICTs into the lives of immigrant women in the Norwegian IP reveals a complex interplay between empowerment and exclusion. On one hand, ICTs such as smartphones, digital platforms, and AI tools provide significant opportunities for connection, education, and social integration, which are vital to the well-being and empowerment of immigrant women. These tools facilitate communication with family members, support language learning, and provide access to essential services, thereby



improving mental health, fostering a sense of security, and enabling active participation in Norwegian society. For instance, the use of platforms like Google Translate and Duolingo has demonstrated how digital tools can overcome language barriers, promoting confidence, agency, and a sense of belonging in both social and educational contexts.

On the other hand, these same technologies also present significant challenges that can exacerbate digital exclusion, even for participants that can take advantages of ICTs. Issues such as screen time, mental health concerns, misinformation, and data privacy risks complicate the idealized empowerment potential of ICTs. Moreover, the lack of digital literacy and unequal access to key resources, such as BankID, Feide, and Wi-Fi connectivity, can result in the digital invisibility of certain participants, further entrenching inequalities. These challenges are not just technical but deeply structural, reflecting broader socioeconomic, geographic, and cultural barriers. As a result, immigrant women can experience double exclusion, from both the digital landscape and essential aspects of social and economic participation.

This dual nature of ICTs highlights the need for a nuanced approach to digital inclusion, one that recognizes both the potential and the limitations of technology. The findings suggest that while ICTs can facilitate empowerment, they can also reinforce existing inequalities if not accompanied by critical digital literacy programs, equitable access to infrastructure, and comprehensive support systems. The gap between empowerment and exclusion calls for a holistic, intersectional approach that addresses the multiple layers of marginalization faced by immigrant women, ensuring that they are not only technologically connected but also digitally literate, secure, and able to critically engage with the tools available to them.

### ***5.2.3 Educator's Role and Challenges***

The digital literacy curriculum of the IP shows both promise and critical gaps in addressing the diverse needs of its participants. While the program provides access to tools such as iPads and PCs, along with platforms like Google Classroom to facilitate task assignments and content sharing, there is limited evidence that these resources are effectively aligned with the varied skill levels and prior experiences of the students. Educator 2 noted the importance of introducing PCs and laptops to students with little or no previous exposure to such technologies, particularly those with low levels of education, as these tools help develop foundational skills like typing and navigating software for practical use. However, as Educator 1 highlighted,

merely providing digital tools does not unlock their full transformative potential, particularly when educators themselves lack sufficient training to bridge the gap between digitalization and effective pedagogy.

Systemic inequalities further hinder the program's success. Resource allocation appears uneven, as seen in the high costs of advanced technology without parallel investment in educator training, which restricts the program's ability to meet its pedagogical goals. For instance, Educator 1 pointed out that the initial study lab constructed in 2009 fell short of addressing students' learning needs, illustrating a persistent misalignment between policy implementation and practical outcomes. These challenges are exacerbated for immigrant women, who face unique barriers such as limited digital exposure and low literacy in their mother tongues. The one-size-fits-all approach of the current curriculum does not account for these intersectional challenges, risking further marginalization of these women by failing to adequately prepare them for digitally integrated workplaces or civic engagement.

To ensure equitable outcomes, the program must prioritize tailored training for both educators and students, alongside regular evaluations of how digital tools and teaching methods address the specific needs of participants, particularly those at the intersection of gender, migration, and socioeconomic disadvantage. Without such reforms, the program risks perpetuating systemic inequalities instead of dismantling them.

Digital literacy is an evolving concept, shaped by advancing technologies and the growing need for these skills. Until 2021 more than one-third of the world lacks internet access (Radovanovic, 2023, s. 1), whereas many teachers with access to the best infrastructures (hardware and fast internet), still not fully utilizing the technologies available to them, this findings shows that digital literacy cannot be understood in isolation, it must be contextualized. The specific needs of individuals vary depending on their position in the social hierarchy, whether at the top, middle, or bottom. For true digital inclusion to be achieved, these varying needs must be addressed in a way that aligns with the diverse realities of each group.

### **5.3 Long-term Implications**

The digital literacy curriculum of the IP reveals both promise and significant gaps in addressing both diverse needs of its participants integration and Norwegian goal in digitalization. The

program offers infrastructures, access to tools like iPads, PCs, internet, and platforms such as Google Classroom, *KI i skolen*, which facilitate task assignments, content sharing, and communication. However, the findings indicate that these resources are not fully aligned with the varied skill levels and prior experiences of the students and not all educators are properly trained. This mismatch reflects broader systemic inequalities and the challenge of adapting digital literacy education to the diverse realities, both for immigrant women and educators.

Educator 2 stressed the importance of introducing PCs and laptops to students with limited prior exposure to technology, particularly those with low educational backgrounds. The use of these tools helps develop essential foundational skills like typing and navigating software. However, as Educator 1 pointed out, simply providing digital tools does not automatically unlock their full transformative potential. Without adequate educator training, these tools cannot be effectively integrated into teaching practices, leaving a significant gap between digitalization and effective pedagogy. This disconnect aligns with digital divide theory, which highlights how educators' digital literacy and training directly affect the efficacy of digital tools in achieving inclusive education (Scheerder et al., 2017). The educators' role is central in ensuring that these tools are not just used but used to empower students.

Moreover, resource allocation within the IP program reveals unevenness. Educator 1 pointed out that the study lab, constructed in 2009, was not adequately designed to meet the students' learning needs, which signals a persistent misalignment between policy implementation and practical outcomes. This issue mirrors intersectional challenges observed in the field, where immigrant women with low digital literacy and limited exposure to technology face unique barriers that are not sufficiently addressed by a one-size-fits-all approach. According to Crenshaw (1991), these intersectional barriers must be considered, as gender, migration status, and socioeconomic background compound the difficulties faced by immigrant women in digital integration. The current curriculum fails to adequately account for these nuances, risking further marginalization of these women.

The experiences of the participants underscore significant gaps in digital literacy that may have profound implications for their long-term integration goals, such as employment, socioeconomic mobility, and democratic participation. One participant, who has been in Norway for thirteen years but only recently gained access to education, still struggles with using

a PC, while another, who has lived in Norway for two years, has limited literacy in her mother tongue. These challenges suggest that their limited digital skills could marginalize them further in a society increasingly dependent on technology. Without intervention, these individuals may find themselves restricted to low-paying jobs that do not require the use of digital tools, perpetuating economic inequality and limiting their social mobility. Additionally, in a democracy where civic engagement, access to information, and participation in public discourse often rely on digital platforms, such circumstances could effectively push them to the margins of democratic life. Bridging these digital divides is therefore not only a matter of economic inclusion but also a vital step toward ensuring equal participation in society.

Critical pedagogy calls for a curriculum that empowers learners by addressing both immediate skills gaps and the systemic inequities underpinning those gaps. Freire proposes generative themes to refer to topics, issues, or ideas that emerge organically from the lived experience, realities and concerns of learners (Freire, 2017, s. 70). By centring participants' lived experiences, promoting collaborative and reflexive learning, and advocating for cultural relevance, critical pedagogy transforms the curriculum into a tool for meaningful integration. This approach ensures that digital literacy training is not only practical but also empowering, enabling immigrant women to navigate and reshape the digital landscapes they encounter.

The critical pedagogy as a framework emphasizes the importance of education as a tool for empowerment rather than simple instruction. It argues for addressing systemic barriers (e.g., language, literacy, cultural relevance) through transformative education. Applying also this lens, digital literacy training should move beyond technical skills to incorporate critical thinking and contextual understanding, enabling participants to use digital tools meaningfully.

## CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

### 6.1 Concluding remarks

The assumption that individuals from higher socioeconomic contexts have more access to digital resources, education, and job opportunities, enabling them to use digital technology in their advantage, stands in contrast to those from lower socioeconomic backgrounds. The latter group often faces significant barriers to accessing and using digital technology, which can perpetuate or exacerbate existing socioeconomic inequalities to their invisibility. To consider digital divide is intrinsic to address existence inequalities. The proliferation of ICTs is poised to widen the disparities between those who have access and those who do not. This division and the subsequent divergence are evident across various geographies, demographics, including class, age, and gender. Among immigrant women, there are some that encounter distinct hurdles when accessing educational opportunities and fully participating in society. Understanding these dynamics is essential for assessing whether the digital tools and resources provided to immigrant women in the IP are truly usable, accessible, and aligned with their integration needs.

As emphasized, digitalization is crucial in a society like Norway, where digital tools permeate nearly every aspect of life, including education, work, income generation, and social interactions. This digital transformation reshaped and is still reshaping social structures, as daily activities and interactions become increasingly dependent on digital technologies, fundamentally altering how people connect, learn, and work. I argue that embracing digitalization provides significant social and economic advantages, contributing to the integration of individuals into society and the democratic sphere. However, digitalization is not solely about improving the quality of telecommunications networks. The focus must also be on optimizing their usage to ensure accessibility and meet collective and individuals' integration needs. At the same time, it is crucial to remain critical and aware of the potential negative consequences of digital technologies. To ensure that ICTs are used in people's service, rather than allowing people to serve the interests of large tech corporations. This means fostering digital environments that prioritize privacy, fairness, and equity, and empower individuals rather than subject them to the surveillance and control of powerful tech giants.

In navigating the complexities of digitalization, in the context presented in this thesis, educators stand as the real bridges, guiding and connecting individuals, across the divide, integrating them to fully participate in and benefit from an increasingly digital society.

## **6.2 Recommendations**

The recommendations presented here stem from observations and feedback gathered during an inquiry into educators' experiences with technology in the classroom. While some educators are actively engaging in self-directed training on online platforms and adopting new tools, others have chosen not to adhere to these practices, citing challenges such as a lack of institutional support, mismatched tools, or limited relevance to their teaching contexts. These insights highlight the need for targeted strategies to address these barriers and ensure that all educators are empowered to integrate digital tools effectively into their pedagogy.

### ***6.2.1 Tailored Support and Tools***

Devices and applications should be carefully selected to match students' literacy levels and learning needs. For example, iPads may be more appropriate for low-literacy participants due to their intuitive interface, whereas laptops might suit higher-literacy learners requiring advanced functionality. Educators must be directly involved in the selection process to ensure that chosen technologies align with specific classroom activities and learning goals. Additionally, accessible platforms and applications must be prioritized to support diverse student needs, including those with disabilities or limited digital skills.

### ***6.2.2 Comprehensive Training for Educators***

Comprehensive professional development should equip teachers with both advanced digital skills and a nuanced understanding of their students' unique needs. Training should include practical strategies for integrating digital tools into lessons, such as:

- Interactive workshops focusing on the use of specific technologies.
- Peer-led mentorship programs to share best practices.
- Access to ongoing support resources, such as help desks or online training modules.

- Moreover, training should highlight how to adapt digital tools to address diverse learning challenges, ensuring these resources bridge gaps between infrastructure and meaningful classroom application.

### ***6.2.3 Localized Policy Design***

Education policies should be co-designed with input from educators to align administrative objectives with classroom realities. Mechanisms such as teacher surveys, focus groups, and advisory panels should be established to gather continuous feedback. Policymakers must commit to reviewing and revising technology policies based on this input to ensure ongoing relevance and practicality. Furthermore, policies should include a framework for monitoring the effectiveness of implemented technologies, using measurable outcomes like student engagement and academic performance.

### ***6.2.4 Addressing Structural Inequalities***

To promote equitable digital inclusion, systemic barriers such as internet access, device affordability, and data privacy concerns must be addressed. Governments, educational institutions, and technology providers should collaborate to:

- Expand affordable broadband access, especially in underserved areas.
- Subsidize digital devices for low-income families to reduce financial barriers.
- Establish clear data sovereignty guidelines to protect student and educator information while promoting accessibility. Case studies of successful collaborations (e.g., public-private partnerships) should be used to guide these efforts. Additionally, policies should include provisions for periodic assessments of digital equity to identify and address gaps proactively.

## **6.3 Limitations of the Study**

This study has several limitations that are important to acknowledge. Firstly, the geographic scope was limited to Agder County in Norway, specifically focusing on immigrant women in one school within the Introduction Programme. While this allowed for an in-depth analysis of the experiences in a specific region, it may not fully capture the diversity of experiences in other regions of Norway or reflect variations between urban and rural areas. This limitation was primarily due to time and resource constraints, rather than a deliberate choice.

Although the study considers the concept of intersectionality, the small sample size may not fully encompass the broad spectrum of cultural, socioeconomic, and educational backgrounds among immigrant women seeking asylum. As a result, the findings may not be entirely generalizable to all immigrant groups. The limited duration of the fieldwork, which was less than six months, also restricted the depth of long-term observation. A longer period of engagement might have revealed more nuanced insights into the evolution of digital literacy, integration, and adaptation over time.

Another limitation relates to language differences, as interpreters were required for some participants. While this facilitated communication, it may have introduced minor inaccuracies or nuances in the participants' responses. Additionally, the need for translation, while helping establish rapport with respondents, may have impacted the depth of discussions.

Lastly, this study focuses solely on Norway's Introduction Programme and its digitalization efforts. It does not include cross-cultural comparisons with similar programs in other countries, which could have provided a broader context and further perspectives. This presents an opportunity for future research to examine how Norway's approach compares with those of other nations.



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# APPENDICES

## Appendix 1

### Interview Guide

#### Digital Empowerment of Immigrant Women in the Agder Region

#### Sample: Participant Immigrant Women, between 18-70 years-old

#### Introduction

##### Welcome and Introduction:

Introduce myself and the purpose of the interview. Ensure the participant's understanding and consent for the interview. Explain about privacy and confidentiality, and the participants' rights to decline to participate in the research anytime.

##### 1: Participant Background

##### Demographic Information:

Gather basic demographic details (age, country of origin, technological cultural background).

Explore the participant's journey to Norway and their experiences in the Agder region.

##### Educational Background:

Inquire about the participant's educational background.

Explore any challenges or opportunities related to education in Norway.

##### 2: Digital Literacy and Technology Adoption

##### Digital Literacy Levels:

Assess the participant's comfort and proficiency with digital technologies.

Explore their experiences with using digital tools before and after joining the introduction program.

### **Specific Digital Tools and Resources:**

Discuss the digital tools provided by the introduction program.

Explore the usability, accessibility, and alignment of these tools with the integration needs of the participants.

### **Challenges and Barriers:**

Identify any challenges or barriers faced in adopting digital technologies.

Explore if there are differences among participants with varying levels of digital literacy.

## **3: Socioeconomic Impact**

### **Impact on Socioeconomic Inclusion:**

Discuss the participant's perception of how digitalization has influenced their socioeconomic inclusion.

Explore any improvements or challenges in employment, social engagement, and community participation.

## **4: Attitudes and Perceptions**

### **Attitudes Toward Digital Technologies:**

Explore the participant's attitudes and feelings regarding the incorporation of digital technologies in the introduction program.

### **Suggestions for Improvement:**

Ask for suggestions on how the program can better support the digital empowerment of immigrant women.

## **5: Policy and Program Evaluation**

**Policy and Program Effectiveness:**

Inquire about the participant's viewpoint on the effectiveness of digital integration initiatives.

Explore any policy recommendations they may have.

**Final Thoughts:**

Allow the participant to share any additional thoughts or experiences not covered in the interview.

**Closing:****Thank You and Contact Information:**

Express gratitude for their participation.

Provide contact information for follow-up questions or additional clarification.



## **Appendix 2**

### **Interview Guide**

#### **Digital Empowerment of Immigrant Women in the Agder Region**

##### **Sample: Educator of digitalization/Introduction Programme**

### **Introduction**

#### **Welcome and Introduction**

Introduce myself and the purpose of the interview.

Ensure the participant's understanding and consent for the interview. Explain about privacy and confidentiality, and the participants' rights to decline to participate in the research anytime.

#### **1. Participant Background**

##### **Demographic Information:**

Gather basic demographic details (age, country of origin, technological cultural background).

Explore the participant's experience in the field of education and digitalization.

##### **Professional Background:**

Discuss the participant's journey in the field of education and digitalization.

Explore experiences in integrating digital tools in educational settings.

##### **Challenges and Opportunities:**

Inquire about any challenges or opportunities encountered in promoting digitalization in education.

#### **2. Digital Literacy and Technology Adoption:**

##### **Educator's Digital Literacy:**

Assess the educator's comfort and proficiency with digital technologies.

Discuss experiences with using digital tools in teaching.

### **Teaching Digital Literacy:**

Explore the strategies employed to enhance students' digital literacy.

Discuss the impact of digital literacy initiatives on students.

### **Challenges in Technology Integration:**

Identify any challenges faced in integrating technology into the educational curriculum.

## **3. Program and Resource Evaluation:**

### **Digitalization Initiatives:**

Discuss the digital tools and resources employed in the educational programs.

Evaluate the usability, accessibility, and alignment of these tools with educational goals.

### **Educator's Training and Support:**

Inquire about training and support provided to educators for digitalization.

Discuss any observed impact on teaching effectiveness.

## **4. Impact on Students and Educational Outcomes:**

### **Academic Performance:**

Explore the impact of digitalization on students' performance.

Discuss any improvements or challenges observed in student outcomes.

### **Socioeconomic Empowerment:**

Explore any changes in students' readiness for the digital job market.

## **5. Future Directions and Recommendations:**

**Future Trends:**

Discuss the educator's perspective on upcoming trends in digital education.

Explore any emerging technologies that could enhance the learning experience.

**Recommendations:**

Inquire about recommendations for policymakers and educational institutions to enhance digitalization efforts.

Discuss potential improvements in professional development programs for educators.

Closing:

**Thank You and Contact Information:**

Express gratitude for their time and insights.

Provide contact information for any follow-up questions or additional information.

## Appendix 3

# **Are you interested in taking part in the research project “Empowering Immigrant Women in Agder: Exploring the Role of Digitalization in Education”?**

### Purpose of the project

You are invited to participate in a research project, as part of my master’s thesis, where the main purpose is to understand how the use of digital technology affects the empowerment of immigrant women in Norway. It explores how the digital environment can either include or exclude certain groups, contributing to societal inequalities. By looking at digital literacy, technology use, and the broader socioeconomic context, the research seeks insights to develop policies that foster the inclusive and fair integration of immigrant women into the digital age. The focus is specifically on the Agder region and its Introduction Program.

### **Which institution is responsible for the research project?**

University of Agder is responsible for the project (data controller).

### **Why are you being asked to participate?**

The research project focuses on educators participating in the Introduction Program within the Agder region of Norway, specifically those involved in the digitalization course for immigrant women. The primary target demographic comprises active participants in the program, specifically immigrant women aged 18 to 70. Understanding diverse perspectives within the program is essential, making educators of these participants pivotal contributors to gaining comprehensive insights.

The recruitment process involves reaching out to potential participants through program such as educators overseeing the Introduction Program. The inquiry is directed at those who meet the specified criteria and are willing to share their experiences with digitalization, technology adoption, and the impact on their socioeconomic inclusion.

Contact details may be obtained through the program administrators or coordinators, respecting privacy regulations and obtaining necessary permissions. In cases where contact details are provided by a third party, explicit approval or permission is sought from the relevant authorities, and the participants are informed about the purpose of the research and their voluntary participation. If an information letter is sent on behalf of another entity, the letter includes details about the research, its goals, and the voluntary nature of participation. Clear information about privacy and confidentiality is provided to ensure transparency and ethical conduct throughout the recruitment process.

What does participation involve for you?

If you choose to take part in this research project, your involvement will primarily consist of participating in an in-depth interview. The interview will be conducted either in person or through a virtual platform, depending on your preference and convenience. The interview is expected to last approximately 60 minutes. Perhaps, we need to book follow up interviews.

During the interview, we will discuss immigrant women's experiences with digitalization, the Introduction Program, and the impact of technology on their socioeconomic inclusion. The topics will include digital literacy levels, the specific digital tools provided in the program, challenges faced, and your perceptions regarding the incorporation of digital technologies. The goal is to gain valuable insights into how digitalization influences the empowerment of immigrant women in the Agder region.

The interview will be recorded for accuracy and reference purposes. This recording will be kept confidential and will only be accessible to the research team. Additionally, notes may be taken during the interview to supplement the recorded information.

### **Participation is voluntary**

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

### **Your personal privacy – how we will store and use your personal data**

We will only use your personal data for the purpose(s) specified here and we will process your personal data in accordance with data protection legislation (the GDPR).

### **What will happen to your personal data at the end of the research project?**

The planned end date of the project is December 2024. I will retain the interview recordings and associated transcripts for that period following the conclusion of the data collection process. After that period, I will take the necessary steps to securely delete all personal data, including voice recordings and transcripts. This deletion will be conducted to ensure that participants' data is no longer accessible.

The collected data will be storage for verification and follow-up. The personal data will be stored in a secure recording app with encrypted security provided by the University of Agder (UiA) for recording interviews. This app will ensure that the voice recordings are protected against unauthorized access.

Only I will have access to the recorded interviews. These recordings will not be shared with anyone else, ensuring that the data remains confidential. The voice recordings will be transcribed to text for analysis. This process will also be conducted with strict adherence to data protection measures.

### **Your rights**

As long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Norwegian Data Protection Authority regarding the processing of your personal data

### **What gives us the right to process your personal data?**

We will process your personal data based on your consent.

Based on an agreement with University of Agder, The Data Protection Services of Sikt – Norwegian Agency for Shared Services in Education and Research has assessed that the processing of personal data in this project meets requirements in data protection legislation.

### **Where can I find out more?**

If you have questions about the project, or want to exercise your rights, contact:

- University of Agder via Juliana Koury Gaiosio, +4790704520, [julianak@uia.no](mailto:julianak@uia.no), and Supervisor Professor Hanne Haaland, +47 38 14 23 62, [hanne.haaland@uia.no](mailto:hanne.haaland@uia.no)
- Our Data Protection Officer: Trond Hauso [personvernombud@uia.no](mailto:personvernombud@uia.no) If you have questions about how data protection has been assessed in this project by Sikt, contact:
- email: ([personvertjenester@sikt.no](mailto:personvertjenester@sikt.no)) or by telephone: +47 73 98 40 40.

Yours sincerely,

Project Leader

Juliana Koury Gaiosio

(Researcher/supervisor)

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## **Consent form**

I have received and understood information about the project “Empowering Immigrant Women in Agder: Exploring the Role of Digitalization in Education” and have been given the opportunity to ask questions. I give consent:

- to participate in interview
- for information about me to be published in a way that I can be recognised

- for my personal data to be stored after the end of the project for verification purposes and follow up research.

I give consent for my personal data to be processed until the end of the project.

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(Signed by participant, date)



## Appendix 4

# **Er du interessert i å delta i forskningsprosjektet "Styrking av innvandrerkvinner i Agder: Utforskning av digitaliseringens rolle i utdanning"?**

### **Formålet med prosjektet**

Du er invitert til å delta i et forskningsprosjekt som en del av min masteroppgave. Hovedmålet er å forstå hvordan bruk av digital teknologi påvirker styrkingen av innvandrerkvinner i Norge. Prosjektet utforsker hvordan det digitale miljøet enten kan inkludere eller ekskludere visse grupper, og dermed bidra til samfunnsmessige ulikheter. Ved å se på digital kompetanse, teknologibruk og den bredere samfunnsøkonomiske konteksten, søker forskningen innsikt for å utvikle retningslinjer som fremmer inkluderende og rettferdig integrering av innvandrerkvinner i den digitale tidsalderen. Fokuset er spesielt rettet mot Agder-regionen og dens introduksjonsprogram.

### **Hvilken institusjon er ansvarlig for forskningsprosjektet?**

Universitetet i Agder er ansvarlig for prosjektet (behandlingsansvarlig).

### **Hvorfor blir du bedt om å delta?**

Forskningsprosjektet fokuserer på pedagoger som deltar i introduksjonsprogrammet innen Agder-regionen i Norge, spesielt de som er involvert i digitaliseringskurset for innvandrerkvinner. Den primære målgruppen omfatter aktive deltakere i programmet, spesielt innvandrerkvinner i alderen 18 til 70 år. Forståelse av ulike perspektiver innen programmet er avgjørende, og pedagoger for disse deltakerne er viktige bidragsytere for å få omfattende innsikt.

Rekrutteringsprosessen innebærer å nå ut til potensielle deltakere gjennom program som pedagoger som har ansvar for introduksjonsprogrammet. Henvendelsen er rettet mot de som oppfyller de spesifikke kriteriene og er villige til å dele sine erfaringer med digitalisering, teknologibruk og påvirkningen på deres samfunnsmessige inkludering.

Kontaktinformasjon kan innhentes gjennom programadministratorer eller koordinatorene, med respekt for personvernregler og innhenting av nødvendige tillatelser. I tilfeller der kontaktinformasjon gis av en tredjepart, søkes det eksplisitt godkjenning eller tillatelse fra relevante myndigheter, og deltakerne informeres om formålet med forskningen og deres frivillige deltakelse. Hvis et informasjonsbrev sendes på vegne av en annen enhet, inkluderer brevet detaljer om forskningen, dens mål og den frivillige naturen av deltakelsen. Tydelig informasjon om personvern og konfidensialitet gis for å sikre gjennomsiktighet og etisk atferd gjennom hele rekrutteringsprosessen.

### **Hva innebærer deltakelse for deg?**

Hvis du velger å delta i dette forskningsprosjektet, vil din involvering primært bestå av å delta i et grundig intervju. Intervjuet vil bli gjennomført enten personlig eller via en virtuell plattform, avhengig av dine preferanser og bekvemmelighet. Intervjuet forventes å vare omtrent 60 minutter. Det kan være nødvendig å avtale oppfølgingsintervjuer.

Under intervjuet vil vi diskutere innvandrerkvinner sine erfaringer med digitalisering, introduksjonsprogrammet og teknologiens innvirkning på deres samfunnsmessige inkludering. Temaene vil inkludere nivået av digital kompetanse, de spesifikke digitale verktøyene som tilbys i programmet, utfordringer møtt, og dine oppfatninger om inkorporeringen av digitale teknologier. Målet er å få verdifulle innsikter i hvordan digitalisering påvirker styrkingen av innvandrerkvinner i Agder-regionen.

Intervjuet vil bli registrert for nøyaktighets- og referanseformål. Denne opptakene vil bli holdt konfidensielle og vil bare være tilgjengelige for forskningsteamet. I tillegg kan det tas notater under intervjuet for å supplere den registrerte informasjonen.

### **Deltakelse er frivillig**

Deltakelse i prosjektet er frivillig. Hvis du velger å delta, kan du til enhver tid trekke tilbake samtykket uten å gi noen grunn. All informasjon om deg vil da gjøres anonym. Det vil ikke være negative konsekvenser for deg hvis du velger ikke å delta eller senere bestemmer deg for å trekke deg.

### **Din personvern - hvordan vi vil lagre og bruke dine personopplysninger**

Vi vil bare bruke dine personopplysninger til de spesifikke formålene som er angitt her, og vi vil behandle dine personopplysninger i samsvar med personvernlovgivningen (GDPR).

### **Hva vil skje med dine personopplysninger ved slutten av forskningsprosjektet?**

Planlagt sluttdato for prosjektet er desember 2024. Jeg vil beholde intervjuopptakene og tilhørende transkripsjoner for den perioden etter at datainnsamlingsprosessen er avsluttet. Etter denne perioden vil jeg ta nødvendige skritt for å slette all personlig informasjon, inkludert stemmeopptak og transkripsjoner, på en sikker måte. Denne slettingen vil bli utført for å sikre at deltakernes data ikke lenger er tilgjengelige.

De innsamlede dataene vil bli lagret for verifikasjon og oppfølging. Personopplysningene vil bli lagret i en sikker opptaksapp med kryptert sikkerhet levert av Universitetet i Agder (UiA) for opptak av intervjuer. Denne appen vil sikre at stemmeopptakene beskyttes mot uautorisert tilgang. Bare jeg vil ha tilgang til de registrerte intervjuene. Disse opptakene vil ikke deles med noen andre, og sikrer at dataene forblir konfidensielle. Stemmeopptakene vil bli transkribert til tekst for analyse. Denne prosessen vil også bli utført med streng overholdelse av personvernregler.

### **Dine rettigheter**

Så lenge du kan identifiseres i de innsamlede dataene, har du rett til å:

- få tilgang til de personopplysningene som behandles om deg
- be om at dine personopplysninger blir slettet
- be om at feilaktige personopplysninger om deg blir korrigert/rettet
- motta en kopi av dine personopplysninger (dataportabilitet), og
- sende inn en klage til Datatilsynet angående behandlingen av dine personopplysninger

### **Hva gir oss rett til å behandle dine personopplysninger?**

Vi vil behandle dine personopplysninger basert på ditt samtykke.

Basert på en avtale med Universitetet i Agder har Personverntjenestene til Sikt - Norsk senter for forskningsdata vurdert at behandlingen av personopplysninger i dette prosjektet oppfyller kravene i personvernlovgivningen.

### **Hvor kan jeg få mer informasjon?**

Hvis du har spørsmål om prosjektet eller ønsker å utøve dine rettigheter, kan du kontakte:

- Universitetet i Agder via Juliana Koury Gaioso, +4790704520, julianak@uia.no, og veileder Professor Hanne Haaland, +47 38 14 23 62, hanne.haaland@uia.no

- Vår personvernombud: Trond Hauso, personvernombud@uia.no

Hvis du har spørsmål om hvordan personvern har blitt vurdert i dette prosjektet av Sikt, kan du kontakte:

- e-post: personverntjenester@sikt.no eller telefon: +47 73 98 40 40.

Med vennlig hilsen,

Prosjektleder Juliana Koury Gaioso

(Forsker/veileder)

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### **Samtykkeskjema**

Jeg har mottatt og forstått informasjonen om prosjektet "Styrking av innvandrerkvinner i Agder: Utforskning av digitaliseringens rolle i utdanning" og har fått muligheten til å stille spørsmål. Jeg gir samtykke til:

- å delta i intervju
- at informasjon om meg publiseres på en måte som gjør at jeg kan gjenkjennes
- at mine personopplysninger lagres etter prosjektslutt for verifikasjonsformål og oppfølgingsforskning.

Jeg gir samtykke til at mine personopplysninger behandles til prosjektslutt.

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(Underskrevet av deltaker, dato)