Usage of digital technologies by the Dutch government to promote migrant integration.

The case of mobile language learning apps

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Abstract

This research is a qualitative study on the use of mobile language learning applications for the integration of migrants by the local and regional government of the Netherlands. Learning the language of the host country is a necessity for migrants to integrate into the society and many European states have made specific language skills a requirement to enter their country. Mobile language learning applications may represent an opportunity here. There are multiple organisations that have highlighted the use of mobile learning as a trend in training and education. The usage of digital technologies is not mentioned in the New Integration Act. It is therefore important to investigate the use of mobile language learning applications by the government of the Netherlands. To do so, key informant interviews are conducted, with respondents that have been selected via convenience sampling. A critical analysis of the interviews is employed. The results of this study have indicated that mobile language learning applications are being used, but only to a limited extend and multiple disadvantages and barriers have been identified.

Table of contents

1.0 Introduction

Language learning is important for the economic integration of migrants. The skills migrants have would become useless if they cannot communicate in the host country's language (De Paola & Brunello, 2016). This means that the knowledge of the host country's language can improve integration in the labour market, as Chiswick and Miller (2014) conclude in their study that the earnings of male immigrants can increase by between 5 and 35 percent if their language is proficient. Furthermore, language plays an important role in the sociocultural integration of migrants (Nakhaie, 2020). A study on the integration of newcomers in Canada suggests that the proficiency in the language of the host country is one of the main forces that enhances the ability of migrants to fit in (Nakhaie, 2020). This increases knowledge about the host country's cultural milieu. Because migrants gain proficiency in the host country's language over time, they tend to create a new identity more attached to the one of the host country and to some extent detach themselves from their own ethnic identity (Nakhaie, 2020). Thus, helping refugees learn the language of the host country enables their integration into society and the labour market (Castaño-Muñoz et al., 2018). Language learning is also important for the political integration of migrants. To bring the migrant's voices into the public discourse, and with that into the public sphere, a common language is necessary (Johnston & Audunson, 2019).

Many European states have made specific language skills a requirement to enter their country. These language skills are defined according to the Common European Framework of References for Languages (CEFR) (Wodak & Boukala, 2015). Thus, it is no surprise that France and Germany are increasingly focusing on the language training of immigrants over time (Arendt et al., 2021). However, Arendt et al argue that the Netherlands seems to do the exact opposite and instead increasingly focuses on labour market participation and encouraging job search early on. Less focus is being put on language training (Arendt et al., 2021). Therefore, this study focuses on the Netherlands and addresses the integration of migrants in the Netherlands as a policy problem.

The pathway to integration is specified under the Integration Policy of the Netherlands. According to the (Governance of Migrant Integration in the Netherlands, 2023), the integration system before the New Integration Act did not encourage individuals enough to achieve the highest language level that was possible for them. Therefore, the New Integration Act which includes learning the language and working or volunteering should improve the knowledge

acquirement of the Dutch language (Governance of Migrant Integration in the Netherlands, 2023).

Ngan et.al (2016) argue that technologies can generate informal conversations between people and facilitate a smooth integration. More specifically, digital technologies can support language learning and making new friends and in doing so also support the integration of migrants (Ngan et.al, 2016). This study will focus on the use of digital technologies in the integration policy by the government of the Netherlands with a specific focus on mobile language learning applications. Mobile language learning applications are defined as a digital technology that provides people with the opportunity to autonomously learn a new language (Rosell-Aguilar, 2016). Moreover, learners are not required to be in a specific geographical location, meaning that the learning can also take place outside a classroom (Shortt et al., 2021).

1.1 Research Question

Nationally, the biggest groups of immigrants that came to the Netherlands were from Poland, India and refugees from Syria (ArbeidsmarktInZicht - Aantal Mensen in Overijssel Stijgt in Eerste Helft 2019, n.d.). According to the Dutch Central Bureau for Statistics (CBS), the number of immigrants decreased during Covid, but in 2021 after the pandemic was over it increased again (Stoeldraijer et.al, 2022). In 2022 the population of the Netherlands increased by 227 thousand people, the main reason for this is migration, including people who came to the Netherlands because of the war in the Ukraine (Stoeldraijer et al., 2022). The Dutch government expected to receive 48200 applications for asylum in 2022, which was 6700 more than the expectation they had set out 6 months before (Ministerie van Justitie en Veiligheid, 2022).

Because there are so many migrants that need to integrate into the Dutch society and learn the Dutch language, it is relevant to further explore the use of mobile language learning apps by the local and regional government of the Netherlands. Especially since a variety of organisations have highlighted the use of mobile learning as a trend in training and education (Kukulska-Hulme, 2019). Thus, the proposed asks:

"How does the local and regional government of the Netherlands use mobile language learning applications to encourage migrant integration? What are the impacts these tools have on integration?". This main research question entails the following sub-questions (SQ 1-3). SQ 1 asks "What mobile language learning apps are available through the local and regional

government of the Netherlands?". SQ 2 asks "What advantages and disadvantages do local and regional governments in the Netherlands perceive from the use of mobile language learning apps?". SQ 3 asks "How does the use of digital technologies by the local and regional government of the Netherlands impact the integration of migrants?".

1.2 Why this research question is relevant

Over the past years, an increasing number of migrants and refugees have arrived in Europe and so a new demand on the educational systems of European countries has arisen (Castaño-Muñoz et al., 2018). With this increase of migrants arriving in Europe, the process of learning a new language becomes more and more important, because language learning is fundamental for multiple dimensions of the integration of migrants. Learning the language of the host country helps with the integration in society and improves economic integration (De Paola & Brunello, 2016; Chiswick & Miller, 2014; Castaño-Muñoz et al., 2018). Moreover, language learning increases the sociocultural integration and political integration of migrants (Nakhaie, 2020; Johnston & Audunson, 2019). Evidence from other studies has showed that mobile language learning applications can benefit migrants, as these applications allow migrants to learn a new language in any setting and goes beyond a classroom (Rosell-Aguilar, 2016; Shortt et al., 2021).

However, the usage of digital technologies and more specifically, mobile language learning applications is not mentioned in the New Integration Act or the general explanation of the Integration policy in the Netherlands. But as stated above, supporting migrants to learn the language of the host country is crucial for their integration into society and finding employment. Mobile language learning applications offer new options to facilitate the process of learning a new language. Thus, there is space for an investigation of mobile language learning applications and their influence on the integration of migrants in the Netherlands. To do so, this study employs a qualitative research approach.

1.3 Reading Guide

This study will start by providing information on the integration policies that have been in place in the Netherlands over the past years in Chapter 2. Next, a critical examination of integration will be given in Chapter 3.1. The concept of Digital Governance will be shortly discussed in Chapter 3.2. Afterward, Sociocultural theory (SCT) will be explained in Chapter 3.3, from which expectations related to the sub-questions will be derived in Chapter 3.4. Following, Chapter 4 will give an overview of the qualitative approach used for this study, by explaining the methods and data collection. Semi-structured interviews were used for this qualitative approach. Chapter 5 will show the results of these interviews by conducting a critical analysis and discussing them in the light of the literature. Finally, Chapter 6 will provide a conclusion and suggestions for further research.

2.0 Dutch Integration Policies

This chapter provides a description of the integration policies that have been in place over the past years in the Netherlands and explains what the current Integration Policy of the Netherlands entails. This will provide a broader understanding that is necessary to answer to answer the sub-questions 1-3.

2.1 Migration and Governance in the Netherlands

The government of the Netherlands chooses to have a broad and integrated approach to migration, in order to balance the challenges and opportunities of migration. The goal of the Dutch government is to encourage social stability and social cohesion through the participation and civilization of migrants (Integratie En Maatschappelijke Samenhang | Ministerie Van Financiën - Rijksoverheid, n.d.).

On the local level, the integration of migrants is also an important topic for the Dutch government. According to Van Ewijk and Baud (2009), municipalities in the Netherlands are part of a cooperation with the countries migrants originally come from, including for example Turkey and Morocco. The Dutch municipalities contribute to the encouragement of participation of migrants in the Dutch society. Furthermore, they attempt to create a more positive feeling among migrants by improving communication between migrants and the Dutch municipalities (Van Ewijk & Baud, 2009).

There have been several Dutch policy models considering the integration of migrants in the Netherlands. The first policy was the Ethnic Minorities Policy established in the early 1980's (Scholten, 2013). In this policy, there was a belief that the key to the integration into the Dutch society was the cultural emancipation of migrants. In the 1990's a new policy was adopted that had a more individualistic approach, namely the Integration Policy, which caused a problematic link with the politics of the Dutch welfare state retrenchment. Therefore, after 2001/2002 a new policy was adopted called 'Integration Policy the New Style'. This policy was concerned with social cohesion in the Netherlands and a new national identity (Scholten, 2013).

Currently, The Integration Policy of the Netherlands (Inburgeringswet) is in place. This policy is used because the government wants everyone who lives in the Netherlands to be integrated and to be able to participate in the Dutch society (Ministerie van Algemene Zaken, 2022). This

includes learning the Dutch language, knowing something about the Dutch culture and being able to work or study in the Netherlands. To achieve this, the Netherlands has implemented a civic integration process that people who want to live permanently or for a longer period of time in the Netherlands are obliged to follow. However, there are certain exemptions for people who are not required to take place in this process, for example, migrants from the EU (Ministerie van Algemene Zaken, 2022). If a person is required to take place in the integration policy under the New Act, the municipality this person lives in makes a civic integration offer. This offer includes participating in a learning track that educates migrants in their knowledge of the Dutch language (Taking the Integration Exam: Which Exams – DUO Inburgeren, n.d.). Furthermore, migrants are required to take part in a Participation Statement Process (PVT). In order to integrate into the labour market migrants are also required to follow the Job Market and Participation Module (MAP) (Taking the Integration Exam: Which Exams – DUO Inburgeren, n.d.).

3.0 Theoretical framework

The previous chapters have shown the importance of the integration of migrants and described the integration policies of the Netherlands over the years. This chapter will provide theoretical insights on how integration can be defined in different ways and the importance of digital governance. Furthermore, this chapter will explore the role of social and cultural surroundings in learning a new language. Lastly, expectations regarding the sub-questions are made based on these theoretical insights.

3.1 Critical examination of Integration

The concept of integration is defined differently by various articles and authors. It has no generally accepted definition or theory and continues to be a controversial and debated topic. Therefore, this section will examine different interpretations of how integration can be defined.

Integration has been defined as a goal, a set of actions and processes by different scholars. Garcés-Mascareñas and Penninx (2016) define integration as a term that refers to the process of settlement of migrants. When immigrants arrive in their host country they interact with the host society and they must find a new home, job and find a place in the social-cultural sense. This includes the interaction and cooperation with other individual groups. Garcés-Mascareñas and Penninx emphasize that the arrival of immigrants also affects the host society. For example, there is a change in the population of the host country and new institutional arrangements are necessary to meet the needs of migrants. Penninx (2007) builds on this by stating that when newcomers see themselves as different and the host country does so too, migrants aspire to gain a recognized place in the society. He then defines integration as *"...the process of becoming an accepted part of society."* (Penninx, 2007, p.10). His definition emphasizes the process of integration instead of defining an end situation and leaves final outcomes open by not stating the requirements for acceptance by the host society (Penninx, 2007). He argues that migrants should be given a toolkit that assists them in finding a place in society, including tools for training the language of the host society. According to him, these tools would prepare migrants to fully participate in society. The provision of these tools would be a task for local policies (Penninx, 2007).

Instead, Galera (2018) uses the definition of the European Commission which sees integration as a two-way effort. She/he argues that it is through the efforts of the host society that the rights of migrants can be recognized. The migrants are asked to embrace the duties and civic values

of the host society and the presence of the migrants is expected to benefit the host society (Galera, 2018). This is in line with that Korac (2003) argues, which is that integration is mainly defined by its functional and practical aspects. She/he argues that this includes the understanding of integration as a migrants' right to protection entailing access to and provision of social services by the host society. When there are multiple cultures that are forced to co-exist within one society, a process of change occurs that can be defined as integration (Korac, 2003). This is also emphasized by Oliver and Gidley (2015) who argue that integration refers to how a host society and migrants live together and how migrants interact with the institutions inside of this society. These processes can include assimilation, identity and a feeling of belonging in the host society (Oliver & Gidley, 2015). An emphasis is put on the fact that not only researchers define the concept of integration, but also policymakers and these interpretations may differ from each other (Korac 2003). Thus, integration is a term not only used as a concept, but also as a policy objective (Oliver & Gidley, 2015). The emphasis here lies on maintaining stability in society as a whole. This would include the social interaction also discussed by Garcés-Mascareñas and Penninx (2016).

According to Oliver & Gidley (2015), there are different domains in which integration occurs. Examples of these domains are foundations, which entail rights and citizenship. Social connections and facilitators, in which facilitators can be a language and cultural knowledge that make integration easier. And finally, means and markers, which are about finding employment, finding a house, education and being included in the health system (Oliver & Gidley, 2015). Integration as a policy objective on the other hand is seen as a practice to influence actions and intervene in processes or change them. But the two perspectives are intertwined, as integration as an objective uses the theories of integration as a concept to make the changes (Oliver & Gidley, 2015).

Oliver & Gidley (2015) argue that policies on integration in Europe are placing more responsibility on migrants to show that they are willing to integrate into society. They say this willingness can for example be shown by learning the language before departing to the country or taking a citizens test pre-departure. On the other hand, these policies also present a potential barrier, since it might be financially and logistically challenging. For example, it can be challenging to attend a testing centre (Oliver & Gidley, 2015).

Furthermore, Oliver and Gidley (2015) explore the economic integration of migrants as a policy priority. They argue that employment provides an opportunity to develop the knowledge of the language and helps migrants meet members of the host society. However, language barriers are at the same time one of the most significant barriers to accessing employment (Oliver & Gidley, 2015).

3.2 Digital Governance

In order to develop a modern democracy and foster the quality of public service delivery, the usage of Information Communication Technologies (ICTs) is widely considered as an important tool (Chang, 2012). Over the past years, lots of new technologies are emerging at a rapid speed, and in order to address the complexities that come with these new technologies a new form of governance is needed, namely Digital Governance (Algazo et al., 2021).

According to the article of Misuraca and Viscusi (2014, p.150), "*e-Governance is the field of activity where policy design, co-ordination, arbitration, networking and regulation (just to mention essential steering functions), with ICTs, but also of ICTs, takes place.*". In this context, interoperability is an important concept, which the book of Milakovich (2021, p.32) defines as "*The capacity of governmental organizations to share and integrate information using common standards.*". According to him/her digital governance can lead to a more open and transparent process and can increase citizen participation. Furthermore, ICTs can improve the quality of service by improving the use of scarce financial resources (Milakovich, 2021). However, there are challenges regarding digital governance. For example, Engvall & Flak (2022) argue that digitalization can lead to misinformation, cyber-attacks and breaches of privacy. They say these are issues that are connected to the protection of human rights, accountability and fairness. Transparency in governance is an important issue regarding these challenges. Furthermore, decentralized processes and the inclusion of multiple stakeholders in decision-making are key to digital governance (Engvall & Flak, 2022).

3.3 Sociocultural theory (SCT)

Daneshfar and Moharami (2018) state that the main concept of sociocultural theory focuses on the role of social interaction in cognitive development. In this, mediation is highly important because, through mediation, which is explained as the individuals' responsiveness to support, individuals are able to exceed their independent performance (Daneshfar & Moharami, 2018). According to them, there are three fundamental cultural factors by which human psychological

processes are organized. These cultural factors are activities, concepts and artifacts and are seen as the factors that mediate the relationships between people. The language that someone uses for self-regulation of their thinking when carrying out a task, is influenced by the material circumstances of a task. These material circumstances include the language in which the task is posed and the language of the society or community in which the task is being carried out (Daneshfar & Moharami, 2018). According to the article of Qing Ma (2017, p.184) "*...language should be studied in its natural surroundings where personal, situational, cultural and societal factors shape the production and evolution of language.*".

In mediation theory, each individual has a mediated relationship with the world through the use of tools (Lantolf, 2006). There are three types of tools, namely physical tools, psychological tools and a tool related to assistance provided by others to help a learner make progress in learning a new language (Lantolf, 2006). Language itself is a psychological tool that humans employ to interact with others and learn a new language (Qing Ma, 2017). A language learning app can be related to an assistance tool, since it provides help to learn a new language. Figure 1 gives an overview of the mutual connections between the individual, the environment, culture and historical development. In this image the connections between the dimensions are visible with arrows and the concepts of these dimensions are described.

Figure 1
Sociocultural Theory defined by Kelley (2007)
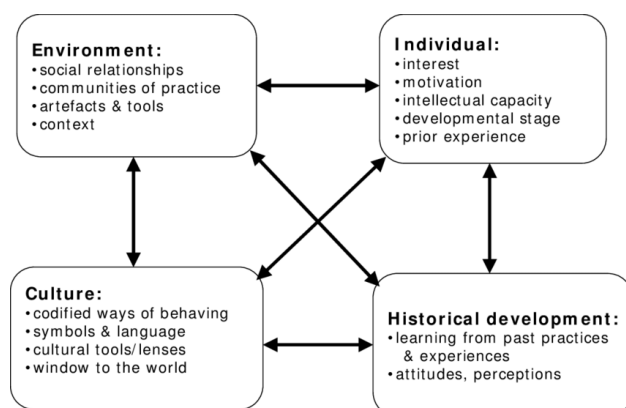
3.4 Expectations related to the research question

This paragraph outlines the expectations related to the research question "How does the local and regional government of the Netherlands use mobile language learning applications to encourage migrant integration? What are the impacts these tools have on integration?".

SQ 1 asks "What mobile language learning apps are available through the local and regional government of the Netherlands?" This question is descriptive and exploratory and is needed to provide background on the topic. This question provides information that is needed to be able to answer the second and third sub-question. Literature has shown that mobile language learning applications are already a trend in education. Thus, expectation one is that the local and regional governance uses mobile language learning applications to the stimulate language learning of migrants.

SQ 2 asks "What advantages and disadvantages do local and regional governments in the Netherlands perceive from the use of mobile language learning apps?" SCT expects that social interaction plays an important role in cognitive development. In order for social interaction to exist, it is necessary for migrants to have sufficient knowledge of the language of the host country. SCT expects that the way in which individuals learn a new language is mediated by the use of mobile technologies. Through this mediation, migrants are able to exceed their independent performance.

The Dutch integration policy requires individuals from outside the EU to take a Dutch language exam. Furthermore, one of the aims of the Dutch government is to improve migrant participation and integration into the Dutch society. On the local and regional level municipalities also contribute to the integration of migrants by creating a more positive feeling among migrants through the improvement of communication between migrants and the municipality they live in. Digital technologies may represent a new opportunity in this. Thus, expectation two is that the local and regional government of the Netherlands uses digital technologies to encourage the integration of migrants.

SQ 3 asks "How does the use of digital technologies by the local and regional government of the Netherlands impact the integration of migrants?" SCT expects that individuals have a mediated relationship with the world through the use of specific tools. These tools include psychological tools by which individuals learn a new language and tools related to assistance,

by which individuals can learn a new language via for example the use of mobile language learning applications. Mobile language applications provide the opportunity for migrants to autonomously learn a new language also outside of a classroom. Evidence from other literature shows that learning a new language also affects the economic integration of migrants, because it makes it possible for them to find employment in the Dutch labour market. Thus, expectation three is that the use of digital technologies by the local and regional government of the Netherlands advances the integration of migrants.

4.0 Methodology

This chapter will discuss the research design of the study and will justify the decisions made concerning the research design, data collection and the analytical approach.

4.1 Research Design

The aim of this research is to discover whether the local and regional governments make use of mobile language learning apps and how effective of a policy tool this is to encourage the integration of migrants. Therefore, this study has adopted a qualitative approach. Typically, a qualitative approach is used to show the interpretations and feelings of participants on certain phenomena (Jackson et al., 2007). In this type of research, it is usually not possible for the data to be measured or counted (Jackson et al., 2007). Thus, this is the best-suited method for this study. Evidence from literature has shown that where France and Germany are increasingly putting focus on the integration of migrants via language training, the Netherlands is doing the exact opposite. Also, the New Integration Act of the Netherlands does not mention the use of digital technologies for the integration of migrants. To explore this further, this study focuses on the local and regional government of the Netherlands and puts a specific focus on mobile language learning apps. This research uses key informant interviews to answer the central question "How does the government of the Netherlands use mobile language learning applications to encourage migrant integration? What are the impacts these tools have on integration? How effective as a policy tool is this?".

4.2 Data collection

In this study, the research question is answered by conducting interviews with key informants. It entails conducting interviews with relatively few individuals who have certain specific characteristics (Goth & Berg, 2010). Their role or position in society should be able to expose them to the information that the interviewer seeks for (Marshall, 1996). This type of interviews allows for informal conversations (Kumar, 1989) and is appropriate for my study because it can be done within the time limit given by the University. To select interview subjects, convenience sampling is employed. Convenience sampling is the targeting of people that are easy to access and willing to participate (Etikan et al., 2016). This makes sure that the interviewees are readily available, which is also convenient considering the time constraint. The interviews are semi-structured interviews (see Appendix 1), meaning that the questions asked in the interview are pre-planned and open questions. This leaves space to elaborate on certain issues if necessary.

Other types of interviews such as structured interviews might constrain the depth of the responses (Alsaawi, 2014).

A search on Google Scholar has provided 10 results on studies of language learning apps and migration that conduct interviews. This shows that other articles use the same approach to answer their research question and therefore I use interviews. After conducting the interviews, a critical analysis of the interviews is done in order to answer my research question. This process starts with transcribing the interviews from spoken data to written data (Alsaawi, 2014).

A total of 14 invitations (N=14) were sent via email in Dutch to municipalities of the Netherlands and language learning organisations in the Netherlands. Four possible interviewees rejected the invitation (N=4) because of time constraints in their schedules. A total of five possible interviewees (N=5) never answered to the first email or the reminder email. A total of five accepted the invitation (N=5). The first interviewee works for the municipality of Enschede, and the second and third interviewees work for the municipality of Hardenberg. This is a joint interview, since they work for the same municipality. The fourth and fifth interviewees work for language learning organisations, hired by the municipalities. The questions based on the interview guide are asked in Dutch, since this is the native language of the interviewees. The length of the interviews is approximately 30 minutes. The interviews are audio-recorded, so that all the information given by the interviewees can be transcribed (see Appendix 3). All interviewees have given informed consent to the audio-recordings.

4.3 Analytical approach

Interviews are used to describe and explore how extensively mobile language learning applications are being used by the local and regional government of the Netherlands to answer SQ 1. To address this question, a literature review is conducted to identify the available language learning apps. In order to do so, the concept of mobile language learning applications is needed. This concept is defined as a digital technology that provides people with the opportunity to autonomously learn a new language (Rosell-Aguilar, 2016). This concept is also discussed in the article of Ngan et.al (2016), Short et.al (2021), Qing Ma (2017) and Kukulska-Hulme (2019).

Next, the interviews provide information on the language learning apps used by the language learning organizations hired by the municipalities. A description of the Integration Policy of

the Netherlands is needed to provide a broader understanding. This policy puts focus on social cohesion and stability in the Netherlands and aims to encourage this through the integration and participation of migrants into the Dutch society (Integratie En Maatschappelijke Samenhang | Ministerie Van Financiën - Rijksoverheid, n.d.). The Dutch Integration Policy is also discussed in the articles of Scholten (2013) and Van Ewijk and Baud (2009).

To answer SQ 2 and SQ 3 a critical analysis of interview results is conducted. For SQ 2, the concept of sociocultural integration is necessary to answer the question of what potential the municipalities of the Netherlands perceive language learning apps can have in encouraging the integration of migrants. According to Fokkema and De Haas (2011), this concept refers to the changes in attitude, cognition and behaviour that conform to the dominant norms of the receiving country. This includes making friends, having feelings of belonging or having feelings of a national identity (Fokkema & De Haas, 2011). This concept is discussed in the article of Nakhaie (2020) and Johnston and Audunsun (2019). To be more specific, social integration refers to the number of social relationships and how often there is interaction with these relationships (Lifanova et al., 2016). Another concept that is needed for this sub-question is the concept of economic integration. The European Commission states that for an effective integration into society, it is important to include migrants in the labour market (Integration in the Labour Market, n.d.). This concept is discussed in relation to language learning in the articles of Chiswick and Miller (2014), Castaño-Muñoz et al. (2018) and De Paola & Brunello (2016).

To answer SQ 3, the concept of digital technologies is necessary to answer what digital technologies the municipalities of the Netherlands use and what barriers they identify. The concept of digital technologies can be defined as *"...advanced information and communication technologies and tools used in amplifying productivity across the construction life cycle"* (Bosch-Sijtsema et al., 2021, p.900).

The respondents of the interview were able to choose the interview tool they preferred, so physical or online. Two respondents chose for a physical interview and two chose for an online interview, due to tight schedules on their side. The online meeting platform Microsoft Teams was used for the online interviews. The interviews are manually transcribed in Dutch and in order to structure the data, the computer program Atlas.Ti is used. The codes for Atlas.Ti are composed based on the sub-questions and the information provided by the interviewees (see

Appendix 2). The coding strategy consists of labelling fragments of the interview. The results of the coding are explained in Chapter 5. Because the research is in English, the codes in Atlas.Ti and the quotes in the result section are translated into English.

4.4 Operationalisation of interview guide

The interview questions are structured according to the sub-questions. First, introductory questions are asked to get a better understanding of the interviewee's role in the organization and to define what integration means to the interviewee. Second, questions about digital technologies are asked. Lastly, to be more specific, questions about mobile language learning apps are asked. Table 1 gives a brief overview of the structure.

Table 1
Structure of interview questions

Sub-question (SQ 1-3)	Description	Example
SQ1: "What mobile language learning apps are available through the local and regional government of the Netherlands?"	Questions about the use of language learning apps.	"To what extend are mobile language learning apps used by the regional and local government of the Netherlands?"
SQ2: "What advantages and disadvantages do local and regional governments in the Netherlands perceive from the use of mobile language learning apps?"	Questions about the advantages and disadvantages of language learning apps.	"What are the advantages of the use of mobile language learning apps to encourage integration?"
SQ3: "How does the use of digital technologies by the local and regional government of the Netherlands impact the integration of migrants?"	Questions about digital technologies.	"Which digital technologies does the regional and local government of the Netherlands use to encourage integration?"

5.0 Analysis

In this chapter the results of the semi-structured interviews will be explained by first describing how the municipalities define integration. Next, the available mobile language learning apps will be discussed. After conducting the interviews, it was found that the municipality of Enschede and Hardenberg both hire exterior language learning organisations to provide language courses. Therefore, two additional interviews were conducted with language learning organisations that were hired by the municipalities. It is important to note that Interviewee 4 works for a language organisations that focusses on lower- and middle educated migrants, while Interviewee 5 works for a language organisation that focus only on higher-educated migrants. After that, this chapter lays out the potential of the use of mobile language learning apps, including advantages and disadvantages as seen by municipalities of the Netherlands, based on the concepts identified in the methodology section. Lastly, the usage of digital technologies by the municipalities and the barriers for using it for migrants will be discussed.

5.0 Definition of integration by municipalities

The municipalities define integration as participating in the Dutch society, in the way that a Dutch citizen does. This includes children going to school and most importantly, working (Interviewee 1). Working should be understood in a broad context, because work also entails voluntary work or an internship. When working is not an option, education is seen as a good alternative to still participate in the Dutch society (Interviewee 2). The combination of following language courses and working on top of that is a key necessity to integrate. This is in line with the literature on the definition of integration described in Chapter 2, where the interaction with the host society is also mentioned as an important aspect. Furthermore, finding employment and following an education falls under the domain of means and markers, as discussed by Oliver and Gidley (2015).

5.1 Available mobile language learning apps

First, available mobile language learning apps identified in literature will be discussed. Next, the mobile language learning apps that the language organisations hired by the government use will be outlined.

5.1.1 Identified in literature

Heil et al. (2016) reviewed fifty mobile language learning applications to explore the trends, challenges and opportunities. Examples of these apps are Babbel, Mindsnacks, Duolingo and Voxy (Heil et al., 2016). According to Kessler et al. (2023), Babbel is a paid language learning app. The app offers short lessons, but also podcasts and short stories (Kessler et al., 2023). The app Mindsnacks is an educational game that tests the mastery of a language at increasingly difficult levels (Poureau & Wright, 2013). Duolingo is seen as the most influential and popular mobile language learning app (Short et.al, 2021). This app uses gamification to motivate its users to learn a new language, which is also part of the reason for its popularity besides the fact that it is charge-free (Short et.al, 2021). "*Gamification refers to the use of game-based elements to engage individuals, motivate action, promote learning, and solve problems.*" (Short et.al, 2021, p.2). Voxy is an AI-driven platform that helps individuals reach their goals in one-third of the time of traditional courses (Voxy, 2023). Its mission is to break down the world's language barriers in order to empower people (Voxy, 2023). According to Heil et al (2016), each of these apps focuses on different aspects of language learning. They argue that Babbel for example focuses more on grammatical instructions than Duolingo or Voxy. Furthermore, Voxy focuses more on reading passages, which is defined as *"...textual content longer than a sentence"* (Heil et al., 2016, p.40). Only 10 out of 50 apps asked users to read passages (Heil et al., 2016).

Godwin-Jones (2011) identifies several other mobile language learning apps, such as Anki, Quizlet and Living Language for French. The app Anki entails "*…a spaced repetition vocabulary study program.*" (Godwin-Jones, 2011, p.4). This app is open-sourced and non-commercial. It uses flashcards, *"...which increases experimental rigor…"* (Hanson & Brown, 2019, p.138). Quizlet provides vocabulary learning through a flashcard system (Godwin-Jones, 2011). This app is also non-commercial, and its main advantages are that it is easy to use and has many different learning features and modes so that a user can choose the best-suited mode (Sanosi, 2018). Living Language for French provides full language courses (Godwin-Jones, 2011).

Tommerdahl et al. (2022), like Heil et al. (2016), identifies Duolingo as a mobile language learning app. Other apps they identify are Conjugation Nation, Memrise, English File Pronunciation, Spaceteam ESL and LINE (Tommerdahl et al., 2022). According to Castañeda and Cho (2016), Conjugation Nation includes the practice of verb conjugation. They say this

app provides its users with feedback on their answers and also allows them to request feedback from an instructor via email. Unlike the other apps that are mentioned, this is a paid app (Castañeda & Cho, 2016). The app Memrise includes English vocabulary learning (Tommerdahl et al., 2022). According to Fathi et al (2018) this app provides the opportunity to learn offline. Like Anki and Quizlet, it uses flashcards as memory aids to recall on vocabulary (Fathi et al., 2018). English File Pronunciation includes practicing pronunciation (Tommerdahl et.al, 2022). This app offers an interactive sound chart and allows users to record themselves in order to compare their pronunciation to the one of the sound chart (Fouz-González, 2020). Spaceteam ESL is about oral fluency (Tommerdahl et.al, 2022). They say this app makes use of gamified elements. *"To play the game, players must engage in real-time computer-mediated interaction with other players, during which they must intelligibly produce and carry out time-sensitive oral instructions to navigate a spaceship."* (Grimshaw & Cardoso, 2018, p.159). The app LINE is about listening and reading comprehension (Tommerdahl et.al, 2022).

5.1.2 Identified in language organisations

One of the language organisations hired by the government identifies Quizlet as a mobile language learning app that is used by teachers, which is in line with the mobile language learning apps identified in literature (Interviewee 4). However, this organisation identifies another mobile language learning app, not mentioned above. Namely, Kahoot. These apps are used to make education more challenging and since they are both quizzes, to stimulate interaction with others (Interviewee 4). Furthermore, the apps are used to ensure that different forms of teaching are being used, so not only a teacher explaining. The mobile language learning apps are mostly used for the repetition of what is learned (Interviewee 4). Since both these apps are non-commercial, the apps are easy to use and access.

Interviewee 5 also identifies Kahoot as a mobile language learning app, but also identifies a new one, namely Mentimeter. These apps are again used as a support and do not replace classical teaching methods. Interviewee 5 does not see Kahoot as a learning tool, but more as a way for teachers to gain information on for example what grammar is difficult for students and what needs more attention from the teacher. It is also used as a tool to see how much students can remember from what they have learned (Interviewee 5).

5.2 Potential of the use of mobile language learning apps

During the interviews, multiple questions regarding the influence of language learning apps on the integration of migrants were asked. Both the municipalities of Enschede and Hardenberg hire exterior companies to provide language courses for migrants. Each of the schools and organizations hired by the government to provide language courses does this in its own way and on different levels (Interviewee 1). For example, Saxion has a faster pace of learning than Budak College. Therefore, the municipalities evaluate per individual what organization fits their learning capabilities best. But these schools have different methods of teaching that are not known by the municipalities (Interviewee 1). Since the municipalities do have information on for example the capabilities of migrants and work together with them, it is still interesting to think about what could be the advantages and disadvantages of mobile language learning apps to help migrants learn a new language. Several perspectives from the municipalities on this matter have come forward in the interviews. First, the learning of a new language and its influence on the integration of migrants will be explained. This part is linked to cultural aspects and differences that are visible in integration. Second, the advantages and disadvantages of using mobile language learning apps will be discussed from the perspective of the municipalities and the language learning organisations hired by these municipalities.

5.2.1 Language learning

Learning the language of the host society can influence the integration of migrants in a positive way, because it makes it easier to connect with the Dutch society. Furthermore, for some migrants learning a new language can be rather difficult and especially for these people contact with the host society is of utmost importance (Interviewee 1). This connection to the host society also includes the connection with the workplace, because many employers do not want employees that do not speak the language (Interviewee 1). This also has to do with the importance of understanding the safety regulations that companies have, which is difficult to understand if you do not speak Dutch (Interviewee 1). This problem can be seen with the migrant workers that came to the Netherlands in the '60s and '70s. These migrant workers came here with the intention to work for a while and afterward go back to their home country and therefore did not feel much need to learn the language (Interviewee 1). Nor did the government feel compelled to teach them. But these migrants never returned to their country of origin.

"They have now been living here for around 30 years and still do not speak the language."

(Interviewee 1).

The most important methods of integration are labour market participation and cultural integration. Labour market participation is about finding employment. For the interviewees, cultural integration includes learning more about the Dutch rule of law, norms and values and separation of church and state (Interviewee 1). For both of these methods of integration language plays a crucial role. On the one hand, learning the language of the host country is necessary to participate in the labour market and society in general. On the other hand, these methods stimulate learning a new language by putting into practice what is learned. By being in a workplace, a person is constantly dealing with language. Therefore, a job is one of the most important ways of learning a new language (Interviewee 2).

For older people, civil integration is usually not enough. This is due to the fact that it is more difficult for them to learn a new language. Also, there are a lot of migrants that are illiterate. For these individuals, by the end of the civil integration, language proficiency is not enough to participate in society to a higher extent (Interviewee 3).

For higher-educated migrants it can be challenging to find a fitting workplace. This is due to the fact that their language proficiency often is not in line with their level of education. Placing them at a higher-level workplace comes with the need of having a higher proficiency in the Dutch language, because communication is often faster (Interviewee 3).

5.2.2 Cultural aspects

Sometimes the necessity of cultural integration also comes into play when finding employment. For example, in the Netherlands punctuality is highly valued, while in other countries this is less important. Also, some migrants are not able to perform well on a job interview, because from their culture they are used to be told what to do and therefore only answer questions with yes and no (Interviewee 3). Therefore, it is important to have an understanding of the culture of the host society, also in order to find your own place within this society (Interviewee 2).

"Language is an important way to find your place within a society. And you learn a language through lessons in a classroom and through a job. At the same time, a job also puts you into contact with people." (Interviewee 2).

Furthermore, for women in the Netherlands it is very common to work. But for women from different cultures, this is not always the case. For example, for women from Syria it is common to stay at home and look after the children while the man works (Interviewee 2). These women did learn the language but are not able to apply their knowledge in practice, because they participate less in society by not having contact with Dutch-speaking individuals in the workplace. At home, these women will mostly speak their mother tongue and therefore their knowledge of the host country's language is easier forgotten (Interviewee 2).

5.2.3 Advantages

5.2.3.1 Municipalities' perspective

Interviewees were asked what advantages they could see from the use of mobile language learning apps. In their view, it provides the possibility for migrants to learn a new language without being bound to a certain time or place, which gives them more flexibility. Migrants are stimulated to engage in language learning everywhere, also outside of a classroom (Interviewee 1). This could particularly for higher-educated migrants be convenient, but this does mean that a person needs to have a certain level of self-reliance, which is not that much found in migrants.

"Yes, so it is really for a small group of migrants in our case, with higher-educated migrants that are very self-reliant and perhaps also already have a paid job before they even come in the picture…" (Interviewee 2).

5.2.3.2 Language learning organisations' perspective

Language learning apps provide the opportunity for students to have a different way of obtaining information and practicing a language. It provides more of a challenge and can be done separately from the teacher (Interviewee 4). This means that a teacher is not only explaining and sending out information the whole class, because there is a different way of interacting through using a mobile language learning app. This also gives teachers the opportunity to give special attention to individuals that have questions or problems, while the other students are able to use this time to practice by themselves (Interviewee 4).

5.2.4 Disadvantages

5.2.4.1 Municipalities' perspective

On the other hand, an app would be very difficult to monitor, which became a very important aspect of the New Act on Integration. An app might be too non-committal, because since it is hard to monitor people might decide not to use it. After all, no one will find out. Furthermore, an app might be convenient for young people, but the municipalities also have to help older people and for them, digital technologies are already a challenge in itself. Therefore, an app might not be appropriate or even possible for older people (Interviewee 1). This shows again that apps are not for everyone, and it is necessary to assess migrants individually and find an appropriate method of language learning. Another disadvantage highlighted from the interview is that an app such as Duolingo does not have all languages, so for some migrants this is not an option at all (Interviewee 3). Lastly, teachers often have a signalizing function. A computer or an app would be unable to solve issues that migrants might have, including issues that are not related to learning a new language. A teacher is able to take these issues into account and is able to talk about this with a migrant.

> "This is of course also important. And you do not have this via the internet or an app. It is human work." (Interviewee 3).

5.2.4.2 Language learning organisations' perspective

A disadvantage of the use of mobile language learning apps is that teachers find it difficult to let go of control and have students study on their own. Teachers are used to explaining everything and therefore know what students are learning and how they are progressing. This becomes less when students make use of language learning apps (Interviewee 5). Furthermore, the language learning organisation of Interviewee 5 uses a digital method for online learning and practicing the language, which is already of lot of work for students. Therefore, using a mobile language learning app as well could be too much for students. Moreover, the classes are structured in a certain way and deal with certain topics that are most likely not similar to the structure of the mobile language learning apps.

"I don't know how effective it is for students to deal with different topics outside of the classroom, which are not connected to the method" (Interviewee 5).

To conclude, a new language can be best learned by being in contact with the host society. Therefore, it is necessary to integrate into the Dutch society and culture, to have social interactions and to take part in the Dutch economy. Especially for people that struggle with learning a new language, being in touch with Dutch-speaking individuals will help improve their proficiency, because they are able to put their knowledge into practice. Mobile language learning applications provide the opportunity to learn a new language outside of the classroom, but come with multiple disadvantages as seen by the municipalities and the language learning organisations.

5.3 Digital technologies

During the interviews, several questions about the use of digital technologies were asked. It became clear that the municipalities differ in the extent to which digital technologies are used. This section of the chapter will discuss what digital technologies the municipalities use and seeks for an explanation for the differences in the extent to which digital technologies are used. Next, multiple barriers have been uncovered for the use of digital technologies. These barriers are not only on the side of the municipalities, but also on the side of the migrants, and will be explained in this section.

5.3.1 Used digital technologies

5.3.1.1 Digital technologies used by the municipalities

To investigate what digital technologies are used by the municipalities, interviewees were asked what digital technologies are used the most to encourage the integration of migrants. In their answers, interviewees brought up the use of a test that measures the learnability of migrants. This test is an online test that decides whether a migrant would be capable of achieving level B1 proficiency in the Dutch language or not. This test does not test the previous knowledge of the Dutch language, but checks for an individual's cognitive abilities. The municipality of Enschede uses digital technologies to a limited extent (Interviewees 1&2).

"The only digital thing is the learnability test." (Interviewee 1).

Other than that, the usage of Google Translate and the DUO portal are named for communicating with migrants (Interviewee 1).

The municipality of Hardenberg uses digital technologies to a larger extent. This municipality also names Google Translate and an app called 'Vertaal' as tools for communicating with migrants, but also emphasizes the need for an interpreter. An interpreter is able to interpret what is being said and does not literally translate a sentence, but brings over the meaning of the message that is trying to be communicated (Interviewee 2). This is necessary, because Google Translate is not always able to suffice in communicating the message.

"In principle, we do not make much use of translation apps." (Interviewee 3).

Digital technologies are also used when trying to find employment. This is done via ways that are in line with the regular routes of people with a Dutch nationality, by for example online employment agencies such as Indeed or the website LinkedIn. Digital technologies are mostly used for administrational purposes (Interviewee 2). There are multiple systems used for the tracking of clients, for example, 'Suite voor Sociaal Domein'. Another system is called CompetenSYS, which is a diagnosis system that is often used. Furthermore, there are systems used for communication with other organizations (Interviewee 2). Examples of these are 'TVS' (Taakstelling Volg Systeem), which is a system that is used for the communication between the organization COA and the municipality, and 'Portaal Inburgering DUO', which is a portal through which the organization DUO communicates to the municipality (Interviewee 2).

5.3.1.2 Digital technologies used by language learning organisations
The language learning organisations allow migrants to use a translation app in class if they are unable to find understand the meaning from Dutch to Dutch (Interviewees 4&5). However, it is emphasized that the best way to learn new words is to learn them in context, and not by looking up the meaning in the native language of the student (Interviewee 5). Furthermore, a digital method called Code+ is used. The students are expected to do the exercises in this program as preparation for class. This digital method asks students to practice listening and reading and consists of different levels of difficulty, depending on how far students are in class (Interviewee 5).

5.3.2 Barriers

Several barriers to working with digital technologies have been uncovered during the interviews. First of all, the lack of skills and knowledge of digital technologies by the municipalities can be a barrier. For example, interviewee 1 expressed unfamiliarity with language learning apps. This could indicate a limited knowledge of digital technologies within the municipality of Enschede.

"I do not have many digital skills. I am already very happy that I have children who can help me with this." (Interviewee 1).

Unfamiliarity with apps could be a reason why digital technologies are only used to a limited extent at the municipality of Enschede. Perhaps there are more digital technologies involved, but the lack of knowledge of what these technologies entail would prevent the interviewee from realizing this.

Furthermore, the municipality of Hardenberg does not have good previous experiences with digital language providers. In their experience, these digital language providers are often very commercial, and are more focused on making money than on providing migrants with the education that is suited for them. Migrants have a budget of around 10 thousand euros to use for the integration. Some of those companies would try to get the full 10 thousand, by providing extra courses that some migrants did not even need (Interviewees 2&3).

"So, we do not prefer migrants to follow the integration digitally." (Interviewee 3).

Second, the use of digital technologies by migrants has uncovered barriers. Some migrants do not have any experience with digital technologies.

"There was a woman who had never seen a computer before. And she also had to do the learnability test, but she did not know where the mouse was." (Interviewee 1).

The municipalities also observe a lack of knowledge and skills of working with digital technologies when migrants try to find employment. Searching for job vacancies is mostly on the internet and the online platforms often pose a challenge for migrants. The municipalities also emphasize here that physical education and guidance are necessary to uncover problems that computers are not able to uncover or solve.

To conclude, digital technologies are mostly used by the municipality for communication, with migrants and other organizations, and for administration and tracking the process of integration. The language learning organisations use a digital method called Code+. The use of digital technologies is not obvious for everyone, sometimes there is a lack of knowledge on how to use it and what falls under the definition of digital technologies. This applies not only to the municipalities, but also to migrants.

5.4 Discussion

The objective of this research was to answer the central question: "How does the local and regional government of the Netherlands use mobile language learning applications to encourage migrant integration? What are the impacts these tools have on integration?". The results of this study will now be discussed. Next, the strengths and limitations of this study will be explained. Lastly, several suggestions for further research will be made.

The findings of this study support the notion in literature that mobile language learning apps create opportunities for learning a new language and integrating in society. In this study, it is found that the language organisations hired by the government use mobile language learning apps to stimulate the repetition of what is learned and to support classical methods of teaching. Literature has already highlighted that using mobile language learning applications is a trend in training and education (Kukulska-Hulme, 2019). Furthermore, the interviewees thought the advantage of mobile language learning applications is that it is not bounded to a certain location and can be done outside of a classroom, which is also found in the study of Rosell-Aguilar (2016) and Shortt et al. (2021). Sociocultural Theory expected that mobile language learning apps are an assistance tool in learning a new language (Lantolf, 2006). This is in line with the results from the interviews with language organisations hired by the municipalities. The interviewees highlighted that their municipalities use mobile language learning applications as a means of supporting the 'classical' methods of teaching.

On the other hand, several disadvantages have been found from the perspective of the municipalities and the language learning organisations hired by the municipalities. The interviewees thought that not all migrants have knowledge on how to use digital technologies, or more specifically mobile language learning apps. A study by Sophonhiranrak (2021, p.5) also found that *"Insufficient knowledge and skills in using mobile devices are crucial problems*

that obstruct learning experiences.". It concludes that not only users, but also instructors need to have sufficient knowledge of mobile devices to be able to employ the use of mobile language learning apps in a classroom (Sophonhiranrak, 2021). Furthermore, the interviewees highlight the importance of a physical teacher, because they have a signalizing function and can address issues in a way that computers or language apps cannot. This is acknowledged by the study of Hoven and Palalas (2011), which concludes that the interaction mobile language learning applications may provide would be less in-depth or meaningful, since there is a limited depth in thinking and learning.

This study shows that language learning is one of the most critical aspects of integration. In literature it is found that language learning is important for multiple dimensions of integration. For example, learning the language of the host country improves economic, sociocultural, and political integration (De Paola & Brunello, 2016; Chiswick & Miller, 2014; Castaño-Muñoz et al., 2018; Nakhaie, 2020; Johnston & Audunson, 2019). These dimensions found in literature are consistent with the dimensions identified in the interviews with key informants. The interviewees further emphasize this by pointing out that by having sufficient knowledge of the host countries' language an individual is able to participate in for example the labour market, and with this at the same time improves the knowledge of the language by putting into practice what is learned.

The results of the interview reveal that it is difficult for highly skilled migrants to find a suitable job that is in line with their previous education in their country of origin, because their proficiency in the language is not yet good enough. The study of Van Ngo and Este (2006, p.28) found similar results, stating that *"Foreign-trained immigrant professionals, especially those from countries other than the United States and the United Kingdom and from Western Europe, are often unable to secure employment relevant to their professional training.".* Their research was conducted in Canada and it concludes that language barriers are one of the problems for migrants in the process of entering the labour market (Van Ngo & Este, 2006).

6.0 Conclusion

The most important aspects of integration are found to be labour market participation and cultural integration and knowing the Dutch language is key to achieving this. This is challenged by the difficulty for highly skilled migrants to find a fitting workplace that not only matches their professional skills, but also their knowledge of the Dutch language. At the same time, cultural differences can also be an obstruction to finding a workplace.

The results of this study show that the local and regional government of the Netherlands use mobile language learning applications to encourage the integration of migrants. According to the interviewees, mobile language learning apps are used to support the 'classical' methods of teaching. Several available mobile language learning apps are identified in literature and the interviews. These include Babbel, Voxy, Mindsnacks, Duolingo, Quizlet, Kahoot and Mentimeter. However, the language learning organisations only use Quizlet, Kahoot and Mentimeter, and only to a certain extent. These apps are primarily used as a start-up exercise of the class for migrants to see if they remember what they have learned and as a repetition.

Although using mobile language learning apps can have some advantages, such as the possibility to learn a language not bounded to a location or time, the interviewees mostly identified disadvantages. Some of the disadvantages associated with the use of mobile language learning apps include the non-committal nature of the app. Furthermore, it can be challenging to monitor what is learned via an app. Additionally, older people often lack knowledge of how to use an app. Finally, an app is unable to take into account certain issues migrants might have that are not related to language learning. On the contrary, a physical teacher is able to take these issues into account and can perhaps even address them. Moreover, the topics covered in an app do not always match the topics covered in class. The interviewees therefore question the effectiveness of using a mobile language learning app. The interviewees emphasized the importance of human interaction and a physical teacher in learning a new language.

Finally, the interviewees use several digital technologies to promote the integration of migrants. The municipalities mostly use client tracking systems and communication portals such as DUO and a digital learnability test that all migrants have to take. The language learning organisations use a digital method called Code+ with exercises that need to be prepared before a class starts. However, also in the use of digital technologies multiple barriers can be found. These barriers

include the lack of skills and knowledge on how to use digital technologies by the municipalities as well as the migrants, and poor service from digital providers that caused municipalities to prefer physical education.

6.1 Strengths and limitations

The main strength of this study is the use of semi-structured interviews that provide qualitative data about the perspectives of Dutch municipalities and language organisations hired by these municipalities on the use of mobile language learning applications. Other research approaches, such as a quantitative study could not have provided this information given by key informants. The insights from this study provided a deeper understanding of the digital technologies used by municipalities and the potential of mobile language learning applications. However, this study also has some limitations. Due to time constraints concerning the deadline of submission given by the university, only four interviews have been conducted. This means that it was not possible to gain more information from other language learning organisations than the two interviewed on the available and used mobile language learning applications. Moreover, many invitations for interviews were declined by language learning organisations due to tight schedules on their side. Furthermore, the findings of this study do not represent all municipalities in the Netherlands, since the interviews were held within the municipality of Overijssel. The interviewees were selected by convenience sampling.

6.2 Further research

The used digital technologies and perspectives on the potential of mobile language learning applications in this study are a result of interviews with municipalities and language learning organisations within the municipality of Overijssel. These perspectives and used digital technologies can differ per municipality and can be different from the rest of the Netherlands. Therefore, it would be useful to do a comparative case study on the used digital technologies and mobile language learning applications with other municipalities. This could provide more insight into what potential digital technologies and language learning apps can have from the perspective of other municipalities. Furthermore, this study focussed solely on the perspectives of the municipalities. Therefore, it is interesting for further research to investigate the perspectives of migrants on what the potential of mobile language learning apps is in learning a new language.

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