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Mobile Language Learning Designs and Contexts for Newly Arrived Migrants

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Abstract

The mobile phone has become an indispensable device for communication and managing everyday life among newly arrived migrants. Learning a new language is a crucial aspect of integration and professionalization in a foreign country, and the phone is a tool that is also used by migrants also for language learning. The purpose of this study is to investigate how mobile-assisted language learning (MALL) is situated in the context of newly arrived migrants from the Middle East in Sweden as a means to learn a new language. The designs and context of MALL apps used with migrants are explored from a pedagogical perspective and investigated by means of observations and interviews with migrants. The results show that there are difficulties with how MALL apps are used by migrants, as the apps are built on individualised drilling activities with vocabulary training which are neither motivating nor immediately connected to the everyday language learning needs of the migrants. However, gamification aspects built into the apps together with push notifications attract most of the users who do engage with the apps, and these aspects are incentives for building a routine around MALL app usage. The design around the content and functionality plays an important role in how learners make use of mobile applications.

Keywords: mobile-assisted language learning, MALL, newly arrived migrants, mobile applications, pedagogy of apps, motivation

Data Availability Statement: *All relevant data are within this paper.*

Introduction

The mobile phone plays a very important role in newly arrived migrants' abilities to stay connected with friends and family as well as in developing their networks, and managing everyday life (Gillespie, Osseiran, & Cheesman, 2018; Kaufmann, 2016). Learning a new language is considered a key element in professionalization, that is to say in transitioning into professional and everyday life in a new country (AlHammadi, 2016; DeVoretz & Werner, 2000). As a means of facilitating this transition, digital technology is increasingly used as a tool that can aid the integration of newly arrived migrants. It is thus relevant to understand how migrants use mobile phones when learning a new language (e.g., Bradley *et al*., 2020a; Kukulska-Hulme *et al*., 2015).

In recent years, the vast influx of migrants from the Middle East has put increased pressure on Swedish society to provide settlement, education, and work. To accommodate for these growing challenges, the development of digital literacy among newly arrived migrants becomes vital. In Sweden, digital literacy skills are well developed, with high levels of digital usage overall, practically covering the entire population (see The Swedish Internet Foundation, 2021). Such digital literacy often requires more advanced skills, including a heightened degree of language proficiency.

Although Swedish is part of the "less widely spoken languages" as it is spoken by only approximately 10 million people, the English skills of the population are quite high. However, newly arrived migrants frequently do not master either of these two languages (Authors, 2020). In fact, the lack of language skills has often been claimed to be an argument for why newly arrived migrants experience lower employment rates, lower incomes, and poor employment conditions, compared to native-born speakers (e.g., Bucken-Knapp *et al*., 2019).

The onset of COVID-19 has aggravated the migrants' situation because of the increasingly harsh competition they have to face in terms of education and work, affecting marginalised groups. Here, mobile learning as a mediator in career development has become an even more important tool for migrants, specifically as a tool to learn the new language (Kukulska Hulme & Pegrum, 2018). Thus, mobile-assisted language learning (MALL) plays a role for those who are engaging in ways to enter into the new society, where finding employment is a vital goal.

Furthermore, all newcomers to Sweden of working age are offered free Swedish courses in the national programme "Swedish as a Foreign Language" (SFI). In this programme, there is a certain amount of digital technology used in terms of learning management systems and online meeting systems that the participants need to access, a practice that has increased during the COVID-19 pandemic. Swedish classes, which used to be face-to-face, are increasingly being conducted online.

To understand how technology can play a role in overcoming challenges related to language learning for newly arrived migrants, we have conducted a series of studies with migrants from the Middle East in Sweden since 2015. Our investigations have focused on affordances (Norman, 1988) and designs of technology connected to learning a new language. In this study, we investigate how the design and context of MALL apps are perceived by newly arrived migrants and the implications that these apps have for migrants' language learning. For this purpose, two MALL apps are investigated.

Related Research

This section first introduces MALL apps as tools for learning. Then, studies on the use of MALL by newly arrived migrants will be reviewed. Finally, evaluation frameworks for MALL apps will be examined from a pedagogical perspective.

MALL Apps as Tools for Learning

First, the pedagogical aspects inherent in MALL apps should be connected to the needs of the users, which is also the case with newly arrived immigrants. In Kukulska-Hulme's (2012, 2017) conceptual framework for language learning, three dimensions of MALL are emphasised: time, place and activity. Since finding time and a place to engage with an app is connected to language learning activities, it is vital that the activities are relevant and worthwhile.

However, the language learning activities in apps still tend to have a focus on translation and repetition (Burston, 2014) and the properties of mobile phones that make it possible to connect users with other users are rarely used (Godwin-Jones, 2011), which is something that is done in the Busuu app where native speakers correct the language of learners (Dunwell *et al*., 2013). Even though mobile technology is becoming more ubiquitous and social, the pedagogical practices connected to its use are falling behind as "[p]edagogic models have suffered from a lack of response to the fluidity and fragmentation of language in a digital era" (Traxler *et al*., 2018, p. 399).

MALL with Newly Arrived Migrants

Several research and development projects have considered the role of the mobile phone as a tool for supporting immigrants. Two examples of such projects that were designed to immerse learners in everyday linguistic contexts are MASELTOV and SALSA (Jones *et al*., 2017). The team behind the MASELTOV project developed a range of integrated tools such as language lessons and a social forum providing a space for social support. The SALSA project consortium developed an app for learners studying English in adult continuing education classes that aims to complement their formal learning with informal learning in their everyday lives (Gaved & Peasgood, 2017).

The existing literature on newly arrived migrants' use of digital tools for language learning points to the fact that migrants may require additional guidance in the usage of digital learning sources. Certain learning traditions may differ culturally between those who are unaccustomed to online learning and those used to online learning, and the migrants' stressful situation might also impede their learning (Castaño Muñoz, Colucci, & Smidt, 2018). In addition, restrictions in the actual technology, such as dependence on Wi-Fi and a small screen size may be impediments for migrant learners (Gillespie *et al*., 2018). For migrants, linguistic diversity in relation to the use of mobile technology is brought up by Kukulska-Hulme and Pegrum (2018) who describe mobile learning as a tool to make sense of a bilingual world.

More broadly, digital literacy plays an important role when finding ways of learning about one's new society in, for instance, interacting with authorities and communicating with locals, watching language lessons on YouTube (Kaufmann, 2018), and language learning on WhatsApp (Aburezeq & Ishtaiwa, 2013; Meishar-Tal *et al*., 2020). Social media forums and groups play an important role in migrants' informal language learning outside of language classes, where learners share anything from words and phrases to cultural experiences that they would like to bring up. These tools fall under the app types that Rosell-Aguilar (2017) labels *apps not designed for language learning but useful for language learners*, such as Facebook, WhatsApp, and other communication channels. Two other types are *translation and dictionaries,* such as Google Translate and Lexin, and *MALL apps specifically designed for language learning*, such as Busuu and Duolingo. Within the latter type, there are apps that offer activities to develop different areas of language learning such as grammar, vocabulary and reading, as well as apps that are built on the idea of providing complete learning solutions in all areas of language learning and which are intended for self-study (Nielson, 2011; cf Authors., 2020).

Although there are a great number of language learning apps offered in a large number of languages, for non-English-speaking newly arrived migrant learners, such as Arabic speakers, the Arabic language is not included (e.g. Babbel, Busuu, Memrise). In addition, English is frequently the mediating language and for learners of less commonly spoken languages, such as Arabic speakers' learning Swedish, there is very little suitable content available, even in the world's most downloaded language app, Duolingo[1] (see e.g. Authors, 2018). However, Duolingo was mentioned in our interviews with newly arrived migrants as one of the most frequently downloaded apps and as outperforming other MALL apps in terms of usability (Al-Sabbagh *et al*., 2019).

Evaluating MALL Apps

Several frameworks have been developed for evaluating mobile learning from pedagogical and digital perspectives (Hubbard, 2019), some of which are specifically geared at MALL (e.g., Lee & Cherner, 2011; Martín-Monje *et al*., 2014; Reinders & Pegrum, 2017; Rodríguez-Arancón, Arús & Calle, 2013; Rosell-Aguilar, 2017; Son, 2016). These frameworks contain different evaluation rubrics connected to language learning aspects, such as feedback, engagement, and motivation. Although the frameworks contain criteria to be used when evaluating apps, they rarely fulfil every aspect of an app and miss out on some aspects, as claimed by Rosell-Aguilar (2017) who argues that the criteria are dependent on the circumstances of the users.

The framework by Rosell-Aguilar (2017) consists of a four-category evaluation scheme investigating language learning, pedagogy, user experience, and technology (see Appendix A for an overview of the entire matrix) and considering "the realities of current mobile apps" (Hubbard, 2019). Gamification is one of the aspects of technology that is frequently brought to the fore as a characteristic of MALL apps (see e.g. Domínguez *et al*., 2013; Gunter, Kenny, and Vick, 2008) and in which the users are claimed to benefit from being able to find out how they have progressed as well as from competing with themselves and sometimes others.

Concerning the evaluation of pedagogical aspects of *MALL apps specifically designed for language learning*, there are a few studies of the Duolingo app which point to mixed findings. Loewen *et al*. (2019) suggest that although an app can improve learners' knowledge of a second language, "claims made by commercial materials may be overstated" (p. 309), and it would be appropriate to include "more meaning-focused or task-based activities in which learners engaged in language beyond the individual sentence level" (ibid). This result also falls back on Krashen's (2014) studies of Duolingo, which argue that learners need to engage in subconscious learning to develop proficiency in a second language, rather than the conscious learning promoted in such an app. Further, with the RETAIN model, Gunter *et al*. (2016) suggest that although Duolingo contains gaming elements, the gameplay is centred on vocabulary and grammar, which are decontextualised from real-life situations and instead built upon rote memorization. In another study, Botero *et al*. (2018) question whether MALL can foster self-directed learning outside the classroom by exploring Duolingo, and in Authors (2020) interviews with learners show a lack of sustained motivation and thus low usag e of the app.

Problem and Research Questions

The rate of technological development is rapid, with new technological solutions constantly entering the market, not least escalated by the COVID-19 pandemic, online and mobile language learning have adapted to hybrid and online contexts. This has resulted in MALL apps being circulated by newly

1 Duolingo for Arabic speakers learning Swedish has been in the beta-version since November 2016 and the content is still claimed to be erroneous in places. Information was retrieved on 25 April 2022: https://duolingo.fandom.com/wiki/Swedish_for_Arabic.

arrived migrants to learn the new language of the host country. Although MALL apps designed for language learning are generally still founded on the same inherent principles of memorisation of words and phrases, newly arrived migrants' continued interest in using such apps is triggered by their desire to speed up the process of learning a new language, probably based on the app developers' promotional effort.

This study investigates how MALL apps are used by migrants and how they are designed as an attempt to motivate users to engage with them. In the context of newly arrived migrants attending a language learning programme in Swedish, this study answers the following research questions:

1. How are MALL apps used as tools for migrants' language learning in Sweden?
2. What MALL app designs match the language learning needs of newly arrived migrants in Sweden?

Theoretical Framing

For language learning, MALL enables personal and ubiquitous learning whenever time and opportunity calls for it (Kukulska-Hulme, 2009). Here, mobility is considered in the device, the learner as well as the learning context (Kukulska-Hulme & Pegrum, 2018). Connections created by mobile devices offer opportunities for language learning as the phone is always within reach in everyday life. However, this flexibility is also a challenge since engaging in sporadic activities on the go puts demands on learners to be dedicated and motivated, which affects learning as long as learners have not yet developed a routine for using MALL (Kukulska-Hulme & Pegrum, 2018). Further, there are tensions between the technological and pedagogical affordances of MALL apps. Burston (2015) suggests that because MALL projects are mostly technology-driven, technocentricity causes them to be geared at "a behavioristic paradigm involving rote learning and structuralistic tutorial exercises" (p. 16). This is one of the suggested reasons why several MALL apps provide exercises with tests rather than offering explanations or instructions and help sections connected to the users' language questions (Rosell-Aguilar, 2017).

Thus, designing an app that would guide the learner to fully immerse themselves in a self-directed manner is challenging. Here, the motivation that drives the user plays a vital role in learning (Al-Harthy, 2016; Deci & Ryan, 2008). This view is based on the assumption that an active learner is capable of finding ways of staying self-motivated and empowered (Castañeda & Selwyn, 2018) and supposes that engagement on the learners' part is something that drives learning (Laurillard, 2012).

MALL as Self-directed Learning

The language learning that takes place through mobile devices is largely geared at the user's ability and motivation to engage with learning in a self-directed way (see e.g., Botero *et al*., 2019; Garrison, 1997; Zimmerman, 1989). From this perspective, meaning and knowledge are personally as well as socially constructed. Here, "the learner exercises a great deal of independence in deciding what is worthwhile to learn and how to approach the learning task" (Garrison, 1997, p. 18).

Garrison's (1997) proposed model of self-directed learning includes the following three interconnected dimensions: self-management, self-monitoring, and motivation. The first dimension, self-management, focuses on external activities in the learning process and the enactment of learning goals. However, this dimension of learning is not necessarily an isolated experience but also something that happens in collaboration. The second dimension, self-monitoring, deals with cognitive and metacognitive processes of monitoring learning strategies in which "the learner takes responsibility for the construction of

personal meaning" (Garrison, 1997, p. 24). The third, motivation, plays a significant role in learning, where it is both important to be able to decide to participate and then to stay on task and be active and persistent in carrying through activities. Here, intrinsic motivation is essential for learning to become meaningful (Deci & Ryan, 2008). According to Entwistle (1981), "interest and intrinsic motivation are likely to foster a deep approach, and an active search for personal meaning" (p. 259). Motivation plays a significant role in all learning, with language learning being no exception (Dörnyei & Ushioda, 2011). Furthermore, motivation is geared towards integrative and instrumental motives (Gardner, 2001), which explains learning beyond mere aptitude for acquiring a new language. An example provided by Whyte and Holmberg, (1956, in Gardner, 2001) is migrant employees learning a language as an instrument to get the job done versus learning the language "as a means of establishing real bonds of communication" with other people (Whyte & Holmberg, 1956, p. 15).

In this study, we focus on the pedagogical aspects of MALL—the design and content when newly arrived migrants use MALL apps. Further, we focus on the motivational aspects of self-directed learning and on the activities inherent in the technology which have bearing on learning as well as on the context around the learners in the activities that are relevant for creating meaning and thus learning. This study also addresses self-management and self-monitoring (Garrison, 1997) which need motivation to be self-directed.

Method

This study is based on two cases investigating two apps used for language learning to meet the language learning needs of newly arrived migrants in Sweden. The context is MALL used as informal learning with migrants from the Middle East enrolled in beginner Swedish as a foreign language (SFI) courses. The studies took place with three years apart, in 2018 and 2020, respectively. In both cases, the migrants had not used a MALL app previously, since the objective was to investigate the users' first-time experience with a MALL app. The migrants' app use was followed up with interviews. In addition, interviews were also conducted with Swedish teachers and one director of studies at the SFI programme, as well as MALL app developers.

Context and Participants

The settings of the two cases were similar. The recruitment of participants was conducted by approaching SFI teachers in our existing networks in Sweden. The participating students, who had just enrolled in beginner Swedish, volunteered for the study and all claimed to be eager to learn Swedish quickly to be settled into the Swedish society and to get a job.

The participants were assisted in downloading a MALL app that they would be using for a period of four to five weeks as extra training outside of their Swedish class and then be interviewed about their usage (see Table 1). Burston (2015) suggests that these time frames are common within MALL implementation projects, showing that three quarters of the projects lasted four to six weeks. The prerequisites for participating were that the participants should be owners of a mobile phone.

All in all, there were 27 participants interviewed in our study (22 SFI newly arrived migrants, three SFI teachers and three app developers) (see Table 1).

The language represented by the 16 participating migrants in Case 1 was solely Arabic. In Case 2 the six migrants spoke Arabic (n = 3), Kurdish (n = 2), and Farsi (n = 1) (for an overview of the participants, see Appendix B). None of the participants had more than very basic English skills. Their language

Table 1 *Overview of the Two Cases, Settings and Participants in the Study*

Heading	Case 1	Case 2
Duration of case	Four weeks in 2018	Five weeks in 2020
Learning environment	SFI course in classroom. App outside of class	SFI online. App outside of class
Number of app users in SFI school	37	80
SFI students interviewed	16	6
SFI teachers interviewed	0	3
App developers interviewed	1	2

backgrounds were from languages with non-Latin writing systems. Concerning their educational and professional background, most of them only had primary education (n = 12) or lower secondary education (n = 8), and two participants had university degrees in business and marketing. Most participants (n = 12) stated various occupations and the rest were students (n = 5), or housewives (n = 5) when they left their home countries. They were all interested in learning Swedish to find a new place in society—education and work. However, none of them were particularly interested in language learning per se.

Regarding the gender aspect, the same overall number of men and women took part in the studies (n = 11 of each gender), with seven men and nine women in Case 1, and four men and two women in Case 2. However, our analyses show that there was no specific difference in MALL usage between men and women. Therefore, we did not proceed with this aspect in our analysis.

Analysis and Observations of MALL Apps

There are only a few MALL apps targeting professional development available for learning Swedish for those with language backgrounds from Middle Eastern languages. The two particular apps in our study were apps offering content for speaking, listening, reading as well as vocabulary training in Swedish for the target group. The two apps investigated were Duolingo and Lingio. In Case 1, the Duolingo[2] data were collected in 2018. In Case 2, in 2020, Lingio[3], a MALL app for practicing Swedish in the workplace, was introduced. The design of this app is similar to that of Duolingo.

The apps were not used as part of the activities in the Swedish class but were introduced as an opportunity to obtain extra language training for the students' own practice out of class. The Swedish classes were structured according to a national curriculum for Swedish as a foreign language, covering the four language skills—speaking, listening, reading, and writing (see Tables 2 and 3)—and grammar with content that was adapted to learners who had recently arrived in the country. The apps were a means to offer extra practice in understanding everyday language, mainly listening, reading, and speaking.

Interviews

The interviews with the newly arrived migrants were individual, semi-structured, and organised around two main points of discussion: i) their digital habits regarding technologies used overall and impressions from using MALL apps, and ii) their experience of MALL app designs and how apps met their expectations. Each interview lasted between 15 and 40 minutes. The interviews were audio-recorded

2 Duolingo, https://www.duolingo.com/
3 Lingio, https://lingio.com/

and subsequently transcribed verbatim with the purpose of capturing the fundamental meaning of utterances. Using a thematic content analysis, the transcriptions were coded and analysed, reporting repeated patterns of meaning according to the themes of the interviews, such as impressions from using MALL apps, participant expectations, and the language learning an app can provide. The interviews in Case 1 were conducted in Arabic and translated into English. In Case 2, the interviews were conducted in basic Swedish, supplemented by the native language of the participants with the support of interpreters. Although in both cases the migrants were beginner students in SFI, the participants in Case 1 had just recently arrived in Sweden and in Case 2 the participants had been in Sweden for a while and already knew some Swedish. Hence the different procedures around the interviews.

To obtain a broader picture of MALL use by newly arrived migrants, interviews were also conducted with three Swedish teachers who were teaching the SFI students, one of whom was also a director of studies in one of the schools (Case 2). The teachers were asked about the SFI-students' digital habits and what questions they received from the students about digital literacy. In addition, app developers were interviewed about how they had developed the MALL app and their experiences with the app. There were no interviews with SFI teachers in Case 1, as this dataset was built on newly arrived migrants' views from a bottom-up perspective.

Results

Concerning the digital habits of the participants, the two cases provided similar pictures. The migrants all spent time on their phones during the day. Computers were owned by only a few (12.5% (n = 2) in Case 1, and 0% (n = 0) in Case 2). In line with Rosell-Aguilar's (2017) definition of MALL app types, all but one participant used mobile communication channels, the most common being WhatsApp. The most used segment of MALL app types is translation tools, such as Google Translate and the Swedish translation app Lexin. Sixteen respondents used a translation tool on a regular basis, which represents just under 73% of interviewed students (62.5% (n = 10) in Case 1, and 100% (n = 6) in Case 2). However, the participants in Case 2 were naturally more used to online learning due to the COVID-19 pandemic and having to learn how to navigate in online environments to participate in Swedish classes. Furthermore, the outcomes are in line with results from our previous studies: practicing how to speak and engaging in everyday conversation is a commonly mentioned need by newly arrived migrants, who requested such features in mobile language learning technology (see e.g. Authors, 2019).

Analysis and Observations of Mall Apps for Language Learning with Newly Arrived Migrants

The two MALL apps contain a number of themes for users within various content areas, with a combination of exercises through text, images, and audio. The learning aspect is built on going through exercises, choosing items such as multiple-choice activities, filling in the blanks, rearranging content, or audio recording words and phrases with automated repetition of the recorded phrase by an electronic voice. Users are staged through exercises, reaching a point where the exercise is completed and a result appears with accumulated points before proceeding to the next level. This is the gamification aspect, which is promoted very strongly in the apps. Although the functionality differs slightly between the apps in terms of settings, the basic language learning features regarding the exercise design and functionality are quite similar in layout.

The two apps both offer content in the largest immigrant languages in Sweden, with Swedish as the target language. Hence, it is possible to avoid resorting to a third language – for instance English – which would not be possible for most of the participants, who do not know English. Thus, as pointed out by one of the interviewed Kurdish speaking migrants, since Kurdish is not an official language, it is difficult to find MALL apps that support writing and translation without going through a third language,

such as Arabic, Persian, or English (Participant 6, Case 2). In addition, the respondent also claimed that this is one of the reasons why it takes longer for Kurds to learn Swedish.

In sum, with MALL apps created specifically for language learning there is a notion that they consist of complete learning solutions intended for self-study (Rosell-Aguilar, 2017). Further, there are a few common design features in MALL apps specifically created for language learning, such as vocabulary and phrase training with multiple-choice questions, where the learner will progress through the programme on various theme levels, with gamification elements and scores of progress. The design, however, puts demands on users to stay active by working with features inherent in the app and not by the external language met in everyday communication. The user is requested to be highly motivated when using the app to work in an individualised way with words and phrases, which will be discussed in the following sections.

The App in Case 1

In Case 1, the app was used for four weeks, with follow-up interviews in Weeks 2 and 4. There was a significant drop-out rate among the participants in the study. Out of the 37 participants who gave their consent and signed up for the study and downloaded the app in Week 1, only 16 remained in Week 4. There were various reasons for cancelling participation, such as being absent from the Swedish class, and not having started using the app at all.

Regarding the 16 remaining participants in Week 2, 13 had used the app regularly, at least every second day, and in Week 4, the number had dropped to six participants. In Week 4, all participants were first interviewed about their backgrounds and digital habits. Then, they were interviewed about their general impression of the app, providing examples of their experiences, if it had met their expectations, and what they would like from a MALL app. The objective was to determine whether and how the app had motivated the users to learn more Swedish. The quotes are from the six participants in Week 4 to capture the views of those who had completed the entire study (see Appendix B). Although the quotes are from individual respondents, they are also representative of the respondents' views from the interviews from Week 2. Two of the six respondents were more positive in their attitudes towards the app (Participants 1 and 5) and four were more critical (Participants 2, 3, 4, and 6).

General impressions

The general impressions from using the app provided a mixed picture from the participants. The following quotes deal with the element of gamification, which is one of the criteria mentioned by Rosell-Aguilar (2017), with one participant seeing a more positive side to gamification and the other a more critical one:

> *First, I had a feeling that it was a normal app, then gradually I started feeling that it's like a fun game, a game and an app at the same time. (Participant 1)*

> *I know people who don't have the patience to play mobile app games to learn and would rather learn with a teacher. (Participant 2)*

The following quotes express how the design and content issues together with poor feedback within the app contributed to the lack of sustained interest in users:

> *The multiple-choice answers in the exercises were too easy and obvious. This was not very helpful to learn new words. (Respondent 3)*

> *There is repetition of old words after a few days. That is, asking me the same set of words that I have already passed earlier. (Respondent 4)*

The quotes indicate that memorisation of words and a focus on repetition are features commonly found in MALL apps that are not appealing to the participants.

Meeting users' expectations

Since the participants were new to MALL apps, their expectations were low. However, to the question of what was anticipated with the app, the participants provided examples of situations where the app could be used:

> *Sometimes when I am at SFI, I open the app while I am in class to revise a few words. (Respondent 1)*

> *It helped me distinguish between different types of meats, in Swedish. Fläskkött, lamkött, [pork, lamb]. (Respondent 5)*

Language learning an app can provide

To the question of what the participants would like a MALL app to provide, a common answer was content connected to concrete real-life situations:

> *It would be helpful if there was a learning course for the driving licence. (Respondent 2)*

> *To be able to tell my teacher why I can't make it to class tomorrow, or how I can study what I missed in class. Or in case of an emergency to explain to the ambulance or other people the what where and why. (Respondent 5)*

The respondents claimed that the built-in words did not always fulfil the needs of the users:

> *I would like the content to be interesting, not some random words. (Respondent 4)*

The next example shows that the app's connection to concrete use is lacking. The respondents found that an app where they could not control the content themselves, was not that useful:

> *We can use it over chat online with a friend, but we can't use it in our daily lives. (Respondent 6)*

In fact, the participants had to come out of the app to find what they were looking for:

> *I can't make use of it in a specific dialogue. I feel that Lexin* [a translation app] *is easier to use when I need to understand or say something to people. (Respondent 2)*

The responses of those who were demotivated to use the app show that the learners expected a MALL app to be situated in their own language learning context, with immediate benefits of use. Since the app was used outside the SFI course, it contributed to demotivation to use the app.

The app claims to offer language learning via self-study of a new language. Investigating the design and content of the app through the framework of Rosell-Aguilar (2017), Table 2 shows the most

prominent criteria in the app, compared with the SFI course. For a more extensive comparison, see Appendix A.

The App in Case 2

In the SFI-school in Case 2, 80 signed up, gave their consent and were registered users of the Lingio app during a period of four months. The app was pushed out to the users via SMS, and logging of the usage (time spent on the app and number of finished exercises) was kept by the director of studies, who was managing all the users. The loggings showed that 50% of the participants were regular users of the app logging in more than twice a week, 25% were occasional users, logging in on average every second week and 25% were not using the app at all, they had only downloaded it but never started using it.

We conducted interviews with six SFI students from the Middle East who were registered users of the app. The objective was to determine whether and how the app had motivated the users to learn more Swedish. From the usage log, we selected six random participants for interviews. They all accepted, and the interviews took place, via Zoom due to the COVID-19 pandemic, after they had had access to the app for five weeks. Two participants used the app on a regular basis several times every week (Participants 1 and 2), two used the app occasionally (Participants 4 and 5) and two did not use the app at all (Participants 3 and 6), although all six participants claimed they were using the app (see Appendix B). The logging of usage was not shown to those interviewed. The participants gave examples of their experiences with the app, a procedure similar to Case 1: general impression of the app, providing examples of their experiences, if it had met their expectations in what they had anticipated that the app would be like, and what they would like from a MALL app.

General impressions

The overall impressions of app users were positive. They all claimed that they liked it and that it was useful. However, one of the participants found some words difficult. Continuous push notifications via SMS to the users encouraged engagement with the app, where gamification was promoted as a way forward: ‘Play at least 10 rounds each week. We know that it will pay off’ (SMS generated from the app). This was also claimed by two of the participants.

> *I play every day for half an hour. For me Lingio is good. (Participant 1)*
>
> *I play many times a day, during breaks and during lunch. When I have some spare time I play on Lingio. (Participant 2)*

Table 2 *Main Features of Duolingo in Relation to the SFI Course (Based on Rosell-Aguilar, 2017)*

Heading	Duolingo	SFI course
Language learning	Speaking, listening, reading, vocabulary	Speaking, listening, reading, writing, grammar
Pedagogy	Tracking progress but not explaining language	Explaining language and providing feedback
User experience	Not allowing users to interact	Allowing users to interact
Technology	Gamification	No technology used

In the next quote, the participant praised the app:

> *To me, Lingio is very good. It has a lot of information that you need when you come to Sweden. (Participant 3)*

This participant was in the category of users who had not used the app. We commonly found that the users in this category claimed to have used the app although the logging showed otherwise (also see Teachers' and developers' views below).

Meeting users' expectations

To the question about how the app met anticipated expectations, those two who were regular users of the app expressed positive views. In the following quote the inherent methodology of the app is exposed, i.e. that the users follow a track with a start and finish of each exercise themes:

> *I have done all exercises. I think it is very good. I have learned many new words. Now I am finished with all. (Participant 2)*

The example shows the intended linear path the users take from one exercise to another, and that eventually the app notifies that they are finished.

Interestingly, the following participant was one of those who had not used the app but who provided a statement of what was learned through the app:

> *For me, Lingio is very good. I have learned how to write words. (Participant 6).*

The interviewed teachers also reflected that it was remarkable that students claimed to have used the app, but in reality, did not use it.

Language learning an app can provide

There are a number of examples from the participants of how the app can contribute to their language learning. However, some of the answers were not about the app but about the Swedish course. An example is grammar explanations, which were not included in the app. However, the participant claimed that you learn how to make verbs in the past tense:

> *I have learned many new words and to write letters and how you make verbs in the past tense. (Participant 5)*

Common suggestions, apart from learning new words, are how to understand and speak Swedish. However, the following quote also provides additional information, which shows that the app cannot provide translations of words within the app. Here users need to leave the app:

> *I play about 3 times a week for 10-15 min. I can learn how to listen and speak.* [he plays two words 'a potato', 'a bus stop']. *I look up words I don't understand in Google Translate. (Participant 4)*

As in Case 1, the app was not integrated into the SFI course, which explained the lack of usage among those participants who were sporadic users of the app or who did not use it at all. However, some used it frequently.

The app claims to be offering language learning as a self-study of a new language, just like the app in Case 1. Investigating the design and content of the app through the framework of Rosell-Aguilar (2017), Table 3 shows the most prominent criteria in the app, compared with the SFI course (which was online due to the COVID-19 pandemic). For a more extensive comparison, see Appendix A.

Teachers' and Developers' Views

Interviewing three teachers and three app developers about their perceptions of an app used by newly arrived migrants provided an enhanced picture of app usage.

The teachers verified the students' positive views around the circumstances of the app in Case 2, finding that the app was appreciated by the students. However, the teachers emphasised that an app or other technology can never replace classroom teaching with newly arrived migrants, as there are many cultural dimensions in the language classes that need teacher interaction. Nevertheless, the teachers claim that since the app provides vocabulary related to different professions, students who have a clear professional goal after the Swedish course may benefit from using the app more than from a general Swedish course book.

A noteworthy point that was raised by the teachers is the fact that the SMS messages which are regularly pushed out to the users from the app were appreciated by the students as some of them claimed they were 'seen' by (what they presume is) the teacher. However, the teachers had nothing to do with these notifications which were autogenerated by the app. Nevertheless, any kind of feedback is an important element in the SFI-teaching context which is highly individualised. The teachers suggested that they may make use of this situation which may well be superficial but is still a type of feedback from the app that is in line with the view that any feedback has the potential to be useful.

The teachers claimed that the content that the students encounter in the app exercises was hard to grasp, as the app generates random exercises from a database. The teachers reported that when discussing the content with the students, many students claim that they have learned a lot from the app, when some had in fact not been using the app at all. This is a reflection that the teachers found fascinating and as one of the teachers speculated (the teacher being the director of studies),

> *What drives the students to use the app is perhaps the feeling that someone has produced an app designed for me to learn Swedish. This is a very considerate thing and therefore students may feel an urge to say that they use it. But it's not always easy to see or know what motivates a user. Some seem to have their own drive.*

Concerning the app developers, two of whom are language teachers, their original idea was to contribute to support newcomers to Sweden. Since the onset of our studies in 2015, the design of the two

Table 3 *Main Features of Lingio in Relation to the SFI Course (Based on Rosell-Aguilar, 2017)*

Heading	Lingio	SFI course
Language learning	Speaking, listening, reading, vocabulary	Speaking, listening, reading, writing, grammar
Pedagogy	Tracking progress and keeping users engaged	Explaining language and providing feedback
User experience	Not allowing users to interact	Allowing users to interact
Technology	Gamification	Intuitive technology used

MALL apps has remained the same and the development has focused on refining pronunciation feedback with AI technology. Like other MALL apps designed for language learning, the apps are built upon a gamification concept in which the user will go into the app and do exercises that will generate scores. To the question about those learners who are curious to go outside of the app to find more, there is an inherent limit in the design and content of the apps in their current state. Therefore, it was claimed by one of the developers that a MALL app is geared towards users who are not too curious to go outside the track of the app.

The incentive from the developers' part is to provide an app with attractive content, which has a high number of sustainable users. They recognize that learning takes place through collaboration, however, the main idea with the app is not to engage with others but instead to be a sole user. Although attractive design and relevant content can draw users to the app, the design of the activities in the app, from a pedagogical perspective, is still founded on behaviorist theories of learning with drilling activities where right or wrong answers are presented to the users.

The results show that there are recurrent tensions between how mobile language learning tools are set up as additional practice in SFI programmes and the actual needs of the migrants. The specific mobile language learning apps available are rarely used as much as anticipated and when not used regularly as a routine, it also affects learning (Kukulska-Hulme & Pegrum, 2018). The design around the content and functionality plays an important role in how learners make use of mobile apps although there is a long way for developers to embrace pedagogical aspects that would be attractive for learning, which will be discussed in the next section.

Discussion and Conclusion

Mobile phones are used ubiquitously, and learning with MALL apps has become widespread among users who want to learn a new language. Newly arrived migrants who attended Swedish classes expressed an interest in learning the Swedish language to be able to enter the Swedish labour market, i.e. in their professionalization process, and Swedish society. They all had smartphones and were keen users of social media and other means of communication. Downloading and accessing a MALL app for them was not an issue. What was more of an issue, though, was the pedagogical approach of the apps, which were based on content transmission dressed up in gamified interfaces. There were complications in finding the motivation to use apps for extended language learning practice outside of the Swedish classes with a MALL app that is built on learning vocabulary and phrases by repeating them and doing tests within the app.

Regarding the first research question of, *How are MALL apps used as tools for migrants' language learning in Sweden?* the analyses showed that acquiring additional phrases from the app added to their new vocabulary, and that the gaming elements were considered beneficial to some. To others, the app was not as motivating to use, since they did not have the patience to engage with repetitive exercises and content that they could not choose.

In language learning, the feedback element is specifically important. To the migrants, the feedback embedded in MALL apps is less meaningful that what is found in translation apps. However, the auto-generated SMS messages in Case 2, which were sent out regularly and formulated in a personal tone, encouraged the learners to use the app. The messages that the students thought was sent by the teacher, requested the users to play with the app, a feedback practice that was appreciated by the students.

Concerning the second research question, *What MALL app designs match the language learning needs of newly arrived migrants in Sweden?,* our analyses revealed a few discrepancies between the needs

of migrants and the features offered by the MALL apps. The migrants were used to social media platforms, and in the MALL apps, interaction was lacking due to the apps' fixed design and content. The need to look up new words met in communication with others is a feature requested in an app, hence the reason why translation apps are frequently consulted. The app content's decontextualised design was unsatisfactory. In addition, the content was not connected to the language learning curriculum in the SFI course, which rendered the use of the app in relation to the SFI course less relevant.

According to Gardener (2001), there are a number of aspects that affect the possibility of learning a new language, such as attitude, language aptitude, and motivation. For those who involuntarily need to learn a new language in a new society, there are several hurdles to overcome. Being a newly arrived migrant in a country with a new language to master, there are multiple issues when the native language and the new language differ in every respect, from alphabet and pronunciation to grammar and vocabulary. Although it would be assumed that the motivation to learn the language is strong in order to be integrated into the new society, it is hard to obtain integrative motivation, which is what Gardner (2001) suggests to be "a genuine interest in learning the second language in order to come closer to the other language community" (p. 5). Here, MALL has been acknowledged as a mediator with the potential to engage learners in overcoming language learning hurdles, and MALL evaluation frameworks provide a number of criteria that are favorable for language learning. Although user-driven aspects embedded in MALL apps, such as gamification mechanisms and diversified training materials seem to appeal to users among the newly arrived migrants we interviewed, in fact, only a few actually used the MALL apps. There are other mechanisms that drive perspectives on MALL that are connected to social aspects, such as the fact that people feel seen when notifications are pushed out to users, and above all, that there is a tool created where the users' first language is used—for instance Arabic or Farsi—to learn the new language, in this case Swedish.

Turning to Garrison's (1997) model of self-directed learning, for learners to be able to self-manage and self-monitor learning processes, this entails being aware of both the learning process and goals, where learning is not seen as an isolated experience. For the third dimension, motivation, it is hard for learners who are involuntary second language learners to stay active and persistent with a MALL app. The demands of such an app are high. Garrison (1997) defines self-directed learning as "an approach where learners are motivated to assume personal responsibility and collaborative control of the cognitive (self-monitoring) and contextual (self-management) processes in constructing and confirming meaningful and worthwhile learning outcomes" (p. 18).

As stated by Burston (2015), there is every reason to anticipate that MALL apps can contribute to improving language learning, due to such reasons as the possibilities of increased time spent on MALL activities out of class and promoting communication and collaborative interaction in the second language. However, "technocentricity is largely responsible for the lack of pedagogical innovation and failure of even the most recent MALL projects to exploit the communicative affordances of mobile devices" (Burston, 2015, p. 16).

In terms of MALL technology that would speed up the language learning process, the migrants and their language teachers alike asked for additional digital learning resources that the students could use outside of class as extra training material. However, this unspoken wish to find technology as a quick fix to a very complex situation resulted in disappointment among the migrants.

Digital language learning with migrants is a field still in need of further research supporting its impact (Castaño Muñoz *et al*., 2018; Demmans Epp, 2017). In our study, the newly arrived migrants attending Swedish classes who had expressed an interest in learning Swedish to professionalize and enter the labour market found little motivation to use the app in a self-directed way. There is a large gap between

making use of an app and being self-directed in learning with an app, "to think critically and construct meaning in ill-defined and complex content areas" (Garrison, 1997, p. 21).

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Appendix A

Main features of the two apps based on the framework of Rosell-Aguilar (2017) in relation to the SFI course from the interviews. The SFI course context in Case 1 is classroom teaching whereas in Case 2 it is online due to the COVID-19 pandemic.

	Duolingo	SFI course Case 1	Lingio	SFI course Case 2
Language learning				
Reading	yes	yes	yes	yes
Listening	yes	yes	yes	yes
Writing	no	yes	no	yes
Speaking	yes	yes	yes	yes
Vocabulary acquisition	yes	yes	yes	yes
Grammar practice	yes	yes	yes	yes
Pronunciation & intonation	no	yes	no	yes
Customs and traditions	yes	yes	yes	yes
Images & videos	yes	yes	yes	yes
Regional or national varieties	no	n/a	no	n/a
Pedagogy				
Description matching the content?	no	yes	n/a	yes
Presenting, explaining language?	no	yes	no	yes
Tracking progress?	yes	yes	yes	yes
Progression in difficulty supporting learner?	no	n/a	n/a	n/a
Providing feedback with meaningful explanations?	yes	yes	yes	yes
Errors in content?	yes	yes	yes	yes
Making use of sound, images and video?	yes	yes	yes	yes
Offering different levels depending on ability?	yes	yes	yes	yes
Keep user engaged and interested?	yes	yes	yes	yes
User experience				
Allowing users to interact with each other?	no	yes	no	yes
Engagement with active content?	inconclusive	yes	inconclusive	yes
Encouraging to share content?	no	yes	no	yes
Provide recognition to share on social media?	n/a	n/a	n/a	n/a
Payment for students?	no	no	no	no
Registration?	no	yes	yes	yes
Technology				
Clear interface?	yes	n/a	yes	n/a
Intuitive navigation?	yes	n/a	yes	yes
Offering instructions how to use it?	n/a	n/a	n/a	yes
Freezing or crashing?	no	n/a	no	no
Game-like features?	yes	n/a	yes	n/a
Help section?	n/a	n/a	n/a	n/a
Requiring internet connection?	yes	n/a	yes	yes

Appendix B

The newly arrived migrants in the two cases. In Case 1, the first six participants who used the MALL app Duolingo regularly received specific interview questions about the app, and in Case 2, all six participants were interviewed about the tested MALL app, Lingio.

Participant ID	First language	Gender	Age	Education	Occupation	App used in study
Case 1						
1	Arabic	Woman	29	Basic schooling	Housewife	Regularly 4 weeks
2	Arabic	Woman	35	Basic schooling	Hairdresser	Regularly 4 weeks
3	Arabic	Man	42	Secondary school	Free trades	Regularly 4 weeks
4	Arabic	Man	34	Basic schooling	Ceramist/tiler	Regularly 4 weeks
5	Arabic	Man	35	University BA	Marketing manager	Regularly 4 weeks
6	Arabic	Woman	38	Secondary school	Student	Regularly 4 weeks
7	Arabic	Woman	43	Secondary school	Kindergarten teacher	Regularly 2 weeks
8	Arabic	Woman	36	University BA	Student	Regularly 2 weeks
9	Arabic	Woman	22	Basic schooling	Housewife	Regularly 2 weeks
10	Arabic	Man	31	Secondary school	Electrician	Regularly 2 weeks
11	Arabic	Man	30	Basic schooling	Shoe salesman	Regularly 2 weeks
12	Arabic	Woman	49	Secondary school	Office worker	Regularly 2 weeks
13	Arabic	Woman	25	Secondary school	Student	Regularly 2 weeks
14	Arabic	Man	18	Basic schooling	Student	Only first week
15	Arabic	Woman	23	Secondary school	Housewife	Only first week
16	Arabic	Man	42	Basic schooling	Restaurant waiter	Only first week
Case 2						
1	Arabic	Woman	40	Basic schooling	Housewife	Regularly every week
2	Arabic	Woman	36	Basic schooling	Housewife	Regularly every week
3	Arabic	Man	37	Basic schooling	Taxi and lorry driver	Occasionally
4	Farsi	Man	43	Secondary school	Factory manager	Not used the app
5	Kurdish	Man	34	Basic schooling	Student	Occasionally
6	Kurdish	Man	26	Basic schooling	Various jobs	Not used the app