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TECHNOLOGY-SUPPORTED L2 LEARNING IN LESLLA CLASSES: TWO CASE STUDIES FROM FINLAND

Taina Tammelin-Laine
University of Jyväskylä, Finland
taina.tammelinlaine@icloud.com

Heidi Vaarala
University of Jyväskylä, Finland
heidi.vaarala@jyu.fi

Jenna Savolainen
University of Jyväskylä, Finland
jenna.k.e.savolainen@jyu.fi

Minna Bogdanoff
University of Jyväskylä, Finland
minna.k.bogdanoff@jyu.fi

Abstract

Digitalized environments are becoming increasingly ubiquitous, which means that digital literacy is essential for everyone, including LESLLA learners (e.g., Reder, Vanek, & Wrigley, 2012). This paper focuses on two qualitative sub-studies carried out in a Finnish context. The data for this study consist of (a) interviews of ten LESLLA learners, and (b) responses to an online questionnaire with open-ended questions from ten LESLLA teachers. We discuss, for example, the learning opportunities that the use of digital devices and applications, especially the use of smartphones, offers learners, and teachers' thoughts on the use of technology in LESLLA classrooms.

The underlying approach in the sub-studies is sociocultural theory (Vygotsky, 1978). Overall, we consider how to scaffold the development of the learners' language skills with the support of technology. We also discuss the different social and semiotic digital practices (e.g., Thorne, 2013) used in literacy classes. It is important to teach LESLLA learners digital skills, while considering each learner's specific skill level. Additionally, the existing skills of LESLLA learners in using applications should be connected to formal classroom teaching in a pedagogically reasonable way.

Literacy Skills and Digitality

Finland is often described as an educational wonderland where literacy and other basic skills are generally mastered. However, according to PIAAC 2012, approximately 11 percent of Finnish adults have emerging basic skills, many of them immigrants (Malin, Sulkunen, & Laine, 2013).

Grabe and Stoller (2011) propose that literacy skills are connected to social practices and a certain time and a place; furthermore, literacy skills change alongside technological advances, and each society has different needs when it comes to literacy. Kupiainen and Sintonen (2009) suggest that in recent decades, most countries have undergone a transformation to become digital information societies, and the role and nature of literacy skills have changed together with the sociocultural reality that surrounds them. Today, for example, using an online service to manage one's personal finance matters is often mandatory.

Literacy Learners and Literacy Teaching in Finland

According to Official Statistics of Finland (2020), at the end of 2019, the total population of Finland was approximately 5.53 million. The share of foreign-born people was 7.3 percent, a small number when compared to many European countries. Among the six most common foreign languages in Finland are Arabic, Somali, and Kurdish, and many literacy learners are speakers of these. In 2014, Nieminen, Sutela, and Hannula (2015) estimated that approximately 5,000 immigrants living in Finland had a maximum schooling background of three years. This number has presumably increased alongside the number of immigrants. Even though schooling background and literacy skills should not be confounded, UNESCO Institute for Statistics (2020) shows a clear overlap.

Since 2018, there have been two types of literacy training programs in Finland, each with different aims and target groups. First, there is literacy training organized as a part of basic education for adults, which entails full-time study and aims at the completion of basic education and eligibility for further studies in high school or vocational education. The main target group of this training is young adults.

Second, the target group of literacy training organized by institutions for liberal adult education consists of immigrants who need flexible and/or part-time studying opportunities (e.g., stay-at-home parents and the elderly) or those who may benefit from more activity-based learning (e.g., adults with possible learning problems). For more on literacy training in Finland, see Finnish National Agency for Education (2018).

Literature Review

LESLLA Learners as Users of Digital Tools

These days, the use of technology is essential for everyone, including LESLLA learners, as many of the daily life literacy practices and second language learning occur in digital environments instead of printed ones. Because of that, digital literacy must also be seen as an important part of literacy instruction of LESLLA learners (see Reder et al., 2012, p. 48). Since the 1990s, several studies have focused on LESLLA learners as computer users (e.g., Wrigley, 1993; Van Rensburg & Son, 2010; Strube, 2013; Kennedy, 2015). In recent years, LESLLA learners and digital literacy has also been in the focus (Reder et al., 2012; Vanek, 2019), and Smyser (2019) even suggests that digital literacy can help LESLLA learners overcome challenges related to becoming print literate. The following studies, in turn, are examples that discuss the use of mobile devices by LESLLA learners in an L2 learning context, which is even more relevant for this paper.

According to Kananen (2019), LESLLA learners utilize different compensation strategies, such as using the icons to navigate in online banking applications. In Schiepers and Van Nuffel (2017), the focus is on WhatsApp for workplace language learning while Bigelow, Vanek, King, and Abdi (2015) discuss the ways the use of one's native language in Facebook groups supports the development of academic literacy skills in English. Earlier research also shows that, for LESLLA learners, using a mobile device is less challenging than using a computer (Smyser, 2019; Bogdanoff, Vaarala, Törmänen, & Tammelin-Laine, 2018; Bacishoga & Johnston, 2013).

Digital Skills and Digital Literacy

The existing definitions for digital skills and digital literacy differ significantly according to the source, and many of them have been

created from the perspective of literate users of digital devices. According to UNESCO (2018, p. 6), "Digital literacy is the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital technologies for employment, decent jobs and entrepreneurship. It includes competences that are variously referred to as computer literacy, ICT literacy, information literacy and media literacy." Reder et al. (2012, p. 59) give an important addition to this from the LESLLA perspective by amplifying that "in order to participate in technology infused cultures, all learners need a basic sense of how to access technology, how to navigate a web site and how to defend themselves against the onslaught of unreliable information and unsolicited products and services." Additionally, Vanek (2019) suggests that when LESLLA learners are learning to use digital devices they practice both digital skills, digital literacy, and the useful words and concepts in the second language; language skills become embodied in the process, and they are tightly intertwined with digital skills.

Our views on digital skills and digital literacy are based on the definition suggested by UNESCO (2018), which we have modified according to the suggestions by Reder et al. (2012) and Vanek (2019). In this paper, the ability to access information is seen as basic digital skills such as logging in and out of devices and services as well as knowing how to use a touch screen, while the ability to manage, understand, integrate, communicate, evaluate, and create information refers to digital literacy, for instance, for online banking and sending and receiving messages.

Existing research shows that many LESLLA learners have a smartphone and are very skillful users of it (e.g., Smyser, 2019). However, there is a clear need for research-based knowledge on the role of smartphones in teaching and learning digital literacy and L2. This paper addresses this gap in the research field from a Finnish point of view. The first sub-study concentrates on the learning opportunities offered by the use of the voice function in smartphones to LESLLA learners (RQ1), while the focus of the second sub-study is on teachers' views on LESLLA learners' digital literacy and digital skills (RQ2.1) as well as teachers' thoughts about using technology in literacy classrooms (RQ2.2).

The Present Study

Theoretical Framework

The theoretical background of the sub-studies is founded on sociocultural theory, especially its key concepts of *zone of proximal development (ZPD)* and *scaffolding* (see Vygotsky, 1978). Vygotsky developed this approach originally for understanding children's cognitive development, which requires taking into account the social and cultural context where the development takes place. ZPD refers to a learner's level of development, on which they can handle a task with the support of a more skilled partner but not independently. Scaffolding, the pedagogical and interactive tool, is strongly related to ZPD.

Another concept related to learning is *affordances*. Affordances are relationships that provide a "match" between something in the environment and the learner (van Lier, 2004, p. 98). Smartphones can function as such affordances in the student's environment: they afford flexibility, on-demand retrieval, and access to resources for language learning. Affordances can then refer to the ways the learner takes advantage of the smartphone platform and, for instance, applications for learning languages.

Context

Both sub-studies have been implemented in the context of basic education for adults in Finland: the participants in sub-study 1 were students in one institution, while the participants in sub-study 2 were working as teachers all over the country.

Participants and Data Collection

The data of sub-study 1 consist of ten interviews of adult literacy learners. Five of the interviewees were men and five were women, and they were 22–52 years old. The backgrounds of the participants varied widely: they had lived in Finland from six months to ten years. Some had attended school for several years in their countries of origin and could read in their L1s or in their languages of education, whereas some were learning literacy skills for the first time in their lives. The participants of the first interview had studied in the same literacy class for three months, whereas the students who participated in the second interview had studied together for three weeks.

During the interviews, we asked the participants to tell and show us how they use their smartphones and the applications. We audio recorded the discussions and took photos of the screens and the applications that the participants were using as they explained what they did with their phones. The phones were also in actual use as they received messages and phone calls during the interviews. This took the interviews in a more authentic direction.

The data of the second sub-study is comprised of anonymous responses to an online questionnaire with twelve open-ended questions from ten teachers working in basic education for adults. No background information was collected. The questionnaire was created with the Webropol 3.0 survey and reporting tool (Webropol, 2020) and shared to several Facebook groups aimed at literacy teachers. The Finnish questions and responses have been translated for this paper. The aim of using a questionnaire as a data collection method was to get information about the use of technology in literacy classes from a large number of teachers. Because of the low number of responses, the findings cannot be extrapolated to the general group of literacy teachers, but they give some suggestive ideas.

Data Analysis

The data analysis method used in these qualitative sub-studies was thematic content analysis (Tuomi & Sarajärvi, 2018). In sub-study 1, two researchers examined the transcribed interviews and the students' multimodal texts (screenshots, WhatsApp discussions, text messages, photos, edited photos, photos of applications). We focused on the extracts where the interviewee was mentioning the voice function of the application and compared our findings. In addition, we tested the applications they used to see how they functioned and what kinds of activities they were used for. We combined and examined the information from the students' multimodal texts with the interview responses. In doing so, we found contextual cues that helped us to understand better the literacy practices the students had. In this paper, we zero in on the findings related to a single salient literacy practice elucidated in the data – voice functions. At first, we analyze the device preferences of the LESLLA learners (Finding 1). In more detail we focus on the possibilities the use of smart phone offers for problem-solving (Findings 2 and 4) and language learning (Findings 2 and 3).

In sub-study 2, the responses of the online questionnaire were coded and analyzed by one researcher with the help of ATLAS.ti software. First, the responses related to the teachers' views on (a) their student's digital (literacy) skills and (b) the use of technology in the literacy classroom, were separated from the full data and divided under themes (a) and (b). Then, similarities and differences between the responses were identified. Finally, possible effects of the expressed views on literacy teaching in practice were considered.

Researcher Positionality

In sub-study 1, we had to consider our positions as researchers and questions about research ethics carefully, since the participants were adult literacy learners with whom the only shared language was Finnish. Naturally, the students could opt out of the study at any time, and the group's teacher had discussed the study with the students beforehand, so they would feel comfortable in the interview. Since we did not have a chance to have interpreters present during the interviews, we prepared the research consent forms in easy Finnish to match the language skills of the interviewees. Additionally, we discussed the study with each participant before the interviews to make sure they knew what our purpose was. During the interviews, the cooperation between two researchers helped gain mutual understanding with each interviewee.

As for sub-study 2, the researcher's experience as a literacy teacher supported the data analysis by giving some additional background knowledge from the field. Only a few questionnaire responses were ambiguous, which reduced the possibility of misinterpretation.

Findings and Discussion

Sub-Study 1

This sub-study focused on the learning opportunities offered to LESLLA learners by the use of the voice function in smartphone applications. The learner interviews were conducted by two researchers, whose code names are R1 and R2 in the following excerpts. The code name P (e.g., P10) refers to a student-participant, whereas S refers to a smartphone that was used during the interview. The transcription conventions appear in Appendix 1.

Finding 1: Device Preference

Our first and elementary observation was that the students said they mainly used smartphones instead of PCs or tablets. All the interviewees had a smartphone but only one of them had a tablet. Two mentioned that they had a PC at home, but the other one said that only her husband actually used it. In the school, the use of PCs was limited to two hours a week in ICT (information and communications technology) lessons. During some lessons, they also used smartphone applications, but according to the students, the school's slow internet access slowed down the use of them. They also commented that using the smartphone was easy, although writing in Finnish with it was demanding. However, the smartphone and multimodal applications offered the student different possibilities for emergent and experienced writers alike.

Finding 2: Use of Voice Commands and Voice-Activated Functions

The voice is an important element in different applications as well as in social media. Voice-enabled technology reduces the need for reading and writing, since applications can be activated with voice commands (Patel, Ormandjieva, & Pitula, 2020). This kind of technology does not replace literacy skills, but especially at the beginning of learning to read and write, it is useful in everyday practices and it supports language learning.

Different voice commands and voice-activated functions were widely used by the students. For example, the students sent voice messages to each other in the WhatsApp group chat created by the teacher. Voice messages can be recorded and sent directly in the WhatsApp application. During the interviews, the learners showed us applications and webpages based on voice and moving images. The students and their families used YouTube to watch videos and children's programs and listen to music from Finland and from their home countries. These kinds of activities are beneficial in L2 learning (e.g., Chik & Ho, 2017).

One student-participant described their use of Google Translate and its voice-based features for interpreting and writing messages. They said that with the application, it is possible to translate messages written in Finnish and listen to them in their L1, since Google Translate can transform written text into speech. On the other hand, the student is also able to write messages in Finnish by first dictating

the message in the application in their L1 and then allowing the application to transform the message into Finnish text. However, in Excerpt 1 the student (P10) says that they tend to avoid using Google Translate every day, because they have a strong motivation to learn and challenge themselves by not relying on smartphone applications:

Excerpt 1. (January 31, 2019, interview)
R1: do you use translator every day. or
P10: not every day
R1: not every day. yeah
P10: no I want to talk, I want to self-
R1: do it yourself
P10: learn, yes

The use of voice appears to be an important tool in problem-solving for adult language learners. Thus, it is important to practice using different voice recognition translators and online dictionaries in the classroom.

Finding 3: Language Learning Supported with Voice-Enabled Applications

The student-participants used language learning applications and games on their smartphones. Their teacher was also aware of the learning possibilities of different applications and had created a WhatsApp group for the students. There was variation in how actively the students used the applications.

In Excerpt 2, a student is demonstrating how they use Quizlet (a digital flashcard and learning game application) to learn Finnish:

Excerpt 2 (May 16, 2018, interview)
R1: quizlet okay.
R2: um wait this [is the teaching material.
P4: [mm.
R1: did the teacher put. ((noise from the smartphone))
P4: yeah.
R2: what's on there.
S: ((I am hungry))
P4: I am hungry.
R2: what else have you got there.

P4: I am thir- thiirsty.
R2: listen- can list[en.
P4: [yeah.
S: ((I am thirsty))
R2: all[right.
P4: [it's easy.
R2: that's nice.
P4: I have, the flu.
R1: m[m.
R2: [wow you speak well.
S: ((I have the flu))
P4: [mh.
R2: [right.
P4: I have a clough [sic]. clou- clough yeah.
R2: mhm.
S: ((I have a cough))
P4: cough. I has hot.
S: ((I am hot))
R2: good.
P4: I can.

It is worth noting that the learner said the very practical phrases first in Finnish and then played the recording created with the application. This illustrates that the student had already learned the phrases, although the process is still ongoing, and the language chunks will develop further. Clearly, the learner was pleased to demonstrate their language skills and wanted to let the researchers know the task was simple by saying "it's easy", and later shows their satisfaction with their skills by stating "I can".

However, not all language learners take advantage of the affordances offered by voice-based applications. When discussing the language learning game called Ekapeli, one of the students said that because chores like cooking and cleaning take so much of their time, there is little time left for playing, so they let their children play the game instead. Perhaps some learners do not see games as valuable language learning tools if they believe that learning only occurs in a classroom using more traditional methods.

Finding 4: The Use of Voice Could Help in Formal Communication

The LESLLA students had received official messages from their own school, their children's school (via software used in communication between school and home), and from other government authorities, such as the Immigration Service, and social workers (via text messages). The messages were often difficult to decipher.

In Excerpt 3, the student (P8) is showing the interviewers photos from their smartphone's gallery. One picture shows a message received from the authorities, which one of the interviewers (R2) reads aloud:

Excerpt 3. (May 16, 2018, interview)
R2: we have here "you have been granted a personal assistant for leisure activities by the disability services. meeting with the interpreter". date, where, time. wh- what. do you know what this is.
P8: is not
R2: yeah
P8: is not me

In this excerpt, it is clear that the content of the message is urgent and important, but the language is difficult for LESLLA students to understand. Since we interviewed the students in Finnish without the assistance of an interpreter, we cannot be sure what the student's intention was when they answered the interviewer's question. One possible way to interpret the answer is that the student is trying to convey that they do not know what the message is about. On the other hand, the student may be trying to say that the message is not theirs. Because a smartphone's gallery usually also contains photos from messaging applications like WhatsApp, it is possible that the photo of the message is someone else's. Nevertheless, the message is a perfect example of complex texts of the kind the students have to face in their day-to-day lives.

If LESLLA students could communicate with authorities by voice messaging, official information might be easier to understand. In messages from authorities, it would be preferable to use easy Finnish or some other language the immigrant knows, since in the early stages of learning how to read and write, understanding and producing speech are the strongest subskills in the target language (Larsen-Freeman & Anderson, 2011).

Smartphones offer language users different modalities, such as speech, symbols, moving images, text and gestures, which they use according to their personal and social importance. LESLLA learners use their smartphones skillfully in their free time, and this can function as an additional language learning resource. These additional resources can also be utilized in the classroom context, but on the learner's terms, using methods that they find meaningful.

Sub-Study 2

The findings of the second sub-study have been divided into two sections. Some of the open-ended questions focused on the teachers' views on LESLLA learners' digital literacy and digital skills (RQ 2.1) and the others on their thoughts about using technology in literacy classrooms (RQ 2.2). The letter T with a number in the examples below refers to a particular respondent; the examples are translations of the Finnish responses.

Technology-Supported Pedagogy and LESLLA Learners

Based on the teacher responses, Finnish LESLLA learners use various digital applications and software both in the classroom and on their own time, as can be seen in Table 1 (see also Bogdanoff et. al., 2018).

Table 1
Applications and software used by LESLLA learners according to the teacher-respondents

LESLLA students use	
in the classroom	**on their own time**
Microsoft applications: Word, PowerPoint, OneDrive, Paint; Google applications: Translate, Docs, Slides, Gmail, Classroom; Kahoot!, Quizlet, YouTube, WhatsApp, Wilma, web browsers, Padlet, video editing tools, different online dictionaries and translators, Facebook, applications/websites for language learning (suomitaskussa.eu, Lyricstraining, kotisuomessa.fi, Memrise, Mondlylanguages, Suomipassi, Ekapeli, osaansuomea.fi), E-Ville (for basic mathematics), Moodle, informative web sites (HSL, Yle news in easy Finnish)	Kahoot!, Quizlet, Suomipassi, YouTube, Instagram, Snapchat, Facebook, Tinder, WhatsApp, Wilma, Google maps, web browsers, different video and game applications, PUBG mobile game, audio recordings for Suomen mestari readers, Microsoft Word, informative websites (Iltalehti, HSL, Yle news in easy Finnish)

Teacher 10 even mentioned that they encourage students to use the same software at home as they do during the lessons. The software that the teachers reported using in the classroom the most often were Microsoft- and Google-based office programs, and Wilma, which are also mentioned in Example 1.

Example 1.
T10: "When we use computers, we write texts with Google docs or Word. All the output is stored in Google Drive. In our institution, we use Wilma, which is used by the students on their smartphones. Messages and homework go through Wilma."

Wilma is a nationwide web service, (i.e., software that is available over the internet and includes messaging) which is used in communication between home and school. Guardians and teachers can share information about, for instance, attendance and instruction, and students can monitor their own studies. Thus, adult learners with school-aged children use Wilma both in their own studies and when communicating with their children's teachers. On their own time, according to, for example, Teachers 4 and 6, the learners often use social media but also applications for independent language learning and everyday life.

The most used digital device among the LESLLA learners in question is the smartphone, which is used in the classroom and at home. Teacher 8 even reported that only a couple of their learners own a tablet while hardly any of them have a computer. The same observations have been reported by Rosen and Vanek (2017). Because of the limited resources in the institutions organizing basic education for adults, the learners use their own devices also in the classroom; this can be seen in Example 2.

Example 2.
T1: "During the lessons, the students frequently use their own devices, institution-owned iPads, desktops in the computer lab, and occasionally laptops. Most students use their phone alone in their spare time."

In the teacher-respondents' view, for LESLLA learners, the most challenging aspect in using digital tools is logging into devices or

applications. It can be difficult to remember the username and password or a PIN code and type them correctly with a keyboard or a touch screen. This is especially challenging for learners with emerging awareness of the difference between lower case and uppercase letters. These points were mentioned separately in many questionnaire responses, but only Teacher 4 expressed them all (see Example 3).

Example 3.
T4: "Creating passwords and usernames and/or remembering them is almost impossible when distinguishing uppercase and lowercase letters does not yet work."

However, according to seven out of ten teacher-respondents, it is easy for their learners to use their smartphone for various other purposes, such as taking pictures and using applications.

When the teachers were asked what they found surprising in their students' IT skills, (Question 6), they brought up the fact that students were at the most beginning levels (Teacher 10), that they had such different levels of competence (Teacher 9), and that progress happened slowly (Teacher 11) (see also Smyser, 2019). Despite the challenges, Teacher 1 expressed that their learners were interested in using digital devices and willing to learn. Moreover, seven out of ten respondents reported that LESLLA learners are much more competent in using smartphones than any other devices, which is also supported by the student interviews discussed above (see sub-study 1) (see also Bogdanoff et al., 2018). According to Teacher 12, one of the downsides is that the curricula, institutions, and practical arrangements do not support the incorporation of technology as an integral part of literacy education (see also Rosen & Vanek, 2017). This is something that should be carefully considered in the future development of curricula, both at the national and the institutional level.

Technology-Supported Pedagogy and LESLLA Teachers

As expected, all teacher-respondents reported using a great variety of digital devices and applications on their own time (Question 9) but the descriptions of their pedagogical use (Questions 3 and 7) had variation. Since few of their students had access to a computer at home, Teachers 12 and 13 thought it was important to use computers and laptops in classroom activities. Teachers 3 and 8 emphasized the

importance of computer skills considering the students' future studies and employment opportunities, and Teacher 13 stressed the role of basic computer skills as an equalizer, because they allow citizens to access activities and services available in society (see also Rosen & Vanek, 2017). However, there are challenges related to using computers in the classroom, because of the limited number of devices, large and heterogeneous groups, and student motivation, which can be seen in Examples 4 and 5.

Example 4.
T4: "If the classroom assistant is absent, working with computers is a pain for the teacher because you have to advise each one individually… The institution does not provide devices for the students. "

Example 5.
T11: "The students are quite handy with their smartphones, which makes them less interested in learning to use the computer."

Rosen and Vanek (2017) show that underfunding in adult education is not just a Finnish problem. It is also obvious that, in large classes, it is challenging for the teacher to scaffold each student's learning individually and to tailor the lesson plans to fit everyone's ZPD to secure learning at different levels and with different existing skills (see Vygotsky, 1978).

It was interesting how the respondents described their use of technology in their teaching (Question 3). Three of the responses were from the teacher's perspective and focused on the teacher as a user of digital tools by listing the tools and applications the teacher worked with both in lesson planning and in the classroom. The remaining seven responses focused more on the students and their use of tools and applications during the lessons. The respondents reported that in addition to playing language learning games (Teacher 13), their students used, for instance, WhatsApp or the recorder application in their smartphones to record themselves reading text aloud and to send the recordings to the teacher with WhatsApp or via Google Classroom (Teacher 12). This division in viewpoints may tell us something about how the teachers understood the question, but also how active they consider their students to be as users of technology.

Most of the respondents gave the impression that their digital skills and digital literacy are up to date, but the responses did not provide much information on whether these skills are sufficient for pedagogical use. If we had interviewed them, the respondents could have elaborated on this subject. In Question 8, Teacher 8 wondered how they could integrate computer skills into LESLLA learners' Finnish lessons, which suggests that they might be facing pedagogical challenges. Learners need scaffolding even in skills that might seem, from the teacher's perspective, very basic, which can come as a surprise to some (e.g., Teacher 10, Question 6). Students can also have very different skill levels, and if the teacher is not prepared for this, it can be challenging to find a way to include technology in their lessons.

Implications

The two sub-studies revealed similar results. First, in terms of digital skills, LESLLA learners seem to be adept at using smartphones but less adept when it comes to using a computer, which emerged clearly in the learner interviews as well as in teacher questionnaire responses. Many LESLLA learners have been using smartphones since childhood in their countries of origin or in refugee camps (for similar findings, see Smyser, 2019), which makes it easier for them to start using one in Finnish as well. Second, another overarching finding was the usefulness of voice-based applications in smartphones for training reading skills and learning the language orally. Pedagogically relevant use of technology can improve language learning, but it can also support the individual's participation in society. However, exposure to technology does not automatically lead to its effective use, and not all learners take advantage of affordances provided by technology.

The role of smartphone applications' voice features is an interesting aspect in literacy learning. As illustrated in our interviews (Excerpt 2), the voice heard from the smartphone is a participant in the communication situation: it contributes to the interactions of the humans around it like a human interlocutor would. However, the role of a smartphone differs from the role of a human, since the smartphone itself cannot (always) decide how to respond to its human interlocutors. In our research, we have shown that smartphone applications' voice functions are a very useful tool in L2 learning, especially for LESLLA learners.

In our data, there is evidence of linguistically complicated messages received from schools or social services that do consider the recipients' language skills. This raises the question of whether the sender's responsibility ends as soon as the complicated message has been delivered. The responsible way to act would be to stop and pay attention to the understandability and clarity of official messages before sending them. The next step would be to ensure that the learner has truly understood the contents of the message.

In addition to teaching students how to read and write, it is important to inform them about the different algorithms that determine what kind of content one sees, hears or reads on social media. A student needs to adopt a critical eye for evaluating content like vlogs or advertisements they see on different social media platforms. In a sea of multimodal text, it is challenging to spot the texts that might have an ulterior motive. The teacher-respondents of this study did not discuss this topic in their questionnaire responses, so perhaps it would be useful to raise awareness on the topic and educate teachers on media literacy.

In Finland, the national-level statistics on the number of LESLLA learners are not openly available for researchers, which means that the allocation of resources to education, teacher training, and equipment for this population lacks transparency. It is important to use technology in ways that are pedagogically relevant in LESLLA classrooms for two reasons. First, the students cannot learn the computer skills that they need in their daily life and studies without regular practice. Second, with the help of technology, it is easier to differentiate teaching in large and heterogeneous classes and scaffold the learning process of the students in their ZPD, both in and outside the classroom (see also Strube, 2014). These perspectives should be carefully considered when allocating resources and designing curricula, as well as in pre-service and in-service teacher training.

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Appendix A

Transcription conventions

,	short pause
.	longer pause
-	cut off
[ ]	overlapping utterances
?	questioning intonation
(( ))	author's description

Appendix B

Open-ended questions in the questionnaire of sub-study 2

1. What kind of digital devices do your students use (a) at school and (b) on their own time?
2. Which applications and software do your students use (a) at school and (b) on their own time?
3. What kind of technology do you use in your teaching? How?
4. What kind of technology-related matters do you think are difficult for your students?
5. What kind of technology-related matters do you think are easy for your students?
6. What has surprised you with your students' technology skills (in a positive or a negative way)?
7. What do you think is important in teaching ICT skills?
8. What do you think is challenging in teaching ICT skills?
9. Which ICT devices, programs or applications do you use (at work or on your own time)?
10. What is challenging for you in using different devices, programs or applications?
11. What is easy for you in using different devices, programs or applications?
12. Have you been trained in the use of ICT in teaching? If yes, please explain. If you have not been trained, please describe briefly what kind of training you would like.