FOCUS - For a functional, digital, and critical literacy

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Abstract

This article describes the development of a new educational application, FOCUS, for women who are learning to read and write for the first time in their lives. Their driving force is often to manage their current everyday life better but also to change their future living conditions. Initially the Dispurse Literacy Program and the applications´s prerequisites and previous development are described. Examples of how the content and design has been changed with respect to both technical and pedagogical requirements are also given. The theoretical framework, the Resource Model, is then presented followed by a section where four pedagogical questions guiding the development of the app are examined. Finally, a short section follows where challenges and future possibilities for digitally based literacy education are highlighted.

Keywords: adult literacy program, educational application, emergent digital literacy, Resource Model.

1. Dispurse Literacy Program

There are about 763 million people in the world that lack basic literacy, two thirds of these are women (UNESCO, 2023a). For women with no or limited previous experience of formal education, taking an active part in their community can be challenging. The educational opportunities are often few and due to geographical, economical, and social factors, attendence, as well as access to digital tools, can be difficult.

The Swedish organization, Dispurse, has been offering a free and digitally based literacy program in remote rural areas of Peru since 2017. The program has been adapted for Quechua speaking women who have not had the opportunity to go to school. A majority of the learners are bilingual and also speak Spanish. To date, more than 2,000 women have participated in the Dispurse Literacy Program (DLP). To reach as many learners as possible Dispurse cooperates with stakeholders, such as mayors in local communities, regional governments, and the Ministry of Education in Peru at a national level.

A central part of DLP consists of the digital application FOCUS, which is developed to be used on tablets and works without access to wifi. It aims to offer a basic literacy education that is functional, digital, and critical (Dispurse, 2023). The app is combined with complementary learning materials that have been developed to supplement and deepen the learners digital work. These materials should be considered as an integrated whole as the learners can work both individually and together in groups, with different literacy practices in combination with their work in FOCUS. This group work is led by trained facilitators who visits the learners in their communities on a regular basis.

Each learner´s progress in DLP is also visualized for facilitators and administrators in the websystem, DispurseAdmin. The progress in FOCUS is synchronized by the facilitator using their mobile phones in places

with access to wifi. In places without access to wifi facilitators use our application DispurseSynch which enables local synchronization of the learners progress.

2.   From a technology driven to a user-driven development

The development of FOCUS began in 2011 in Sweden. During the years 2014-2017 the application was tested by target groups in four Latin American countries. From 2017 and onwards the development has focused on learners in Peru where a local branch of Dispurse also was established.

Initially, the content of FOCUS consisted of exercises that enabled learners to work with codebreaking practises, focusing on what the Council of Europe (2023) describes as *technical literacy,* with exercises mainly increasing the learners phonological awareness by reading and writing letters and short, wellknown words. But also exercises that aimed to increase the learners vocabulary using   *individual cognitive processes* of language learning. A focus on codebreaking practises was also found by Kim & Kwon (2012) when they reviewed available mobile apps for language learning.

Based on the testing of FOCUS during 2014-2017, we decided to contextualize the content more as well as integrate a content that enabled the learners to work with both *communicative and social processes* and *individual cognitive processes* of language learning. This highlights an important change for Dispurse Literacy Program (DLP). It changed the view of literacy as a mainly autonomous skill to a view of literacy as an active process situated in social practises, interdependent on different cultures and contexts (Street, 1993). This broader view of literacy also corresponds to UNESCO's definition of literacy (2023b) as "the ability to identify, understand, interpret, create, communicate, and compute, using printed and written materials associated with varying contexts".

An early example from FOCUS of the shift from an autonomous to a more contextualized view of literacy is vizualised in both content and user interface in the older and newer versions of FOCUS (Figures 1 and 2).
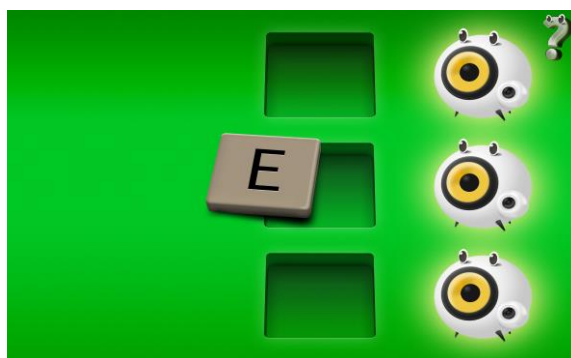

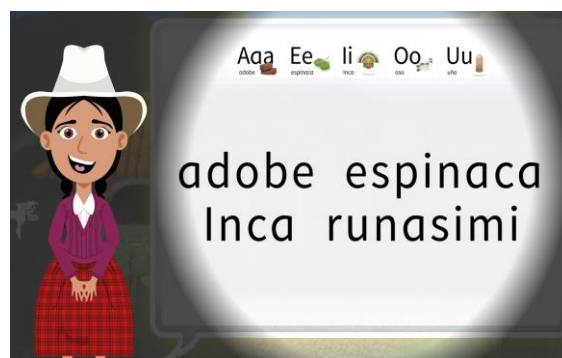Figure 1. Linking graphem and phonem in older versions without context.

Figure 2. Linking graphem and phonem in newer versions withfamiliar words in context.

Learner feedback also led to an integration of everyday concepts and language into the app, for example the use of ID-cards, an electricity bill, and recipes for nutritious food. An intensive development of complementary teaching and learning materials to further strengthen the functional literacy perspective started in parallel.

In 2022, Dispurse initated an external research-based evaluation. The study assesses the potential usefulness and meaningfulness of the literacy program, as well as its correlation with learning outcomes. The evaluation process is theoretically supported by Franker (2016) and Luke & Freebody (1999) and relies on specifically constructed instruments inspired by PIAAC in OECD (2019). Their preliminary results will be presented in 2024.

3.   A Resource Model for basic literacy programs

The Resource Model (Figure 3) serves as a theoretical and didactic starting point for the further development of FOCUS and the complementary learning materials. The model was initially created by Freebody and Luke' and called 'The Four Resources Model' (1999). Our version is supplemented with the learner resources, adapted to initial literacy education for adults, and also visualized by Franker (2016) as a puzzle with the learners in the center. In the change of the model, Barton´s (2007) view on literacy as a set of social practices, a symbolic system used for communicating and for representing the world to ourselves, and Janks (2010) critical perspectives on literacy and power, was integrated.

The model shows how the linguistic, literacy-related, and socio-cultural resources that each individual has already acquired become the starting point for their practical literacy work and influences their development within the four different literacy practices; code-breaking practice, meaning making practice, text analyzing practice, and the text using practice.

By solving real problems while working with the four different literacy practices, the learners crack, understand, use, and question the script code. By analyzing interesting words and texts together, using everyday texts, and copying and creating new texts together their knowledge of letters, words, and context increases. When these varied focuses are integrated into their daily work, the learners develop a useful literacy foundation which can also provide a solid foundation for further studies (Franker, 2016).

Figure 3. The Resource Model – Learner resources and literacy practices

interact and drive the learning processes (Franker, 2016).

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4. Four questions for developing the literacy application

Having the Resource Model and its focus on learners resources, four overarching questions guide the development of FOCUS, each discussed and illustrated with examples from the app.

How do we show respect for the learners linguistic and cultural experiences?

A challenging question is how the design and content can show respect for the learners' linguistic and cultural experiences (Figure 3). Done with respect and in dialogue with the learners possible stereotyping could be avoided. Through the use of Maria (Figure 4), as well as the design of her environment, referencing a well-known context, in which the learners can recognize themselves, is enabled. The road signs makes use of Quechua sounding names and Maria also wears the 'white hat', a cultural marker of the Quechua population in northwestern Peru.

Figure 4. Maria welcomes the learners to the FOCUS app.

To take advantage of the learners linguistic resources as well as offer the learners support in their first language, a prerequisite for our facilitators is that they can speak the languages spoken in the area where the program is implemented (Winlund, 2020). References to the Quechua language are used as often as possible in the choice of content in FOCUS. Throughout the learning process, Maria asks questions to enhance group discussions whilst highlighting their lingustic resources. She encourages them to use the language that feels most comfortable for them.

How do we create recognition and interactivity?

Recognition is a central factor for learning and in order to enhance the learners possibility to recognize and comprehend the materials we strive to use authentic and often local, well-known materials.

The first of our four themes in DLP is about Identity and the text we use is from the personal ID card, a familiar and essential text artefact in Peru and important for the learners in their daily lives. Another theme builds on our learners oral proficiency and listening comprehension in Spanish as well as their traditions of storytelling. This highlights the importance of oral practises not only written ones, which are often seen as the most prestigous ones in educational settings (Janks, 2010).

Figure 5. The personal ID-card in FOCUS.   Figure 6. Group work with the personal ID-card.

We work to provide the learners with content they can work with in groups, connecting FOCUS to group work sessions.

Interactivity is a criteria linked to user experience in the framework for evaluating language learning apps found by Rosell-Aguilar (2017). The overarching structure of each module in FOCUS contains a collaborative part with a primary function of promoting interactivity between learners, as well as giving learners access to scaffolding from the facilitator and other group members (Gibbons, 2014).

How can we make the learners active and co-creative?

The learners work in FOCUS starts with making their own avatar together with Maria. It seems that this initial act, when they can choose their own clothes, type of hat or no hat, and colours of hair and eyes, make the learners feel comfortable and ready to start their work.

There is also a personal module where each individual learner has their own billboard. Here, they get an overview of their own progress and their own path in the program. They can practice writing or reading important names, words, messages, and texts that relate to them. They can also at an early stage use the keyboard with speech synthesis to write their own short texts, listen to them, and pay attention to reading and writing directions. Different text types introduced in FOCUS can also be found here and the learner can practise navigating in a personal ID-card or write a recipe as well as writing short text-messages and using emojis.
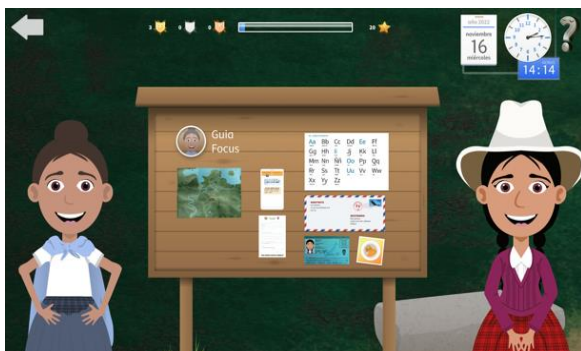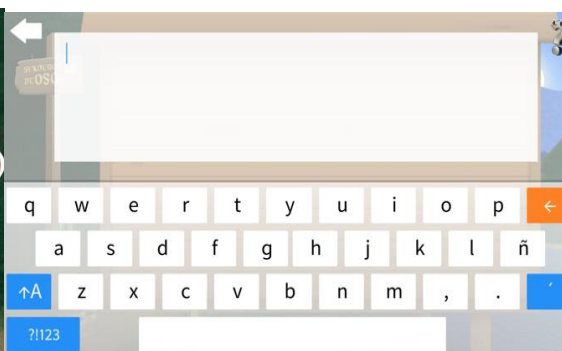
Figure 7. The personal module.   Figure 8. The keyboard at the personal module.

How can we challenge prevailing norms in society with the help of design?

Norms and conventional ways exist on how to use written language. This use is regulated by social institutions, and defined by culture which creates norms in society concerning what languages and literacies are the most prestigious and which are not. For us, the main dilemmas when developing the DLP is still the choice of language and meaningful content.

The story of Maria and her world highlights an indigenous woman living in a rural area which not is the norm in any common learning materials. The design and development was based on a thorough dialogue and collaboration with learners, facilitators, and local stakeholders with the aim to strengthen our learners identities and local culture.

We found using Quechua in the app difficult due to the many local variations. Choosing Spanish to give our learners access to the dominant language and at the same time promote Quechua was, and still is, what Janks (2010) calls an access paradox. By using Spanish its dominance is reproduced, but by denying the learners access to it their marginalization will only continue.

We strive to offer a content that is perceived as meaningful and useful for the learners in their everyday lives and that can enhance their participation in society. We have today choosen to include a common procedure and instrument of participation in Peru which is to understand the design and how to fill in a formal request to meet

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the local mayor. Another useful literate strategy included in the content is to know how to contact an organization for help when living in a violent relationship.

5. Challenges and future possibilities

We are confident that computer technologies can play an important role in providing literacy education, including digital skills and language learning for all who need it. Technology needs to be grounded in the local contexts and needs of the learners. It should be designed with respect to the learners languages, cultures, and literacy related resources.

For this to happen, we see the need for further research into how CALL-technologies can be designed and adapted for adult learners with no or very limited previous experience of formal education. Research studies could also have a stronger focus on how technology can support innovative and even more critical pedagogies. We also look forward to see more collaborations and sharing of best practises in how CALL technologies can support the low literate target group which has been the focus of this article.

We hope that our experiences can serve as inspiration for others working to provide basic adult literacy. Lack of education hampers individual and social development and increases inequality between people. As Freire (1970) pointed out, people that are the poorest, most oppressed, and least powerful also tend to be the ones that lack literacy education. The need for innovative CALL entrepreneurs and researchers in this field is still immense.

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