

An Effective Tool for Oshindonga Early Development Education: Lilonga-Nenyanyu Learning Application

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Abstract: The Namibian official language is English, and that is what is mostly spoken by children because it is the medium of instruction in schools. Learning materials ranging from kids' playbooks, TV programs, and most of the existing children's educational applications are all in English and other western languages, resulting in our native languages being rarely spoken and used, thus slowly dying out. This study aimed to investigate and explore the development of learning on an android mobile application in a Namibian language known as Oshindonga, an Oshiwambo dialect, spoken in Northern Namibia. Data has been primarily collected through an online survey from Oshindonga-speaking parents and caregivers, to understand what kind of features they would like to have in the application. Parents and guardians play a major role in their children's education, and the results have indicated that most of them are deeply involved in their kids' education. This will in a great deal assist the children in using the learning application as they can easily access their parents' phones, and as results have indicated, that majority of the children can use and are familiar with smartphones.

1 INTRODUCTION

Early childhood education begins when the child reaches the age of two, and it establishes the foundation from where the learning of the child takes place (Kapur, 2018). Children learn more efficiently and gain more knowledge when learning through play-based activities (Melinda, 2009). Early childhood education serves children in preschool years. Childhood education is an essential building block of a child's future success and later it improves school performance. The "Namibian Ministry of Education Junior Phase Curriculum" (2015) stated that the purpose of the first four years of education is to lay a solid foundation for learning throughout the formal education system, which in turn will prepare for full participation in society as a young adult, and in further training, studies and work. If the foundation which is laid in these four years is good, learners will be well prepared to continue learning. Hence, adequate learning tools for children are needed to achieve those later improved school performances and future successes.

With the advancing technology and changing time, education must not just be limited to classrooms. The use of technology in education has

been gaining popularity over the years resulting in a shift in the preservation of native languages. Nordquist (2019), defines the term native language as the language that an individual acquires in early infancy because it is spoken within the family and/or it is the language of the region where the child lives. Also referred to as a mother tongue, maternal language.

Namibia has a remarkable diversity of spoken indigenous languages (Mbenzi 2019). Nearly half the population speaks Oshiwambo languages, thus the content of the application is in Oshindonga indigenous language which is of the Oshiwambo dialect.

Lilonga-Nenyanyu application (LNApp) is an android application, designed to help children complement their knowledge in the two most crucial subjects in education namely: Mathematics and Oshindonga. Lilonga-Nenyanyu is the Oshindonga translation of Happy Learning in English.

The LNApp contains fun games related to the two subjects. The learning activities in the LNApp include the basics of Mathematics (counting, addition, subtraction, division, and multiplication), as well as the basics of the language which comprise reading, pronouncing different Oshindonga words, vowels, songs as well as learning the alphabet).

LNApp promotes independence, as the children can learn at their own pace rather than that of the teachers' or that of the child instructors' instructions. And this will encourage children to value independent study without a teacher's direct influence. This way children learn better and faster in their native language, a language they can understand in turn also preventing delays in learning.

1.1 Motivation

The Namibian official language is English, and that is what is mostly spoken now, learning materials ranging from kids' playbooks, TV programs, and most of the existing children's educational applications are all in English and other western languages. Hence, the need to develop applications in one of Namibia's indigenous languages. It is substantial for children to be taught in their native languages, in this case, Oshindonga. This will assist in preserving the language to avoid the distinction of the language. Beukes (2020) expressed that the loss of a language results in a loss of traditions and cultures.

The study focused on the Oshindonga language, as it is one of the predominant local languages used as a medium of instruction during the first three years of schooling in Namibian schools amongst the Oshiwambo people. Mathematics was also added to the application as most learners in Namibia find it difficult to learn mathematics(ref). The incorporation of the Oshindonga language and mathematics in the LNApp will assist in preparing and equipping children for primary education.

1.2 Objectives

This study aimed to develop a purposeful and educational application for Oshindonga-speaking children, an app that is easy to use and requires no training for first-time users.

The application aims to meet the following objective:

To narrow the communication gap between illiterate parents and children with regards to education.

The Namibian Language Policy states that the mother tongue should be the medium of instruction throughout the first three years, with a transition to English Second Language starting in the fourth year of their schooling (Namibian Ministry of Education junior phase curriculum, 2015, p.2). Apart from classrooms, this is not implemented anywhere else, hence another motivating factor to create the

LNApp to give the Oshindonga-speaking children another platform to learn in their native language.

1.3 Research Questions

The study aspires to answer the following question:

RQ1: Will the LNApp assist learners in learning better in the Oshindonga language

RQ2: What features should be incorporated in the LNApp to assist learners

RQ3: Will learning in the children's language narrow the communication gap between illiterate Oshindonga speaking parents and children?

2 LITERATURE REVIEW

Young children explore and learn with mobile devices in ways that are natural to them (Cohen, 2011). Learning involves touching and repeating certain functions on mobile devices, basically by trial, and error.

The combination of images and phonetics provides a good foundation for children to learn and speak in their mother tongue or home language confidently and fluently, but most importantly comprehend and appreciate the diversity of languages employed by South Africans daily. The Mzansi kids' multilingual language learning application is a South African educational app that was created for children between the ages of two to six years. This application was created to stimulate visual, speech, and language literacy skills at an early age by understanding basic everyday concepts and highlighting the right pronunciation of speech in six different languages; English, Afrikaans, isiXhosa, isiZulu, Sepedi, and Setswana (MzansiKids, 2019). This multilingual learning App upholds the basics of language acquisition before entering a schooling environment (MzansiKids, 2019).

Duolingo is another online free app supported by both mobile devices and desktop machines. Statistically, it is the most popular in the category of Education on Google Play. Studies have shown statistically significant improvements in language abilities as a result of using this app (Vesselinov & Grego, 2012).

3 METHODOLOGY APPROACH

This study is exploratory. Very little research is done on educational apps for children in the Oshindonga

native language thus the adoption of this methodology.

The study applied a qualitative methodology approach to gather and analyse data. It has enabled the researcher to gain in depth understanding of views and opinions of parents and guardians to Oshindonga speaking children on an educational app for their children which will have its contents delivered in Oshindonga. This type of research is much more subjective and uses very different methods of collecting information, mainly individual, in-depth interviews, and focus groups. The nature of this research is exploratory and open-ended. A small number of individuals were interviewed in-depth.

This research was guided by constructivism research paradigm, whereby people's views on the situation was crucial and taken into consideration. Social constructivism seeks to understand the point of view for the individuals, with the aim of understanding their social and cultural settings (Cresswell, 2014). Our study is based on the parents' view, and not necessarily on our own experiences.

3.1 Data Collection

Data collection needs to be as overt as possible, and findings should be recorded (Sanjari et al., 2014). Data has been primarily collected through a survey that was created with the Survey Monkey platform. Surveys are research methods used for collecting data from a predefined group of respondents to gather information and insights into various topics of interest (Usman, 2015).

The study's target population is Oshiwambo speaking parents community and caregivers.

Non-probability sampling was used for selecting the sample, sampling the population from all Oshiwambo speaking children's parents and caregivers to only those that are of the Oshindonga indigenous language group. In this case, the sample was chosen such that the participants may be a parent or a caregiver of an Oshindonga-speaking child in the age range of 2 to 7 years. Thirty (30) participants part took in our study.

In order to establish the validity and reliability of the research, we ensured that the questionnaire was double checked by several people before handing it out, and that, the questions were open-ended, to ensure that respondents could answer as much as possible as they saw fit and not be limited by closed ended questions.

3.2 Data Analysis

Survey monkey was used for data collection; The researcher was able to see the summary view of the collected data; comparison was done for each question from which customized charts were created. Open-ended responses were also categorized according to the asked question making it easier for the research to match up and compare responses from different participants.

4 DESIGN AND IMPLEMENTATION

The research design refers to the overall strategy that one chooses, to integrate the different components of the study coherently and logically, thereby, ensuring that one will effectively address the research problem. (De Vaus, 2001 & William 2006).

4.1 Software Development Process Model

This research study used the Iterative SDLC (Software Development Life Cycle model) model to develop the LNApp. The Iterative model is a specific implementation of a software development life cycle that focuses on an initial, simplified implementation, which progressively gains more complexity and a broader feature set until the ultimate system is complete, this model breaks down the software development of an outsized application into smaller chunks (Somerville, 2015). Figure 1 shows the Iterative Process Model Illustration.

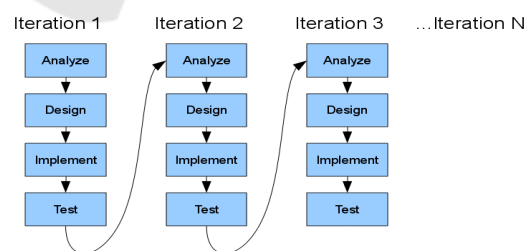


Figure 1: Iterative Process Model.

4.2 Application Architecture

4.2.1 Activities for Ages: Two to Four Flowchart

The users are presented with the home application when they log onto the application. Thereafter, they

can decide on whether to choose Age 2-4, or 5-7. When a user clicks Age group 2-4, they are taken to a next page with 4 options as seen in Figure 2. The first activity is for shapes. It consists of different shapes. A user can click on a different shape, and then the app

will say the name of the shape in Oshindonga.

The second activity is for colours. A user can select a colour, and then it will be read out. The third activity is for vowels. A user can click on them, and then they will be read out, and finally, the last activity

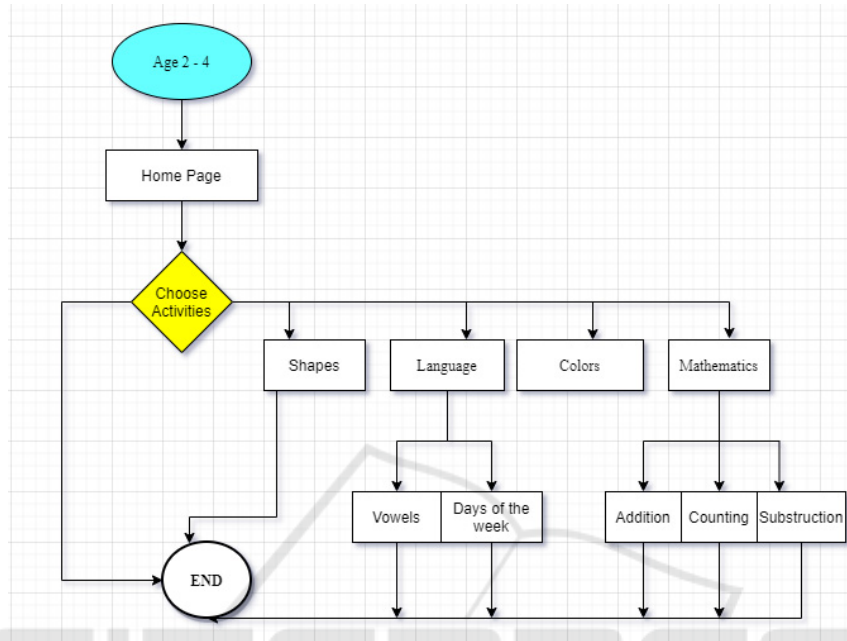


Figure 2: Age 2 to 4 Flow chart.

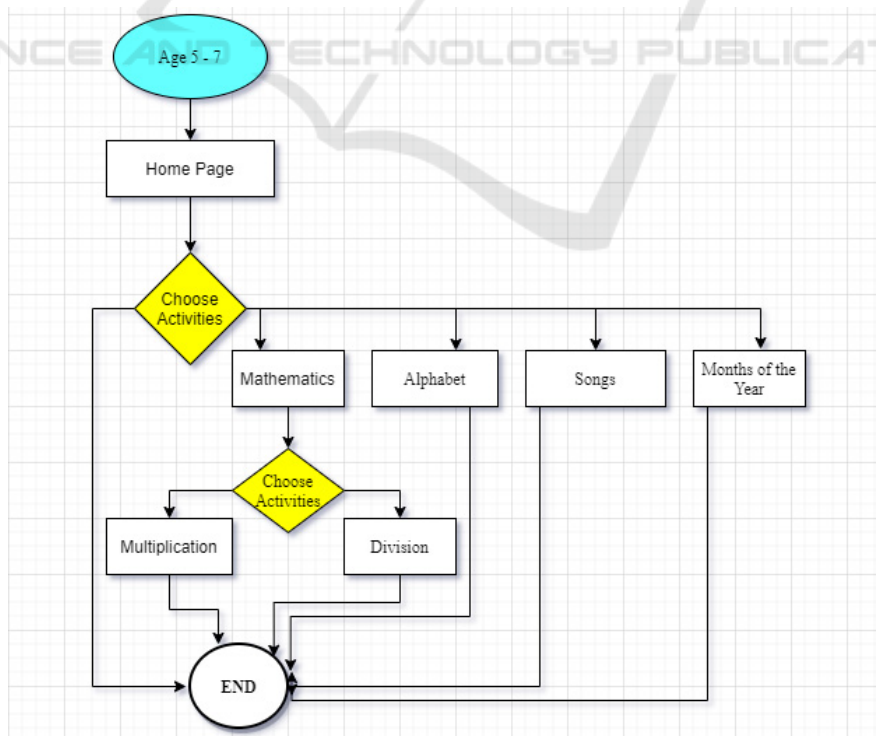


Figure 3: Age 5 to 7 flow chart.

is a mathematical quiz, with a voice of instructions in Oshindonga. When a user selects this option, they will be instructed to select the correct answer from below. If it is the correct answer, then will be applauded, and if it is wrong, they will be asked to try again.

4.2.2 Activities for Ages: Five to Seven Flowchart

For the 5-7 age group, there are four options as well. The first one is for a more advanced mathematical quiz. The second activity reads out the alphabet in Oshindonga. The third option consists of children songs in Oshindonga, and finally the last option reads out the months of the year in Oshindonga.

4.3 Lilonga-Nenyanyu Application User Interfaces

The application has multiple user interfaces on which the user can interact with the app. Figure 4 shows the activities for the 2-4 Age group.



Figure 4: Activities options for age group 2-4.

Figure 5 shows the activities that one sees when they select the 5-7 age group. There they have options of a more advanced mathematical quiz. The second activity reads out the alphabet in Oshindonga language. The third option consists of children songs in Oshindonga, and finally the last option reads out the months of the year in Oshindonga.

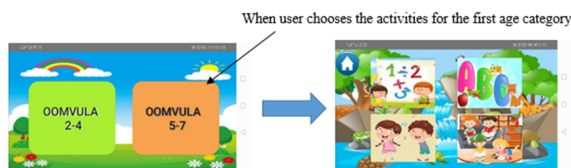


Figure 5: Activities options for age group 5-7.

5 RESULTS

Data collected from the participants were analysed and it was found that 91.43 % of the participants own smartphones and the remaining 8.57 % do not have access to smartphones. Since most participants own

smartphones, it makes it easier to install the LNApp enabling the children to learn.

The study also found that 65.71 % of the participants indicated that the LNApp assisted the children to learn.

5.1 Lilonga Enyanyu Feature Suggestions

Participants agreed about the importance of an Oshindonga Application and acknowledged the differences it might have in a child's education. Participants were asked to suggest features to be incorporated in the LNApp. Participants pointed out that it is better to provide the children with a learning platform that promotes learning at their own pace, at anytime, anywhere. One participant was quoted saying "Well children need to be educated starting from home, it's easier to learn as you do and when they go to school they will only be building on top of what they already know". Another participant stated that "Children must have more time to process and grasp the content they have just learned and they must be able to learn at their own pace", "The proposed application must at least be user friendly that even uneducated parents can help their children learn and be a part of their academics life",

As to what exact features they needed to ascertain within the Lilonga-Nenyanyu application, most of the respondents voiced that they expect to see a very interactive, fun, and educating app. Here are some of the suggested features: "The app must have colours, shapes, alphabet, simple maths, short stories and poems"

5.2 Lilonga-Nenyanyu Application User Experience Testing

Majority of the participants expressed that the application is user friendly and easy to use. One participant was quoted saying, "One can navigate through the application without training. Thus making the children's experience much easier, as the LNApp is in a language they fluently understand". Results have also shown that parents are positive that the LNApp will improve their children's Oshindonga language proficiency. Further stating that the LNApp proves to be an effective tool, as children will learn the basic education content in a fun and educative manner, which will prepare them for primary school education.

6 DISCUSSION

The primary goal for this study was to investigate and examine the subjects of children learning in their mother tongue, specifically in the Oshindonga language. Results found that majority of the participants are involved in their children's education, which is positive and promising, as parents and guardians play a vital role in their children's education. Research shows that children that have parents involved in their education are more likely to have higher grades and test scores, attend school regularly, have better social skills, show improved behaviour and adapt well to school ((Msila 2014). It can be deduced that having a learning application might actually assist and compliment the child-parent-teaching relationship easily since all participants in this study owned a smartphone and most of the children have access and are familiar with smartphone. With this established relationship between children and their parents/guardians and easy access to a smartphone, the LNApp might narrow the communication gap between illiterate Oshindonga native parents and children with regards to education and making learning enjoyable and conducive. Results correlates with the study done by Larsen-Freeman and Anderson (2011).

7 CONCLUSION

Providing children with the right tools enable them to learn with much ease. This study aimed to narrow the communication gap between illiterate parents and children with regards to educating them in Oshindonga. This was done in the context of concentrating on the Oshindonga language as barrier to learning amongst the young children and to find new ways to implement new fun and educational learning methods. Hence, the need for LNApp.

Since, the LNApp intends to assist oshindonga speaking children improve their oshindonga language skills through fun, interactive educational activities and songs. The study proved that using technology has the potential to enhance learning experience and young children will indeed learn better in their native language, at their own pace, as children grasp knowledge differently hence promoting independence.

8 RECOMMENDATIONS

This study recommends the following aspects as discussed below to be implemented.:

- A multi-language based application

While the research focused on delivering the application content in the Oshindonga native language, other native languages could be incorporated in the LNApp since Namibia is a country of diverse languages. This will enable users to switch between different languages.

- Executable in various operating system devices

Currently, the LNApp only runs on android enabled devices, advancement could be done to enable the application to run on multiple platforms..

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