



# Title: Design and construction of an educational software that can be used as a teaching resource to improve reading learning in 1st and 2nd grade children

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# Introduction

- In the present research, the topics of reading and writing were addressed, which are a problem that affects many of the educational institutions of basic level, in this case especially focused on the Ignacio Allende institution of the community of La Laguna Pisaflores Hidalgo, which contains a high rate of students who still do not know how to read or write. This research aimed to design and build an educational software as a resource or didactic tool to improve student learning. It is worth mentioning that this application will not be implemented due to the limitations generated by the pandemic that is currently being experienced, but once the situation normalizes, the possibility of its implementation will be analyzed and will be taken as a tool during online classes. Likewise, it was proposed as a hypothesis that the educational software must contain images, sounds and colors that attract the attention of children and allow them to learn to identify letters, can form words, these in turn allow them to acquire the necessary knowledge so that they learn to form words and approach Reading. In the same way, the general objective was established: To design and build an educational software as a didactic resource to improve the learning of reading in children of 1st and 2nd grade of primary education.

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- The research allows to base analyzing the methodologies that are used for the elaboration of an educational software depending on the degree of complexity that it has, for example for the elaboration of the design of the software the agile XP methodology was used which is focused on small projects and with a short period of time, Likewise, the stages that constitute this research were carried out, which were generation of the idea, analysis, design, development and tests, it should be noted that the development phase was 50%. Finally, the conceptual framework which allows to know the concepts that are used in the research to be able to understand more the topic that is addressed.
  - The contribution of this research in terms of the others, is that this research uses the method of learning by syllables which allows a better acquisition of knowledge and in an easy way. This research carried out is important because the problem was identified and based on this it was proposed the development of an application based on the problem found in the children and the way of teaching of the teachers, the application will help the children in the knowledge of the syllables and in the formulation of the words through them.



# Methodology

- The type of research that was used to carry out the research was qualitative because it is required to know the benefits that could cause the use of educational software as a didactic tool for learning to read in children of primary age. Therefore, the scope is to obtain as a result the analysis and design of the application, which should be attractive for children to show interest in using such software if it is implemented. The design to be followed will be as follows: definition of the problem, design of the work, data collection, analysis of the data, validation and proposal of the design of the software.

- This work is important because the place where the research was developed was an educational institution of basic level, where it has traditional methods for teaching such as the paint and marker, however, today with the pandemic that still crosses the country, it becomes more complex so it is very helpful the development of the proposed software. For this it was necessary to go with experts in teaching topics to obtain recommendations and points of view to develop the tool and make it suitable. To achieve the stated objective, it was necessary to go through 5 steps or stages:



**Figure 1: Research process.**

*Source: Own elaboration (2020)*

# Results

- ▶ **product 1: Product of the formula applied for the calculation of the sample.**
- ▶ **Sample size of the population**

Parameter	Insert value
N	20
Z	1.96
P	50%
Q	50%
e	5%

Sample size

Sample size

"n"=

19.05744618

Redobde

19.06

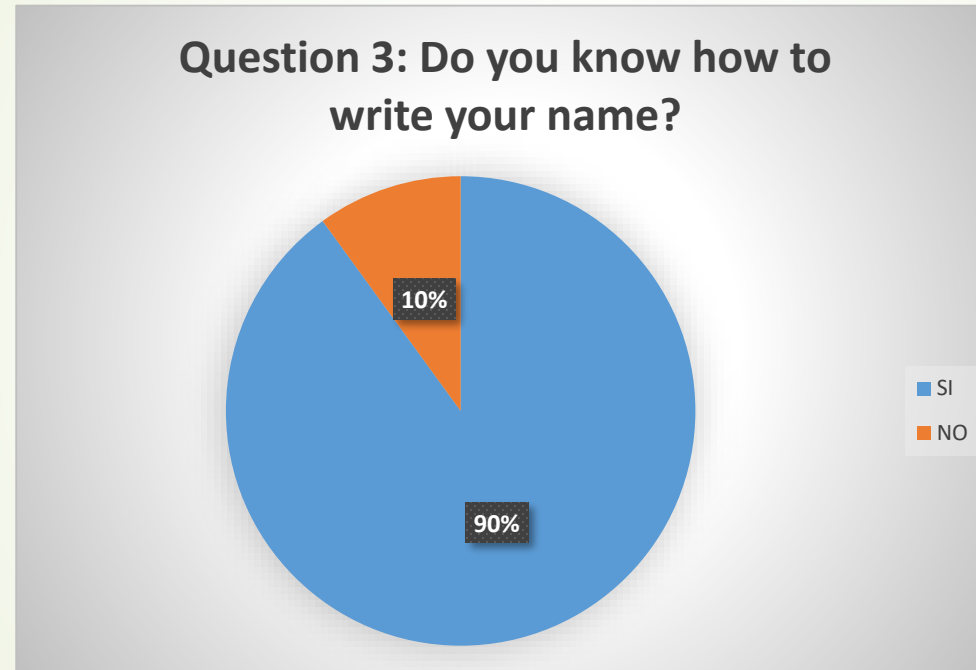
19.208

**Table 1: Application of the formula for sample calculation.**

*Source: Own elaboration (2020)*

## ➤ product 2: Application of survey.

The analysis of the data obtained was carried out, in relation to the survey the results were the following:

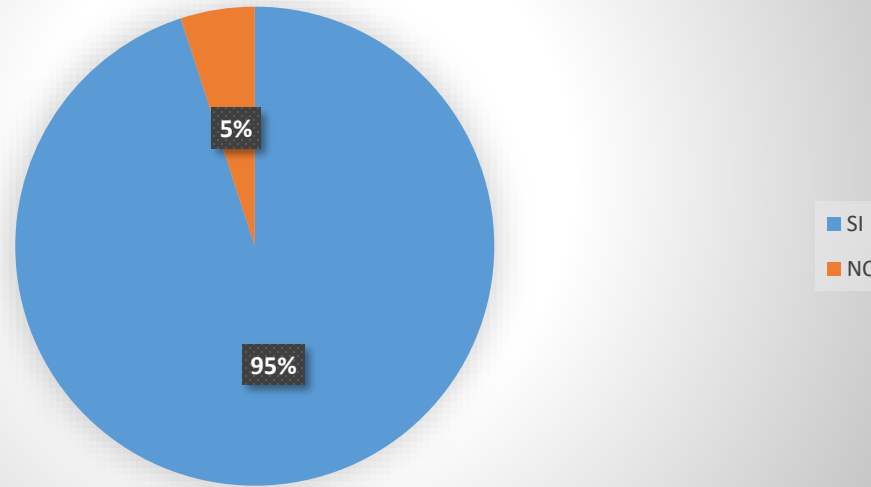


**Graphics 1: Impact of the use of educational software**

*Source: Own elaboration (2020)*

In relation to the question, 90% of the students surveyed know how to write their name, but cannot read.

Question: Would you like to use a game to learn to read and write?



**Graphics 3: Using educational software.**

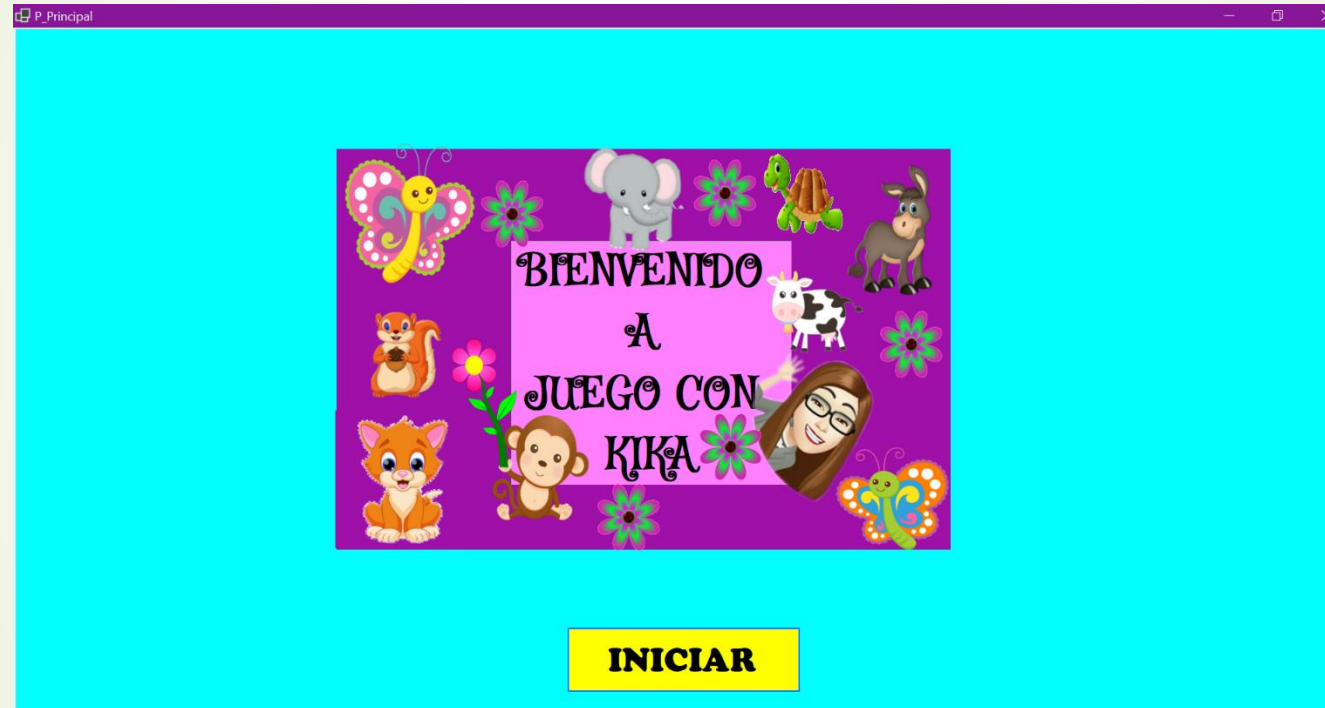
*Source: Own elaboration (2020)*

- The results for the use of an app are very favorable. Students' responses are based more on learning by using games to make it non-monotonous. 95% of students would like to use an application to learn to read and would be willing to manipulate it.
- Most students would like to learn, but in a fun way.



### Product 3: Interface of the proposed application.

Based on the answers obtained from the instrument that allowed to diagnose the current situation, we proceeded to elaborate the software for primary school students, then the environment and design are shown in a synthesized way:



**Figure 2: App home screen layout.**

*Source: Own elaboration (2020)*

- The image above shows the main access screen to the application.



Figure 3. Main menu interface of the game with Kika application.

Source: Own elaboration (2020)

- Interface of the main menu is responsible for linking all the forms of the application as well as the pronunciation and those of the divination of the words.

**Figura 25. Anexo 4: Aplicación de encuestas.**



*Fuente: Elaboración propia (2020).*



# Conclusions

- Most of the students know how to write their names but do not know how to read, in the same way few know that it is a syllable, in relation to the way of teaching of the teachers you can see that they do not use the technologies of the information to favour the learning of the students, in the same way it is concluded that the students have different styles of learning but the one that more predominates is the visual learning, finally, students agree to use an interactive application for their learning from the information obtained in the interviews carried out it was obtained that none of the teachers has worked with an educational software to teach the students, however they have used it for their professional training, in the same way that they do not use a planning for each of the grades, and in the approaches of the activities they do not use activities that favor each of the different learning styles, in relation to the use of an educational software teachers would like to use it in this way would favor them so that students learn to read more easily and would be willing to train themselves to be able to use it in the classroom as a tool in their work.
- As for the software developed is user-friendly and visually appealing to basic level students, which will allow it to be interesting for them and it is expected that once it is implemented students will learn through more interactive activities. It is also intended to train teaching staff on the handling, use and installation of software.

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