

ABSTRACT

This research investigates non-formal Digital Game-Based Learning (GBL) with the most vulnerable and marginalized in Bangladesh and Pakistan, where children between the ages of 5 to 11 are taught the basics of numeracy and literacy through tablet computers and selected mobile game-based educational applications.

The children study without a teacher at their own pace following learning goals that mimic those of the national curriculum of their respective countries.



MOTIVATION

There is a record number of refugee and migrant children in the world. One-third of them are out of school, even when the right to education is a human right. In Bangladesh and Myanmar alone, there are an estimated 720,000 Rohingya children who do not have access to formal education.

Outside of refugee contexts more children than ever are attending formal education, yet many do not acquire basic skills in reading and mathematics. In Sub-Saharan Africa and South Asia, fewer than half of the students at the end of primary education have attained the minimum proficiency levels in mathematics and literacy. This can be accounted for the lack of trained teachers and the poor condition of schools.

Digital game-based learning has emerged as a valuable tool for providing students with new ways to learn. There is growing evidence that game-based educational technologies can be used for providing quality education.



Learning space in Skardu, Pakistan



School in Karachi, Pakistan

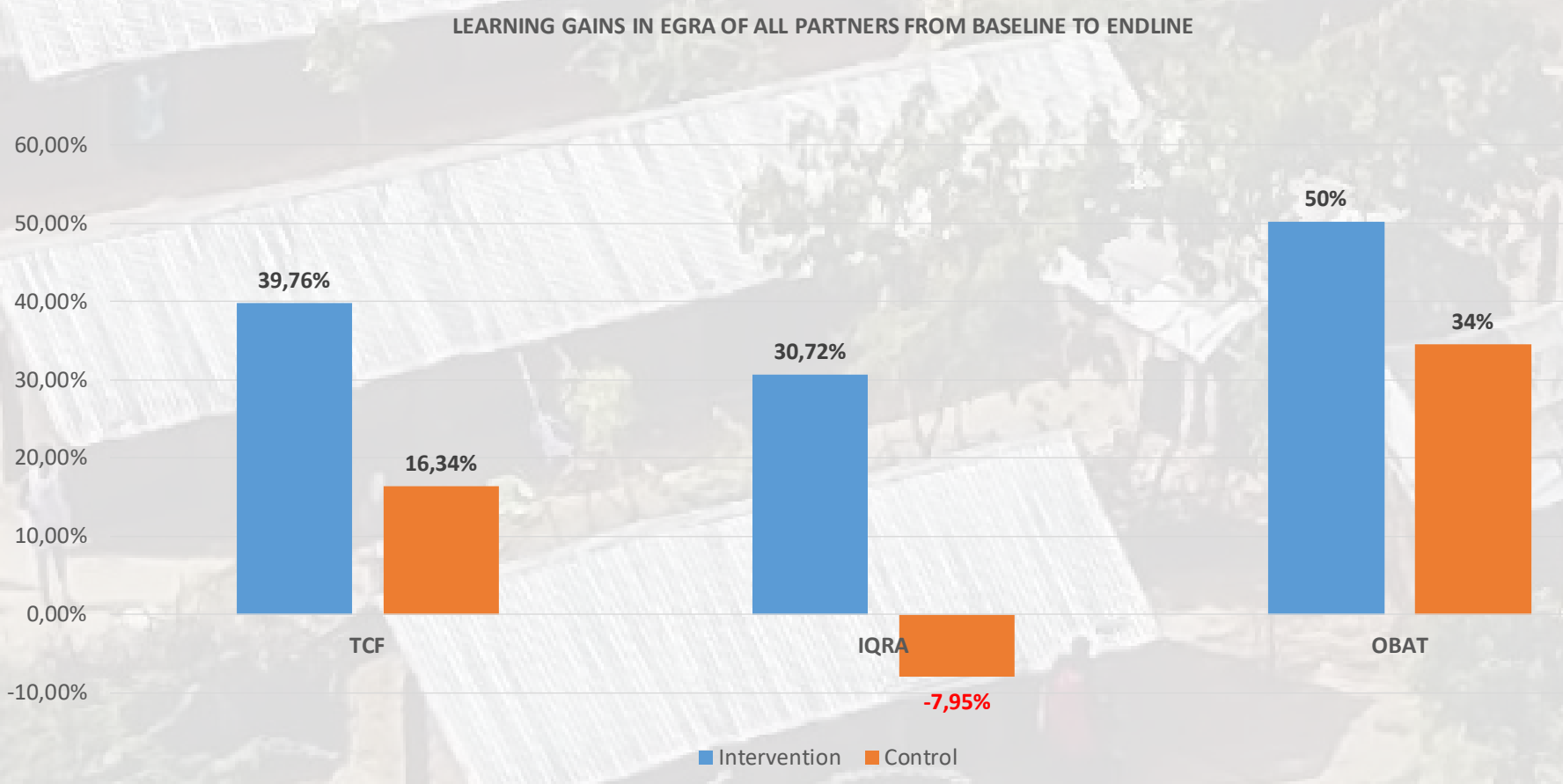
DIGITAL
GAME-BASED LEARNING
IN EMERGENCY CONTEXTS



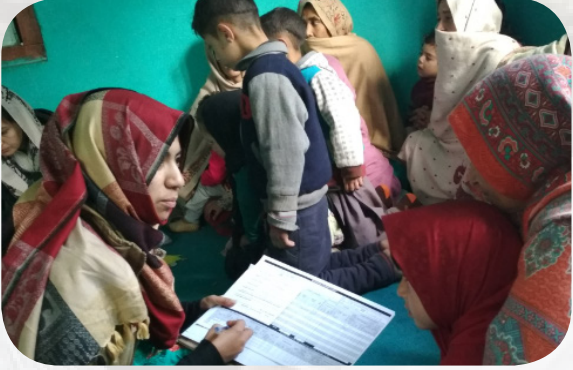
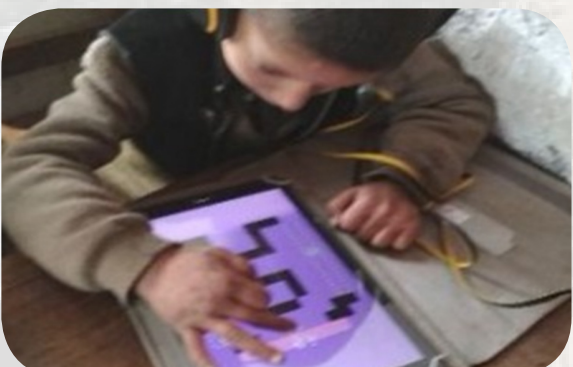
METHODS

Correlations between the initial and the final learning outcomes within the intervention group will be identified through statistical analysis of base-line, mid-line, and end-line data. The data was collected by enumerators through Tangerine, a mobile data collection application. The questionnaires were implemented following Early Grade Reading Assessment (EGRA) and Early Grade Mathematics Assessment (EGMA) frameworks, which provide simple, low-cost measures of literacy and numeracy.

The families or caretakers of each child participating in the intervention answered a household survey. Focus group discussions were organized after the intervention together with families and facilitators to collect experiences of the intervention.



Comparison of learning gains based on the percentages of correct answers before and after intervention



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STUDIES

Countering illiteracy through Digital Game-Based Learning: Educating the most vulnerable children in Pakistan and Bangladesh (2019)

A quantitative study identifying trends and patterns in learning outcomes of children participating in digital learning (N=278), comparing them with those of a control group (N=151). The skills observed are basic numeracy and reading in a native language and in English or another second/non-native language.

The effect of Digital Game-Based Learning on the vulnerable communities (2019)

When implementing an educational intervention, it is important to involve local communities who are the experts regarding their children. The second study is a short-term theoretically informed ethnography, which is based on household surveys, focus group discussions and observations from visits to the students' families.

Collaboration and Confidence: The development of non-cognitive skills and Digital Game-Based Learning (2019)

The third study will be an ethnography, phenomenography or parallel mixed approach. The study is based on observations from within the classrooms in Skardu, Karachi, Dhaka, and Kutupalong. In this study, the aim is to focus on the role of Digital Game-Based Learning in building the students' collaborative skills and in strengthening their confidence.

RESEARCH QUESTIONS

How do the literacy learning outcomes of children participating in digital game-based learning compare with those of children participating in formal education?

How does the children's participation in the Digital Game-Based learning intervention affect their communities according to the children, their families, and their facilitators?

How does digital game-based learning effect and support the children's development of confidence and collaborative skills?

SCHEDULE
2018

Collection of data for the first and second article. Writing the first article. Field visit to Karachi, Pakistan.

2019

Publishing the first article. First field visit to Bangladesh and second visit to Pakistan to organize focus group discussions with facilitators and families of the students for the second article. Publishing the second article and designing the tools used to measure the selected constructs in the third article.

2020

The third study is expected to require four separate month long field visits. The study aims to observe the children as pedagogical agents together with the tablet-computers and educational games. The visits will be done to Karachi and Skardu in Pakistan, Kutupalong in Bangladesh and Blantyre in Malawi.

2021

Publishing the third article, finalizing the dissertation and, by the end of the year, graduation.

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REFERENCES

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