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**BUBBLE**

Educational Games For Children

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# Abstract

In the 2022s, it is clear that children now spend most of their days in front of the screen. During screen time, playing games is one of the most important activities of children. However, technology is developing day by day and innovations are quickly becoming a natural part of life. Therefore, children now need to be creative people who produce innovation, rather than just consuming themselves with the digital content offered to them. For this reason, students need to improve their creative thinking skills. Also, they need guidance for producing with technology. As a result, it was determined that there was a statistically significant difference in the creative thinking skill scores of those who designed their own educational game.

# 1 . Chapter one : Introduction

## **1 . 1 . Background of the project**

Today's kids seem to be able to do things much beyond their years, and they start using the Internet at a young age for a range of tasks like playing games, watching movies, looking up information, sharing it with friends, and so on [1], Their brains can now process new information more quickly than they could previously.

Nowadays, practically every child owns a smartphone primarily used for pleasure. Some children also use their smartphones for learning, but why? Mobile devices are helpful for a variety of reasons, including accessibility from anywhere and at any time, personalization, resources that can be used at one's own pace, and simple communication [1]. Additionally, education is delivered in a manner that differs from how it is often done in school.

Gaming is the most popular learning method, and it plays a significant role in every child's life. No matter the age group, games have a powerful driving force that drives players to compete and win, even if it means repeatedly playing the same game. This is the ideal learning environment [2].

Our aim is to create free software that every child can use easily for learning. As a result, we chose to create a mobile educational application for kids.

Our software will be divided into three sections: one for preschoolers, one for elementary schoolers, and one for middle schoolers. Each component will include games tailored to the appropriate age group.

Since there is no educational application that supports our Arabic language, our first priority is to deliver all game content in Arabic for Arab youngsters.

## **1 . 2 . problem**

**Here are a few issues that arise with kids and mobile learning.**

* No kid-friendly smartphone app is accessible in the Arab globe with Arabic language.
* the absence of a platform that would be interested in instructing kids of this age.
* There is no teaching platform for the concept of programming in the Arab world.
* The reward system is not available in applications from other countries.

## **1 . 3 . Objectives**

We'll develop the first mobile educational software for children in the Arab world with the goal of making it simple for any child to use for learning.

Our software will be divided into three sections:

* preschool:

this section will teach the kids the letters, shape of animals and their sound, and concept of math.

* beginning of school:

this section will teach the children the concept of Algorithm, and concept of problem solving.

* midschool:

this section will teach the children the concept of programing, and concept of logic gates.

## **1 . 4 . Scope**

Our application's target users include the following:

* Children between the ages of 5 and 12
* the parents of these kids

## **1 . 5 . Limitations**

The time frame for this study was constrained because it began in October 2022 and ended in Feb 2023. The fact that this study is exclusively done in the Cairo and Giza government presents another challenge.

**1.5.1 Minimum device requirement**

* Platform:
  + Android 4.1 or above,
  + iOS 11 & above
* Memory: 4GB RAM
* Storage: available 100MB

**1.5.2 Framework**

We will create stunning, natively built applications for mobile devices using Google's portable UI toolkit, the flutter framework.

**1.5.3 Database**

To avoid any internet issues to provide a better experience, we will use a local database.

# 2 . Chapter two : Literature Review

**2.1. introduction**

Smart mobile device usage is increasing rapidly among young children due to the novel characteristics of these devices and the rapid development of apps targeting these age groups.

Many researchers have pointed out that mobile devices are the preferred learning technological tool for young children, due to the advantages of this technology relative to other older ways of learning, These include a user-friendly touchable interface and interactive displays that stimulate multiple sensory systems and provide instant responses to input [4].

Unlike traditional learning ways such as school which demand fine skills and self-study to get the most benefit, which often proves difficult for young children.

We found that the most effective way to learn a child is by gaming because gaming lets children practice what they know, and also what they don't. It allows them to experiment through trial and error, find solutions to problems, work out the best strategies, and build new confidence and skills, specific games will be designed for each age range [5].

This chapter will give a brief on our project and show the games that we choose and the categories we'll be including in the app. It will also go through the rationale behind our choice of this teaching strategy.

**2.2. body**

**why education for children?**

**The mobile educational apps**

**The important role of using mobile apps in education**

**Design and its effects on the mobile educational apps //**

**Why the games?**

A special type of computer software that is both entertaining and instructive is called educational games. In addition to efficiently promoting student learning and problem-solving skills development, it may deftly blend knowledge with games, create authentic problem situations for learners, and drive learning motivation [5].

Several advantages of educational games that led us to pick this way of learning include:

* Increases A Child’s Memory Capacity:

Games often revolve around the utilization of memorization, children have to remember aspects in order to solve the game,

* Helps With Fast Strategic Thinking & Problem-Solving:

Most games require children to think quickly. Moreover, they have to utilize their logic in order to think three steps ahead in order to solve problems and complete levels. This is great because it is something that helps children in later life as they develop their logic, their accuracy, and their ability to think on their feet and outside of the box.

* Skill-Building:

A lot of games contain new skills that child didn't know before. For example, learn the concepts of programming, and how to make software like games, Also learn the concepts of electric circuits.

**Using reward system//**

## /// Our Categories

Our software will be divided into three sections:

* preschool:

this section will teach the kids the letters, shape of animals and their sound, and concept of math.

* beginning of school:

this section will teach the children the concept of programing, and concept of problem solving.

* midschool:

this section will teach the children the concept of Algorithm, and concept of logic gates.

## 2.3. conclusion

# 3 . Chapter three : Methods

# 4 . Chapter four : Results and Discussion

# 5 . Chapter five : Conclusion

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Why game