

Kids EduLink - Android application to provide extra knowledge for kids based on the Local Syllabus

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Abstract:

The integration of educational process with digital technology is a trend and may greatly enhance the teaching learning process. In current situations, kids are failing to keep a proper balancing between studies and extra-curricular activities. They feel bored when they learn with books. An android education system is the easiest and the most effective way of teaching kids in an interesting way. Games can be considered educational teaching resources, allowing the learning and fun process together. The developed project is an android based educational application which makes the teaching and learning process easier. The research group has use the prototype approach in implementing this new system and several algorithms. To successfully complete the research, the research team had to meet up with main objectives that came up with prior to implementing such as to develop an algorithm to measure the performance of the kids and to develop game levels based on logical thinking. There are many applications to teach kids mathematical and English content and also many learning technics based on covering a particular subject. But the developed project has many special features. It has many lessons, tutorials, games as well as a dictionary. And it has provide a summary of the overall performance of the kid. The “Kids EduLink” has cover not only the learning process but it also provided some fun activities that will entertain the kids.

Keywords —Android Applications, Logical thinking, Mobile games, Algorithms

I. INTRODUCTION

The world is developing day by day with modern Technologies. The technology may greatly enhance the learning process. The integration of education process with digital technology is a trend and may greatly enhance the learning process. In this competitive society, children fatten their knowledge collecting more and more information out of their syllabus scope but they tend to get tired of learning through books and look for new ways of learning such as using the internet etc. But some parents do not permit children under the age of 12 to use internet. In this research, we try to identify this drawback and provide a solution.

The purpose of this project is to develop an education based android application for students

from grade one to four. It provides extra knowledge similar to the local government syllabus. This will help students with their homework, assignments and encourages them to learn in a fun and engaging way. It can also be used as a learning tool that facilitates self-learning of students. It is based on a theoretical foundation of the local syllabus and allows students to develop their knowledge.

II. LITERATURE REVIEW

On evaluating skillville: An educational mobile game on visual perception skills. The researchers aim to maximize the potential of technology as a way to facilitate learning in a child's growing years. From books to educational applications and games, various educational mobile tools for

children have now been developed. However, most of these applications lack significant features for learning, such as an assessment of one's performance, as well as the involvement of the teachers and parents of the users. Skillville aims to propose solutions to these problems [1].

Continuance use intention of primary school learners towards mobile mathematical applications. Previous research on the use of educational games in mathematics education have focused primarily on the learning potential of these games and have not adequately addressed the continuance use intention, or the replay value, of these games. This is a serious gap in literature due to the fact that mobile mathematical applications will only be able to assist primary school learners to improve their math skills if they continue to use these apps on a regular basis. The purpose of this paper is to address this gap by investigating the continuance use intention of primary school learners towards mobile educational mathematical applications [2].

A study on educational games application model in E-learning cloud system. This paper explore new concept consist of games application design model in E-learning cloud using Cloud as a medium to reach end user students. What will be outcomes in regard to the user interface and contents of the learning environments under E-learning cloud development? In Addition, it present importance related to designing new Games application model in E-learning cloud through Simulation. So, it needs to focus on what we want them to learn through games application. This gives is main concept of games application design model [3].

Mobile application tools for learning and quiz based on Android. This article proposed a method in cloud computing environment based on open source OpenStack platform and Android. It consists of three parts which are the client part disposed on mobile used for teachers, students and the service part of classroom quiz library disposed on cloud computing platform. This

paper's solution provide the functions for teachers to download classroom quiz contents, start quiz, upload scores and for students to view history record of quiz and learning on demand or test themselves by cloud computing platform [4].

Monkey Gamer: Automatic profiling of Android games. In this research classify game apps on the basis of their development process, their I/O process and their interaction level. Monkey Gamer, a software to automatically play a large class of Android games and collect execution traces, based on a state machine to partially describe the game structure and interactions. A significant similarity is shown when comparing the results obtained by the Monkey Gamer and by human players, for three of the most popular Android games. Evaluate the performance of the Monkey Gamer by comparing the traces. It generates with traces created when humans play the games, and find significant similarity in the trace sets [5].

Mobile game-based learning to inspire students learning motivation. In this learning model make students in mobile learning environment, further more could enhance their learning motivation. This study chooses a more abstract course contents for designing the application game. Students would learn the course contents when they use their fingers to touch the screen to change something, it will make students impressed. Finally compare with the mobile game-based learning and computer game-based learning which could enhance students learning motivation more. The result shows that the students agree the way of using game-based learning and in each mobile devices group or computer group were got higher learning motivation than before. Learning Technology development so far, there are more and more study in game-based learning and m-learning. There are fewer survey to combine these two elements to discuss, so that this study combines the game-based learning and m-learning to develop an application on Android smart phone and then we guide students to use it in fragmented time [6].

Learn-pads: A mathematical system for children's physical and mental well-being. In this paper present a system that combines both aspects by promoting not only entertainment, but also learning through physical activity. The system consists of a set of footpads that allow the user to interact with video games enriched with multimedia and aimed at enhancing the math knowledge of children. Our study shows that the system have created an atmosphere of fun among the children and engaged them in learning [7].

Go Run Go: An Android Game-Story Application for Aiding Motivation to Exercise. This article is a smartphone-based exergue designed for motivating people to go out and exercise more through the use of an original, user-friendly game story and activity-energy expenditure information. The application utilizes acceleration data on the Y-axis of the smartphone to build a decision tree classification model for distinguishing three types of activity: walking, running, and inactive. Finally, time spent on each activity is recorded and used for computing the number of calories burned on the activity, which is then displayed to the user on the smartphone screen. The experimental results demonstrate that performance of Go Run Go is very satisfactory in both quantitative and qualitative measures [8].

Design and Implementation of MobileEdu M-learning Application for Computing Education in Nigeria. A Design Research Approach. The application is intended to facilitate the learning of computer science courses on mobile devices, support ubiquitous, collaborative, and social learning for undergraduate students. Moreover, the application eases access to learning resources. In this article present the analysis, design and implementation activities related to the development of the first MobileEdu prototype. The research also deliberated on the characteristics and scope of the adherence of MobileEdu to the traits and ideas of DR [9].

Mobile graphics game with peer-to-peer android based collaborative system. This android application allows participants to interact in the social environment without any additional assistance needed to participate in the group activity. The implementation consists of two phases. The first is the development of a peer-to-peer communications API (Application Programming Interface) that can be used and reused by any application that wishes to utilize peer-to-peer communication. The second is to develop the Droid Hold'em game itself, which will utilize a tablet to serve in place of a poker table, and phones as game interfaces for each individual player [10].

Game based education with android mobile devices. The basic aim of this project is to provide a mobile education application for primary school kids. Thus, they will reach their lesson topics and they will make exams and solve more questions at every place and every time over their smart phone [11].

III. METHODOLOGY

The research group decided to use prototype methodology to implement our application. It performs the analysis, design and implementation phases concurrently. And also all these phases are performed repeatedly in a cycle until the system is completed. By using this prototype, the client can get an actual feel of the application. The main part of the prototype is usually doing the first part of the system that the users will use. Then it is showed to the users and the project sponsors, who provide comments, which are used to reanalyze, redesign and re implement the second prototype that are with some features. This process will continue as a cycle until the expected results are received. The main goal is to provide a system with the overall functionality.

A. Planning

In initiative sates the team considered several research ideas and came up with a topic, which is a mobile application, to provide educational lessons for students from Grade 1 to 4. The team

clearly identified the project objectives in project registration period. Also gathered information about the project by studying similar applications and researches.

Research group created a research questionnaire. With aid of above solutions group identified the research problem and handed over to the lecture in charge.

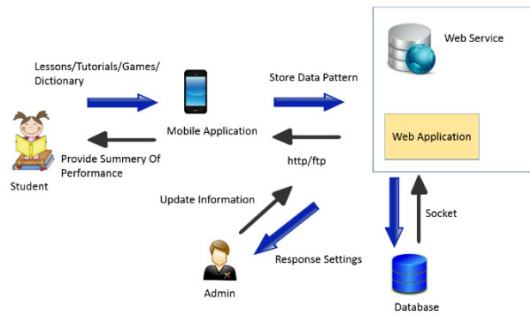


Fig. 1 High Level Diagram.

B. Analysis

Main objective of this phase is to capture the correct requirements. The team used different methods to identify the maximum satisfactory requirement that need for the application. Also choose most efficient information gathering techniques. The team identified the most suitable stakeholders like primary teachers and parents to gather requirements.

With aid of the facts that arouse in the literature review and analysing available requirements, research group sorted out requirements that needed to be implementing in the application. Team members decided to gather information by interview sessions, and by distributing questionnaires. After every information gathering session, team planned to make interview reports for the further betterment.

C. Design

During the design phase the client side programming of the proposal system was handled. Design phase was needed to be completed before the Building Prototype phase.

Interfaces are designed as separate scenes for lessons, tutorials, games and menu contents.

When the user started the application, user can select the grade they want to proceed with. Then the user has to select the subject they want to study. The lesson section includes lessons that are taught by the government syllabus. After each lesson the application provides a tutorial similar to the lesson that the user has studied. The tutorial consist of 5 questions. It gives one mark for each question. If the user gets more than 3 marks for the tutorial he/she can proceed to the game interface. If he/she does not get more than 3 marks then the application will provide another set of questions.

When user selects the correct answer the score will increase. If user select the wrong answer score will not increase. Each game have 2 levels. It also have a score board and a performance pages. When the user select the score board interface they can check their performance individually.

D. Implementation

In this phase research team focused on implementing the application used java as the development languages. Furthermore the team used Android Studios as the development environment.

The GUIs of Kids EduLink application contains menu screens, which includes all the section items to get lessons, tutorials and games. In these pages the team used colourful buttons, backgrounds etc. to attract students.

The lesson section provides learning materials. It guides kids to learn using a series of nice images. These images were created using Photoshop.

In performance analysing section, it analyses the students current marks displays them accordingly.

E. Testing

In this phase the team used unit testing and integration testing. In unit testing project team tested each and every unit and check the performances of the students. Finally the project

team combined every functionalities together and presented as a completed system and tested it.

F. Results and Discussion

Results:

- 1) Fig. 2 illustrates the menu page 1. It asks the user to select the Grade. When the user clicks on the specific Grade they want to proceed, it navigates to the next page which asks the user to select the Grade



Fig. 2 Menu Page 1

- 2) Fig. 3 illustrates the menu page 2. The menu page 2 asks to select the subject (English or Mathematics). The user can select the subject they like to proceed. When the user clicks on a specific subject it will navigate to the next pages.



Fig. 3 Menu Page 2

- 3) Fig. 4 illustrates the Lessons and Tutorials page which asks the user to select the lessons or the tutorials they want to do



Fig. 4 Lessons and Tutorials

- 4) Fig.5 illustrates the Grade One Lesson 1. Lessons are shown as a picture slideshow. The user can click the Next button to go to the next picture of the lesson and previous button to go back to the previous picture.



Fig. 5 Grade One Lesson 1

- 5) Fig. 6 shows the Tutorial 1. In this page, series of questions are given and the user is given 3 choices of answers. If the user clicks on the correct answer, a message “Your answer is correct” will be displayed. If the user gives a wrong answer. A message “Your answer is wrong” will be displayed.

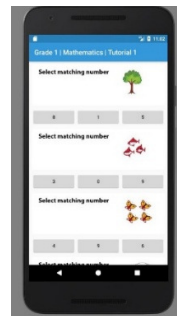


Fig. 6 Tutorial 1

- 6) Fig. 7 illustrates the quiz interface. The quiz

consists of 5 questions and it is a time framed game. Each question has only two answers to select. The quiz has two levels, once 1st level is finished the 2nd level will open automatically. Answers will be calculated accordingly.

User's progress can be seen adding both tutorials and the performance of the quiz. This progress will display on the performance page. When the user select the score board page they can check there performance individually.

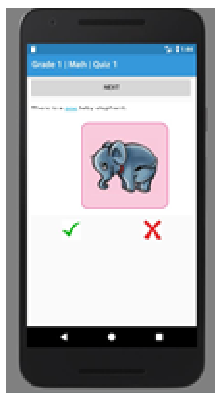


Fig. 7 Quiz

IV. CONCLUSIONS

Based on the statistical analysis results most of the parents and teachers equally accepted that using cell phones will not distract their students from their learning activities. The teacher's guide is the most supportive element that can give after explaining the lesson among others. Presently sending their children to extra classes is the most helpful way to educate students. Most of the selected samples believe that their students prefer an application that will help them in improving their knowledge about studies. Therefore this application will be more useful nowadays.

V. FUTURE WORK

The application can be designed for all the students from Grade 1 to Advance Level. And

also this application can cover all the subjects that are taught in the school. Moreover voice commands can be added to interact with the students and touch inputs can be implemented.

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