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**INSTITUTE OF INFORMATION TECHNOLOGY**

**“MOBILE COMPUTER AIDED INSTRUCTION FOR SCIENCE IN GRADE 8 LEVEL OF SAN VICENTE NATIONAL HIGH SCHOOL”**

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**Chapter 1**

**Introduction**

**Background of the Project**

In highly changed and the technologically dependent world, education has its fair share of modern challenges. Old teaching methods such as ―chalk-and-talk, known as a traditional teaching method in which teachers address students by using a board to provide examples or illustrations, are giving way to newer strategies (Chalk and Talk). Traditional methods of teaching have been undergoing changes influenced by new techniques and technologies. One of the teaching modern based on the use of information system resources is Computer Aided Instruction (Mofeed M. Aql, 2005).

Mobile Computer Aided Instruction (MCAI), diverse and rapidly expanding spectrum of computer technologies that assist the teaching and learning process. Examples of MCAI applications include guided drill, practice exercises, computer visualization of complex objects, and computer-facilitated communication between students and teachers (Douglas N. Arnold, 2010).

In Turkey, a lot of researches have been done about CAI. These researches resulted in very different results. Some of the researches found CAI as useful for students’ development (Bryan, 2006; Çepni *et al*., 2006; Wilder, 2006; Liao, 2007). Research findings show that the use of computers in Science and Math courses as a tool towards application makes the lessons more interesting and encouraging and so makes the more complex Science concepts be learnt permanently and in an effective way (Halis, 2010).

In the Philippines, as technology advances rapidly, educational institutions are trying to embrace the new trends in the teaching-learning process. Both basic education institutions and Higher Education Institutes (HEIs) have initiated actions to provide quality and IT-enabled education. The formulation of policies and standards by the Commission on Higher Education (CHEd) for IT Education in the Philippines has increased the prioritization and implementation of IT in the teaching-learning process in most schools (Marcial, D. E.,2012).

San Vicente National High School is one of the public school of Panabo City built by many years ago. This institution used traditional teaching and some sort of technology. Teachers applied many ways of teaching and different strategies in order to deliver the lessons well and catch the attention of the students but despite those progress and admirable efforts, still, the teachers need more help in educating the students.

**Objectives**

**General objective**

The project aims to develop a Mobile Computer Aided Instruction for Science in Grade 8 level of San Vicente National High School.

**Specific objective**

Specifically, this project aims to meet the following objectives listed below;

1) Allow users to create an account;

* 1. Student; and
  2. Teacher.

2) Provide an interactive lesson;

3) Provide video tutorials in every lesson;

4) Provide simulation in every chapter;

5) Provide upcoming announcement;

6) Allow the teacher to update quizzes;

7) Allow students to view quiz results;

8) Allow to record the score of the students after taking the quiz.

9) Generates the following reports:

9.1) Quiz results

9.2) Chapter summary

10) Allow the user to use the application in online and offline mode.

**Significance of the Project**

**Teachers.** The Mobile Computer Aided Instruction (MCAI) software will provide an improvised visual presentation of topics that will minimize the efforts of the teachers regarding the teaching or present the lessons to the students.

**Students.** The MCAI software will provide interesting and enjoyable ways of teaching using different video discussion that will help the students to be motivated and be more attentive regarding with the lesson being presented.

**System Developers.** It helps the system developers to enhance their thinking skills while gaining expertise. It also edify their self-esteem.

**Future Developers.** The project will serve as a reference and a guide for the IT students who will develop software similar to this project.

**Scope and Limitations of the Project**

The project focuses on the enhancement of instructional material in Science subject for the grade 8 level of San Vicente National High School. The system will provide interactive presentation through multimedia application to enhance students learning competencies.

The system will have two accounts, for the teacher and student. The teacher controls the administrator modules and it can perform the adding, editing and deleting of quizzes and lessons. The teacher can create reminders for the upcoming activities of the students. In the students’ interface, the students can receive notification for the reminders created by the teacher and it will utilize a simple presentation to show the concepts of simulations and videos.

However, this instructional tool does not include the generating of student’s examination questions or materials; the students cannot delete nor change the quiz questions; they cannot access the viewing of their grades unless permitted by the teacher and all the students activities in their account is monitored by the administrator. The system can only compute the quiz result and it will never show the final grade of the student. If it is offline mode, the data will save to the internal storage and if it is online, all the information that is being saved will automatically direct to the central repository.

**Operational Definition of Terms**

**MCAI (Mobile Computer Aided Instruction)**. A self-learning technique , usually offline/online, involving interaction of the student with programmed instructional materials.

**Science.** Is the subject chosen by the developers to create the Mobile Application. This subject uses observation and experimentation to describe and explain natural phenomena.

**Reports.** These are the generated documents and files by the system.

**Simulations**. Refers to a variant of [cognitive tools](http://edutechwiki.unige.ch/en/Cognitive_tool), which is to allow students to test the hypothesis and more generally "what-if" scenarios.

**Activities.** It is designed to allow students to get more involved in educational task.

**Quiz.** It is a brief [assessment](https://en.wikipedia.org/wiki/Educational_assessment) used to measure growth in knowledge, abilities of the students.

**Students.** A person studies science subject and at the same time the primary user of the system.

**Videos.** These are the technology of electronically capturing, recording, processing, storing, transmitting and reconstructing sequence of images representing scenes in motion used to develop this study. These are video representations of lessons that will help students learn science with more fun and exciting way.

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Figure 6. Cordova

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Figure 7. Photoshop CS6

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Figure 8. Sublime Text 3

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Figure 9. XAMPP

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