

I-TECH GAME FOR ICS, ISPSC SANTA MARIA CAMPUS

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Chapter I

INTRODUCTION

Project Context

Students who are playing computer and other online games are greatly discouraged due to the notion that it decreases the learners' ability to think and perform tasks. On the other hand, computer games are simply perceived as source of entertainment and recreation. The negative thought arose when the birth of the games which display harsh and cruel acts took place. Behind these negative connotations lie the positive effects of engaging oneself into the game world. Actually, the benefits of playing computer and online games are the reciprocal of the perceived negative effects. Plenty of computer games are educational and informative, thus, improving the gamer's ability to comprehend and perform tasks. In playing, the learners ability to solve problem, think logically and critically is being utilized and being enhanced through the varied levels of difficulty of the game being played. A gamer can also acquire new knowledge through playing.

A great example of an online game which can enhance one's thinking ability is the Text Twist. This game needs a player's wide range of vocabulary in the English language. Nowadays, students have a very low level of achievement in terms of their vocabulary, especially in the English subject. According to Jimenez (2010), in her article in Sun Star,



Filipino students have poor achievement in the English Language due to poor command of the teachers in the language. Computer and online games provide the necessary supplement to the lessons taught inside the classroom. Through the game, a student/player is forced to widen his/her vocabulary by reading English printed materials and going over the dictionary for the player cannot move on to the next level if the current level is left unanswered. Thus, a positive effect of playing computer game is not only the enhancement of cognitive ability but improving the capability to widen one's mental ability by himself/herself alone.

The best educational games in Michael Biocchi's opinion a blog writer, are those that are based on textbooks. The material and research is already developed. The game does not have to be word for word of what is in the textbook (this would involve partnering with the publisher and going through many legal procedures), but it should be relevant to what the students are learning at that level. Hence, testing materials and questionnaires used in the game are derived all from the lectures learned by the students and more so from the upcoming knowledge they would acquire in continuance of their study.

"Edu-tainment" is at its best efficacy with the existence and fast rising technology in our modern days. It touches all sector of society, from young to old folks. Social networking sites, online games, computer-



based or android-based games are definitely on its peak of trend nowadays. Every one of us are so engrossed in utilizing this medium of instruction in acquiring information with the easiest access online. It's absolutely an aid to address the variety of needs of the fast growing society. Thus, it made the developers, conceptualize I-Tech Games for ICS, a compilation of different fun games created and developed by the developers, setting the IT subjects of the institute as its main thought.

The Institute of Computing Studies was established on May 3, 2012 replacing the College of Information Technology with the following programs; Bachelor of Information Technology (degree course), Bachelor of Information System (degree course), Associate in Information Technology, Associate in Computer Technology, and Certificate in PC Operation. In school year 2012-2013 the institute offered a new program Bachelor of Information System. Information system is a program for those who want to become managers in this field. Compared to BS Information Technology, the new program offers promising higher compensation bracket (ispscics.wordpress.com/about-ics).

The proponents of the study had chosen all students of the Institute of Computing Studies as respondents. The respondents were only from the ICS for the reason that the games included in the compilation comprises topics which are in lined with the IT subjects.



The output of the study will be beneficial to the instructors and teachers since these will serve as supplements or even instructional aids which the current trend in education speaks about. Lessons not learned inside the classroom can be acquired through engaging in the educational and informative type of games.

Statement of objectives

The aim of this study is to create and develop an I-TECH GAME for the Institute of Computing Studies, Ilocos Sur Polytechnic State College, Sta. Maria Campus.

Specifically, the study aims to attain the following:

1. To identify genre of electronicgames that ICS students students usually playing.
2. To design and develop I-TECH Game
3. To test the usability of the developed I-Tech game

Purpose and Description

Students. The output of this study may improve and test the knowledge of students in their respective fields

Researchers. This work will provide wide opportunity for the proponents to apply their ability in building up the game and gain additional knowledge in the conduct of the study.



Future Researchers. The output of this study may serve as reference and basis for the incoming students who will be making their systems to whom will it be offered. To offer stakeholders and writing their capstones.

Scope & Limitation

The study was focused in developing a compilation of fun and informative games. In the game, the players can choose different games. Each game contains exciting modes, stages and levels that covers IT subjects. Each level has a time limit wherein the player needs to give the answer before the time ends. Players can quit from the game and return to main menu to choose another game to play.

The game was limited to IT subjects and can only be run through personal computers and not for mobile phones. The application is limited to single players and can only run through Windows platform.



Chapter II

REVIEW OF LITERATURE

Computer Games for Learning

Computer Games for Learning describe three genres of game research: The value added approach, which compares the learning outcome of students who learn with a base version of a game to those of students who learn with a base version plus an additional feature; The cognitive consequences approach, which compares learning outcome of students who play an off-the shelf computer game for extended periods compared to those of students who do not; and the media comparative approach, which compares the learning outcomes of students who learn material by playing game to those of students who learn the same material using conventional material, (R.Mayer,2014)

Word Games Puzzles

Spoken or board games are often designed to test ability with language or to explore its properties. Word games are generally engaged as a source entertainment, but have been found to serve an educational purpose as well. For instance, young children can find enjoyment playing modestly competitive games such as Hangman, while naturally developing important language skills like spelling. Solving crossword puzzles, which requires familiarity with a larger vocabulary, is a past



time that mature adults have long credited with keeping their minds sharp. (*Wikipedia.com*)

Quiz Game

A quiz is a form of game or sport of the mind in which players (as individuals or teams) attempt to answer questions correctly. In some countries, a quiz is also a brief assessment used in education and similar fields to measure growth in knowledge, abilities, and or/ skills.

Quizzes are usually scored in points and many quizzes are designed to determine a winner from a group of participants – usually the participant with the highest score. In an educational context, a quiz is usually a form of students assessment, but often has fewer questions of lesser difficulty requires, (*Wikipedia.com*)

4 Pics One Word

4 Pics One Word is a word puzzle game created by LOTUM GmbH, available for free android and ios. 4 pics One Word game is very simple: each level displays four pictures linked by one word- the players aim is to work out what the word is, from a set of letters given below the pictures. The game is free, and devoid of any in-game advertising, micro transactions are available to help the user progress through the game more quickly, (*Wikipedia.com*)

**Visual Basic**

Alan Cooper created the drag and drop design for the user interface of Visual Basic. A programmer can create an application using the components provided by the Visual Basic program itself. Visual basic is a third- generation event-driven programming language and integrated development environment from Microsoft for its COM programming model first released in 1991. Microsoft visual basic to be relatively easy to learn and use. Visual basic was derived from basic and enables the rapid application development of graphical user interface applications, access to databases using data access objects and remote data Objects.

(*Wikipedia.com*)

Adobe Photoshop

Was created in 1988 by Thomas and John Knoll. Since then, it has become the de facto industry standard in raster graphics editing. Photoshop has vast support for graphic file formats but also uses own PSD and PSB file formats which support all aforementioned features in addition to raster graphics it has limited abilities to edit or render text.

(*Wikipedia.com*)

The proponents used the visual basic and My SQL as its database. Visual basic language a development environment programming model and My SQL is a fast, reliable database that integrates well with Visual basic and is suited for standalone applications.

**BIBLIOGRAPHY****Online References**

Biocchi, M. "Educational Games Part III: Their 'Educational' Characteristics" Retrieved: September 10, 2014, from <http://etcjournal.com/2012/01/28/educational-games-part-iii-their-educational-characteristics/>

Mayer, R. Computer Games for Learning. (2010). Retrieve on December, 2014 from <http://mitpress.mit.edu/books/computer-games-learning>

Knoll, John Adobe Photoshop. (1988). Retrieve on November 2014 from http://en.wikipedia.org/wiki/adobe_Photoshop

NeoK12 Quiz Game. Retrieve on November 2014 from www.neok12.com/about-us.htm. Source

4 Pics One Word. Retrieve on November 2014 from http://en.wikipedia.org/wiki/4_pics_1_word

Word Game. Retrieve on November 2014 from http://en.m.wikipedia.org/word_puzzle

Quiz. Retrieve on November 2014 from <http://en.m.wikipedia.org/wiki/quiz>

MySQL. Retrieve on November 2014 from <http://en.wikipedia.org/MySQL>

Visual Basic. Retrieve on November 2014 from www.amazon.com/visual-basic

Software Usability Measurement. Retrieve on November 2014 from www.sumi.com