

INTERACTIVE LEARNING SYSTEM

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ABSTRACT

Interactive Learning System is a web based system that handles learning module where students can download learning materials and view video tutorial, test and evaluation module where students test his/her own ability, chat interface module where users can communicate with each other, facebook share module that is used to share the site to a specific or a group of people, school information module where it give school latest news, contact information and site map and the maintenance module where administrator can change and update information in the system. With this system, it enables the students to be updated in any information of the school and acquire learning even their Instructor is attending seminars and trainings. The Implementation of the Interactive Learning System is managed by the Administrator. He/she is responsible for registering the users which include the students and Instructor. However only the instructor can add student in his/her class. The project used the developmental project design where the researcher designed a system that aimed to provide a well-managed and well secured interactive learning system. The researcher conformed to the Rapid Application Development (RAD) technology as appropriate to produce a prototype that allows selected respondents to give feedback and request for additional functionalities for the improvement of the project. This interactive learning system was developed using front and backend technologies like the Javascript, CSS, MySQL, & Wamp Server. The system has a good user interface design wherein the administrator, students and instructors with specific privileges can access and manage the system. This system is recommended to be implemented in SDSSU – Cantilan Campus.

Keywords: Interactive Learning, Web based, Learning Modules

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INTRODUCTION

Advances in internet technologies have led Universities to utilize the internet for delivering online course materials. Online learning materials are mostly developed as interactive multimedia and are implemented for web delivery.

Interactive Learning System is an online system which helps students to learn. It allows more effective interaction between students and instructor. Apart from learning the modules, this online system also allow students to communicate or ask questions to instructors using communication mediums like chat and to test the interests of the student in learning the module, a sample quizzes are integrated. To promote and create opportunities for group work, the system used Facebook to allow users to share the site with their friends or specified groups of people.

White and Larusson defined Learning System as an online, digital environment that allows information to be shared between students and faculty and provides access to content and administrative features for specific course [13]. Likewise, Kumar Allu stated that the use of interactive learning has become an important component of the online teaching and learning experience [2]. These components of the learning experience seem to be successful and well-liked by students. Bosco reviewed 75 learning studies and found that learners learn faster and have better attitudes toward learning when using interactive multimedia [4].

One of the problems of traditional learning is that it requires a considerable amount of unguided student time outside of the classroom to enable understanding and long term retention of content. It also places students in a passive rather than an active role which hinders learning. Another aspect is that student sometimes cannot acquire learning from their Instructor because of his/her attendance to meetings, seminars or trainings.

With the Interactive Learning System, it provides a way for students to learn and test his/her learning without the presence of the Instructor. If they encounter problems with the topic, they can ask question via chat. Aside from that, each topic can stand alone, students can delve deeply into the topic areas they need to learn and skip over the ones that they do not. Interactive Learning System proves to be great. Students have the chance to study in their own time and especially for free. It represents a great way to boost the level of self-motivation and self-discipline of students.

Conceptual Framework of the Study

This study was anchored on the concept of Kumar Allu of which this interactive learning system is designed to help student learn [2]. With this system, it allows students to communicate to their professors and implement the Test and Evaluation Module enabling

faculty to track student's interest in learning the modules. Integrating facebook icon also makes it possible for the students to share the site. The online system is cost effective and accessible any time.

The framework of the study is presented in Figure 1, the IPO (Input-Process-Output) Diagram. The first box contains modules that are included in the system. These modules are the features incorporated in the system which include the learning module which consist uploaded learning materials that can be downloaded by students, test and evaluation module which provide online exam, chat interface module that provide chatbox, facebook share module provide facebook icon that is used in sharing the site, school information module and maintenance module that manage the security of the contents of the system. The second box in the diagram presents the process box. This contains ways and means through which the inputs and technical specification could be represented, processed and converted to desired outputs. This specification is illustrated using modeling tools in the form of the Use Case Diagram with Use Case Relationships and Use Case Description and software tools as the front and backend technologies. The third box represents the desired output which is the general objective of the study, the Interactive Learning System of SDSSU.

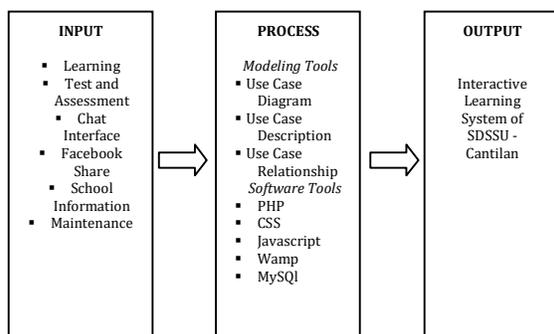


Fig.1. IPO Diagram of the System

Statement of Purpose and Objectives

General Objective:

The study aimed to design an Interactive Learning System for Surigao del Sur State University.

Specific Objectives:

Specifically, the project provides:

1. Learning Module
2. Test and Assessment Module

3. Chat Interface Module
4. Facebook Share Module
5. School Information Module
6. Maintenance Module

METHOD

The study used the developmental project design where the researcher designed a system that aimed to provide a well-managed and well secured interactive learning system. During the timeframe of the project, The researcher follow the Rapid Application Development (RAD) methodology, as shown in Figure 2, since its concept developed a product faster and of higher quality.

The **Rapid Application Development (RAD)** is a software development methodology that uses minimal planning in favor of rapid prototyping. A prototype is a working model that is functionally equivalent to a component of the product. In RAD model, the functional modules are developed in parallel as prototypes and are integrated to make the complete product for faster product delivery. Since there is no detailed preplanning, it would be easier to incorporate the changes within the development process. RAD projects follow iterative and incremental model and have small teams comprising of developers, domain experts, customer representatives and other IT resources working progressively on their component or prototype. The most important aspect for this model to be successful is to make sure that the prototypes developed are reusable.

RAD divides the process into four distinct phases:

Requirements planning phase – This phase combines elements of the system planning and systems analysis phases of the Systems Development Life Cycle (SDLC). Users, managers, and IT staff members discussed and agreed on the business needs, project scope, constraints, and system requirements. It ended when the team agreed on the key issues and obtained management authorization to continue.

User design phase – During this phase, users interact with the systems analysts and develop models and prototypes that represent all system processes, inputs, and outputs. The RAD groups or subgroups typically use a combination of Joint Application Development (JAD) techniques and CASE tools to translate user needs into working models. *User Design* is a continuous interactive process that allows users to understand, modify, and eventually approve a working model of the system that meets their needs.

Construction phase – This phase focused on program and application development task similar to the SDLC. In RAD, however, users continue to participate and can still suggest changes or improvements as actual screens or reports are developed. Its tasks included programming and application development, coding, unit-integration and system testing.

Cutover phase – This resembles to the final tasks in the SDLC implementation phase, including data conversion, testing, changeover to the new system, and user training. Compared with traditional methods, the entire process is compressed. As a result, the new system is built, delivered, and placed in proper operations.

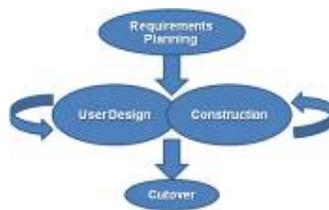


Fig.2. RAD Model

This study also was interpreted by means of retain use case diagram.

Use Case Model of the Interactive Learning System

A **use case diagram** is a graphical model that summarizes the information and roles of the actor. It shows the events and process of the system.

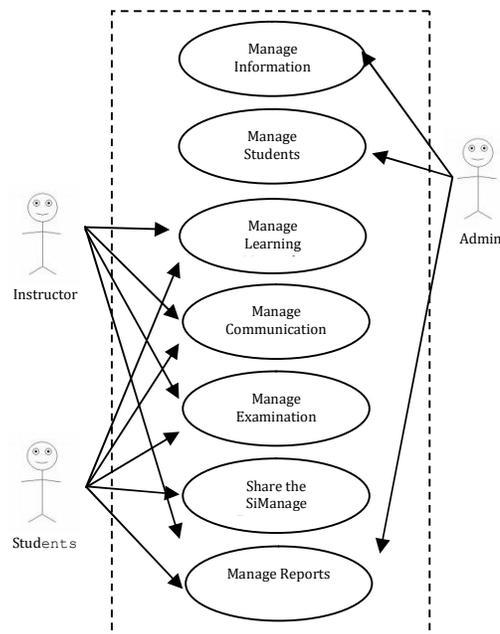


Fig.3. Use Case Diagram

RESULTS AND DISCUSSION

These specify a behavior or function of the system. These include the essential operations and activities that a system must be able to perform.

Provide Learning Module



Fig.4. Instructor Home Page

Figure 4 shows the home page of the instructor. This page includes class, subject and student. The Instructors can add a subject and student in a class. The interaction is done in a class page. The Instructor can upload a file in any form. This page also includes video tutorial.



Fig.5. Student Home Page

Figure 5 shows the Home Page of the Students. It includes a Class Page where students can view the uploaded files of his/her Instructor. The student can download the files.

Provide Test and Assessment Module



Fig.6. Examination Page

This displays the page where the instructor can create examination. The Instructor clicks the add question button to add question to his/her examination and can add question. The question page is displayed. If students already take the examination, the instructor can automatically view the result of his/her students in particular class.

Provide Chat Interface



Fig.7. Chatroom

This figure displays the chatroom of the students and Instructor. He/she can ask question to his/her instructor or those students who are of the same class.

Provide Facebook Icon



Fig.8. Icon

This exhibits the Facebook icon that is used to share the site and any uploaded materials.

Provide School Information Module



Fig.9. SDSSU Homepage

This shows the homepage of the Interactive Learning System for SDSSU Cantilan. These pages include the latest news of SDSSU, Site Map, School Directories and School Information.

CONCLUSION

The researcher concluded that Interactive Learning System of SDSSU Cantilan greatly help the students as well as the Instructor. The learning process is highly accessible in nature. Once the user can access the Interactive Learning Site, students can browse their course content from anywhere and anytime. These allow students to learn for themselves. Interactive learning system not only views different courses but also activities and quizzes to test the learners knowledge. These quizzes and activities can help student assess his/her own ability. Having the chat interface module, it would be easy for the student to ask questions about specific course content in a convenient way. This in turn can help instructors monitor not only what students are doing but also what difficulties they have encountered.

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