**Chapter 2**

**REVIEW OF RELATED LITERATURE AND STUDIES**

This chapter presents a comprehensive review of related literature and studies conducted which are related and relevant to the present study.

**Related literature**

**Foreign Literature**

In the booklet entitled Building an Automated Student Record System (2000) stated: “When student records are added to overall management information system that includes information on staff, materials, and budgeting for the school or school district, more management activities can be accomplished and efficiency will be improved.” The importance of using computerized records of information can lead to higher productivity for an organization. Every data that is stored in a computer database could easily retrieve and transfer when it is needed.

Automated Student Record System purpose to provide a stand-alone guide for local and state education agencies faced with the task of designing a new or upgrading an existing automated student information system. The book could be helpful in developing online information system. This document was commissioned by the National Education Statistics Agenda Committee (NESAC) of the National Forum on Education Statistics (a part of the National Cooperative Education Statistics System) and funded by the National Center for Education Statistics (NCES) of the U.S. Department of Education. The book reviewed the advantages of using a student’s record system. Some of the advantages that were mention are cost savings and cost avoidance, quicker response, accuracy, getting the needed information, moving data among different education agencies

According to Eric Yu in his book (2004) entitled Information Systems (in the Internet Age) , “the Internet has already changed how people work, communicate, or even socialize. Many of the changes can be attributed to information systems that now operate widely over the Internet. Internet computing is changing the scope and nature of information systems and of information systems work”. Internet becomes more important for everyday task of different organization today. The use of information system has become popular. However, internet has affected the use of information system. Transferring data and information becomes easier. The combinations of computers and internet had leads to the growth of different societies, organizations and even universities. The environment in processing most of the task changes by using web-based information system. Most of the universities already came up to develop an off-line information system. Even without the use of internet the system is still very useful. As the computers automatically compute different data many of the staff task have been reduced. As days passes by, internet became more popular and most of information’s system have develop and converted in a web-based system to became more accessible for many users.

“Worldwide, Microsoft has committed more than US$250 million in cash grants over 5 years to government agencies, businesses and schools. In the Philippines, in 2004 alone Microsoft invested US$2.5 million or P125 million in the program, a testament to its long-term commitment to assist local schools, teachers and partners. Through the PiL program, an ICT-enabled infrastructure has already trained more than 3,000 public high schools nationwide. PiL has also forged an online network of over 4,000 teachers nationwide” as stated in the article written by Microsoft Philippines entitled of Making Filipino Teachers and Students Digitally-Literate. (Microsoft Philippines, 2014)

“The aim of PiL was to empower teachers and students to achieve their fullest potential by providing greater access to the latest computer technologies, comprehensive ICT skills development and locally-tailored training for teachers on ICT integration into curriculum and learning” as said in the article. It is very important today that every school must be update and learn how use the different discoveries on technology, as the world have grown and still growing in knowledge. Humans do not stop on learning, knowledge and abilities of different individuals are not limited in any point. Higher discoveries will still go. That is why schools must be ready to use all of this and come up for must better way in stepping across the limit.

## An article entitled [PH is fastest growing Internet audience](file:///G:\PH%20is%20fastest%20growing%20Internet%20audience%20-%20Filipino%20Express,%20Inc_files\PH%20is%20fastest%20growing%20Internet%20audience%20-%20Filipino%20Express,%20Inc.htm) written by Filipino Express stated: “In the Philippines, out of the 105 million people, 37.6 million people are internet users, 34 million of whom are Facebook users. They spend about six hours and 12 minutes per day, four hours and one minute of it are spent in social media” (Filipino Express, 2014). Most Filipino spent their time in surfing in the internet; they prefer to use the internet than in a published book for searching information. That is why different universities in the Philippines decided to use and develop a web based information system or official website for their school. As years passes by, the population of students in the Philippines have been larger, High school graduate student who wants to continue their study are more likely to search the internet to find college schools. They are searching the course that available in specific schools. Also they also check out all the requirements needed in enrollment. It is convenient for them to visit the site of a school than to personally visit the actual location of the school. There are more benefits that give of an official site or a web-based system for schools. Actually this site acts already as an advertisement for the school itself.

“The Food and Agriculture Organization of the United Nations (FAO) is implementing the project Establishment of the Food Security Information System in the Philippines (PhilFSIS)” stated in an article entitled Price and food security update Philippines Issue 16 wfp.org (2013). “The PhilSIS is envisioned to be a web-based information system that would strengthen food security planning, implementation and evaluation through improved organization, analysis and dissemination of relevant data and information in the Philippines. It will be a one-stop-shop information system with the aim of storing, retrieving, sharing and analyzing statistical data, and disseminating relevant data, reports and other information related to food security in the country at the national and sub - national levels”.

Even different government agencies today have been using information system. Large amount of data and information have been handle by this agencies. Manually computing them is impossible for any individual. Computers are very useful in this part. Thus computers can calculate vast amount of data in just few minutes or an hour compared as to what human can do.

**Related Studies**

According to Chandrinos and Trahanias in their research study (2000) entitled Beyond HTML: Web-Based Information System: “A Web-based architecture should serve as the connecting glue between subsystems developed or even executing on different platforms. It presents excellent modularity and openness per component. It also allows for extremely fast prototyping. Since nowadays the time factor seems to have shifted from the speed of software execution to the time-to-completion of a reliably working application (or project) we consider this latter aspect of Web-based architecture very critical. The same architecture imposes uniform interfacing to the data over different platforms, except for minor differences in the layout of each browser”.

Architecting the interface design of a system is of the very important part where the developer much thinks well. Sometimes designs of interface of the subsystem are not fit to different platform where developers must be crucial to this part. Developers may find the he needs to make lot of prototyping that could fit for different browsers for every subsystem he will be develop while considering the future users of the system. Sometimes it is really hard to develop an interactive interface where a system could be friendlier for different users. As the technology has been more improve in our day. Most gadgets today have an access of internet. However, different gadgets like tablets and cell phones have different size of screen. Architecting the interface of the system while considering

Different size of the screen and different browser is very difficult part for most of the developer. However he may choose to find some more easy way or strategy to do this task.

A study entitled Online Interactive Home Work Grading System (Jenq et al, 2004) said that, “We have developed a Web-based Grading System (WGS) The system has several components including online assignment submission, an interface for students to read, review and assess their assignments, check their graded assignments. WGS is a Web-based application and can interact with the user through a Web browser. Javascript is used for client side validation. Apache Tomcat is used as the web server. Servlet is used for server side programming. MySQL serves as the database backend. Structured Query Language (SQL) is used for composing the queries to access the database”. Grading system is one of the important parts of online information system. Retrieving and updating students information is an important task where could in using the information system which grades of students are included. However the developer much consider different computer language in handling the task, he may use server side programming language such PHP, ASP etc. or client sides such as JQUERY, Javascipt, C# etc. or he may choose to use both. However he much thinks to handle this properly because different error may encounter. There are lots of problems and difficulties may encounter while considering all task that will be made by the system. In fact different issues have been already arising until these days about developing information system. Developer may refer on these different issues to come up for a well design information system.

According to Erwin A. Alampay in their study (2010) entitled Monitoring Employee Use of the Internet in Philippine Organizations: “The connection to local/wide area network could extend the sharing of files, documents and other information beyond the domains of the company. Also, the vast array of information that the Internet contains can be useful for many types of work and serve as catalyst for innovation and new ways of thinking. It allows organizations to work with customers across the globe at a minimal cost. It can also promote improvement in employee efficiency, productivity, and extend training and professional development to employees without high travel expenses and much time taken away from work. As such, companies are able to establish their branches and assign tasks in many parts of the world”.

Different companies use the internet to improve their productivity, this is also applicable for different universities or schools in processing their task. Developing a web based information system for school would be beneficial not only for the staffs but also for students and faculty. Submitting, computing and checking of grades are common things which schools could have encountered problems. However a web- based information system could handle much of this.

In the study entitled Online Enrollment System of Liceo de Cagayan University. Researchers stated: “One of the factors considered in designing the proposed system is the lack of manpower to accommodate all enrollees. Also considered are the tedious task of filling out the application form and the inaccuracies of information provided by the students. These factors cause enrollment delay, which is disadvantageous to the enrolment personnel and the enrollees” (Binayao etal. 2010).

The study aimed at creating a system that would provide another option for enrolling and that would compensate for the school’s lack of manpower and time-consuming system. By creating this system researchers found this as a solution for difficulties encountered of Liceo de Cagayan University. Researchers have been inspired by viewing the Online Enrollment System of Cavite Maritime Institute. Browsing these related sites could be helpful for creating more reliable system, as the study involves proper records handling, tracing the constraints and evaluation of the manual system which is essential for creating a new web based information system.

The study of Dacuycuy‐Pacio (2013) entitled Online Student Information System of Benguet State University said: “Most universities switch of the online‐based system because of its affectivity to acquire process, store and retrieve information from the Internet”. Because of the rapid development of different technology most people today are now able to use of internet in everywhere. Commonly even children have learned to use computer cause by different gadgets that could see everywhere.

The influence of technology has become more powerful in our day. Most students today even in elementary known already how to use the internet. Before, the Benguet State University have already using a semi ‐ computer based system and paper‐based student information system. However, staff finds it tedious in searching and preparing reports on student’s information and also laborious due to repetition of processes done in filling and updating of records. That’s how the researcher came up to proposed the Online Student Information System of Benguet State University. The researcher aim to generate and disseminate new knowledge and technologies that will promote sustainable resource development and enrich the competent and effective services geared towards efficiency and economy” the current system is inconsistent with the asserted school’s main goals.

**Conceptual Framework**

In figure below the conceptual framework of the proposed system represents how the system should interact with the users in actual. As different users may use cell phone, tablet, computer desktop or laptop with the use of internet to visit and use the proposed system in different activity.

C:\Program Files\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmf

Student & New Enrollees

C:\Program Files\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmfC:\Program Files\Microsoft Office\MEDIA\CAGCAT10\j0285750.wmf

Evaluate & Checking of Grades

Faculty

Internet

Administration

Register & Enroll

Server

Submit & Edit Grades

Confirming registration & maintaining the system

Print Documents

**Figure 1.0 Conceptual Framework of the Proposed System**

As seen in the figure 1.0 student, faculty, and administration are the major users of the system. Every user except of the public user must have an account in the system. Each student or new enrollees may use the system to register in the school and to evaluate their grades. However the administration is the responsible in confirming every registration of each student. Also the administration will use the system to enroll a student. And the system will automatically compute the assessment and print out all the important document of the student. Every instructor may use the system to submit the grades of their students. The public users which include the parents and other people who would like to inquire in the school may also use the system to check out some information in the school like offered courses. It is really convenient for everyone who needs to perform transactions wherever they are and whenever they want. As the system will be uploaded in the internet, anyone could virtually visit the site. The advantage of using an online system instead of desktop software is the system could easily be maintained. Software that is installed in a computer may be damaged or corrupted. However, a system uploaded in the internet will not be affected if some of the devices use to access the system is broken.