



**ILOCOS SUR POLYTECHNIC STATE COLLEGE**  
Sta. Maria Campus, Sta. Maria, Ilocos Sur

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**ONLINE GRADUATE TRACER SYSTEM FOR THE COLLEGE  
OF COMPUTING STUDIES**

**LEONARD P. ANCIANO**

**BEVERLY E. ANQUILLANO**

**IVY C. CABACUNGAN**

**ANDREA NICOLLE M. CABERO**

**ERICKA JOY V. CAÑAS**

**ROJANE BETH G. COPIO**

**ILOCOS SUR POLYTECHNIC STATE COLLEGE**

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## Chapter 1

### INTRODUCTION

#### **Background of the Study**

Today's technology growth has an impact on several aspects of our lives. Each scholastic institution's objective is to create competent and profoundly qualified graduates that can, in the long run, be competitive in a neighborhood and worldwide field. A graduate tracer is a highly effective tool that can provide crucial information for determining the whereabouts and performance of graduates in the workplace. The majority of graduates are having trouble adjusting to life after school. The workplace is constantly evolving. Employers currently tend to provide project-based employment and short-term contracts, while applicants are pickier about job security, greater pay, and better working circumstances (Ow, 2019).

Graduate studies give wealthy people access to information about where graduates are, which may help to broaden viewpoints among chairmen, employees, and understudies. Higher education stands out as one of the primary keys to adjusting to changes in the 21st century's growing and complex difficulties. Higher education contributes to progress in an essential and significant way through its core functions of instruction, research, extension, and generation. The study said that its purpose was to determine graduates' employability (Villanueva, Jr & Binay-an, 2021).

The knowledge and talents of a country's population power, its economy. With increased foreign investment, technological development, and globalization, requirements for skills change. People must develop the skills necessary to be productive and make a living in order to keep up with technological change, and education provides the means to do all of these things. Higher education is valued based



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on its ability to provide opportunities for graduates seeking future jobs while creating a strong professional path, say Higher Education Institutions (Ali & Jalal, 2018).

Based on the findings of additional research on graduate tracers, tracer studies in Indonesia differ significantly from those in other nations in terms of the technique, design, and clarity of their goals. To support the department's mission, the Department of Industrial Engineering at Sultan Ageng Tirtayasa University's Faculty of Engineering claims that a tracer study of its alumni is essential. At Muria Kudus University, the process of implementing the tracer study has gone well, but there are issues because the number of respondents from graduate states who are traced still remains small. Specifically, in the implementation of 2015 to 2019, the respondents who filled out each year consecutively were 33% results with a population target of 1091 (Mayang & Susihono 2019)

Since beginning to offer a Bachelor of Science in Information Technology (BSIT) program in 1999, the Nueva Ecija University of Science and Technology (NEUST) San Isidro Campus has graduated approximately hundreds of students annually. The purpose of this study was to evaluate the employability of BSIT graduates from the year A.Y. 2016-2017 and A.Y. 2017–2018. This study was undertaken because the researchers think that every higher education institution's (HEI) primary duty is to produce graduates who are prepared for the future (Aclan, et.al.2018)

Moreover, the graduate tracer is an effective technique for assessing the employability of graduate batches from the Ilocos Sur Polytechnic State College (ISPSC). It sought to ascertain the respondents' demographic characteristics, the degree to which the program was relevant in terms of skills, the curriculum's structure through the respondents' knowledge of how to impart skills and competencies, and the degree

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of variation between the three dimensions that served as the foundation for the curriculum improvement.

Ilocos Sur Polytechnic State College – Sta. Maria Campus, which the College of Computing Studies is using to trace graduates was Google Form. The link was given to the graduates in order for them to access and answer the survey form. The link is accessible to mobile phones, laptops, or computers.

Keeping abreast with the emerging trends and to cope with this new normal situation, the researchers developed a system to find out the employability of the graduates of ISPSC, especially in the College of Computing Studies.

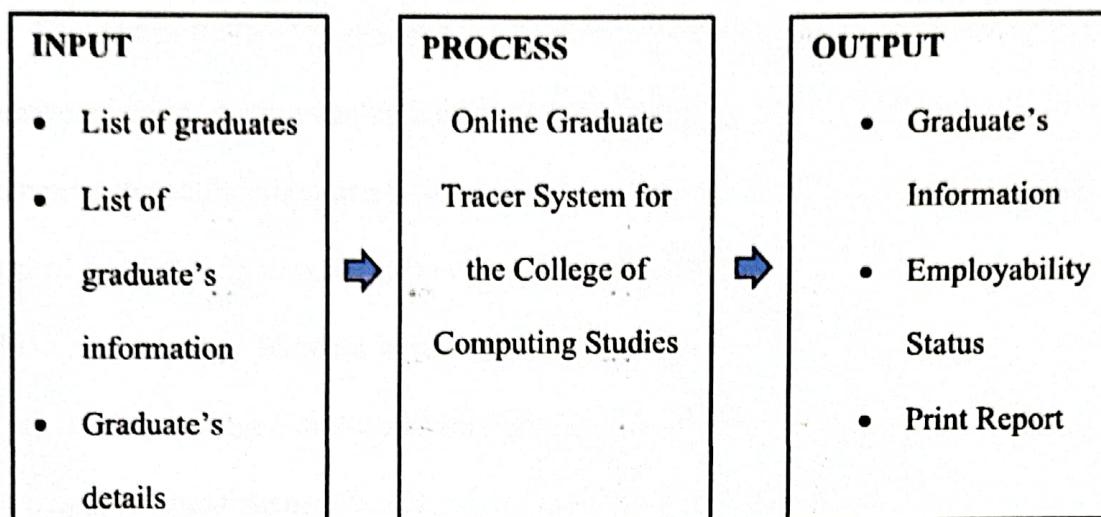
The researchers proposed an online graduate tracer system to provide a more practical, dependable, and effective system to determine employability and gauge the effectiveness of the developed system that is used to transmit data and provide real-time statistical data of the employed and unemployed graduates directly to the server that can be viewed by the administrator.

The findings of this study served as the basis to improve or enhance in order to make the graduates of Ilocos Sur Polytechnic State College – Sta. Maria Campus was more responsive to employment demands.

### **Conceptual Framework of the Study**

Figure 1 shows the Conceptual Framework of the study. It serves how the system develops and shows its process in the study conducted.

Figure 1: Conceptual Framework of the Study



**Figure 1. Conceptual Framework**

### **Objectives of the Study**

This project aimed to design and to develop a Graduate Tracer System for ISPSC. Specifically, the project sought to answer the following;

1. To determine the current process in tracing the employability of CCS Alumni.
2. To determine the functional and non-functional requirements needed for the developed system.
3. To evaluate the acceptability of the developed Graduate Tracer System.

### **Scope and Limitations of the Study**

The study covers the Online Graduate Tracer System for the College of Computing Studies-Sta. Maria Campus. The respondents of the study are graduates from year 2005-2021. The study focuses on the respondent's current job positions and their employability status.

While on the system, the graduates can answer the survey questionnaire needed by the college. They can also delete their previous answer in their employability status and then update another answer if there are changes in their employability.



The admin (CCS Department) can view results and responses from the graduate's answered form. Admin can add, edit, and delete items in the questionnaire. The admin can print the gathered reports based on the information provided by the alumni and print a hard copy of the answered survey questionnaire. The administration of the system has the ability to print the data based on the data collected from the survey form in the system, also included in the administrator sector is the statistical analysis which, here is measured how many percent of the answer to the question of the researchers is divided. The data is divided into three aspects (employed, self-employed, and unemployed.) And its limitations, the users can only answer and update their general information. The system can only trace graduates from a College of Computing Studies.

#### **Importance of the Study**

The study is beneficial for the following;

**The Administrator** can easily monitor the results based on the alumni respondents; they will know if the alumni of the CCS Department are taking a job that is related to their field.

**The Dean/Program Head** can easily trace the employment status of the alumni and will help them to observe if they have been providing the right skills and knowledge to their graduates.

**The Researcher** enhances their knowledge and skills in the development of the system.

**The Future Researcher** can use the developed system as a basis for the improvement or development of a new system.



## **Chapter 2**

### **METHODOLOGY**

This chapter presents the research methodology which includes the **research design**, software model, instrument in data collection, and tools for data analysis.

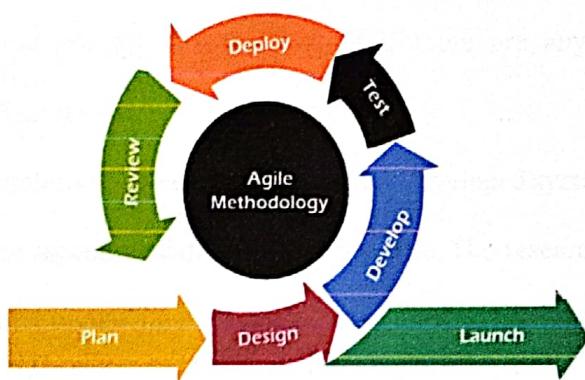
#### **Research Design**

The researchers used the descriptive developmental method to organize and interpret the gathered data from the survey and interview. A descriptive design is also used to elaborate or interpret the results and findings of the study, Online Graduate Tracer System for the College of Computing Studies. Descriptive developmental refers to the type of research that is aimed at obtaining information on the current state of phenomena, Rahi (2017) argues that descriptive methods seek true facts about the current situation. Moreover, this method is mainly used for describing, comparing, analyzing, and interpreting existing data. A development method is now defined as a collection of the research literature directly related to instructional development, implying that outcomes are developed. To put it another way, the descriptive developmental technique is the systematic study of using them to create, produce, and carefully assess educational programs, procedures, and products that must meet the required standards. The researchers developed a survey questionnaire to assess the acceptability and efficacy of the system, and based on the responses they received, they determined and presented the mean range. This approach will aid in the researchers' comprehension and improvement of their perspective of the CCS Department's present graduate program. The researchers followed all the steps to compile data on the BSIT and BSIS graduates between the year 2005 to 2021. The suggested system will evaluate and interpret all the data gathered for the proposed system.



## Software Model

The study used Agile Model by Silverthorne (2022). Agile is a methodology anticipating the need for flexibility that can apply pragmatism to the launched of the final and finished product or a project. The Agile Methodology contains the following phases plan, design, developed, test, deploy, review, and launch. Agile Methodology allows much communication between customers, developers, testers, and managers.



**Figure 2. Agile Model**

**Plan.** The researchers estimated the possible questions and identify if there was an existing system in that particular Department. Asking what tools are used in tracing the graduates and if there are existing graduate tracers in the CCS Department.

**Design.** The researchers designed the physical and logical phases of the system; a physical phase sketched the state of the flow and the features of the system, and the logical phase by arranging the data into a series of relationships and proceeded to code.

**Develop.** In this stage, the researchers started the system to be developed since all the requirements to make the system is already gathered. It is time for the system to go live depending on its complexity. The researchers start the coding for developing the system. The researchers develop the system using different programming languages:



HTML5, Bootstrap, PHP, and WebHost, and uses Atom and Visual Studio as a code editor.

**Test.** Building software is not the end. The tester tests the system's functionality to make sure that everything is working and that the end-user would be satisfied. In testing phase, researchers would note if there are any bugs or defects that need to be tracked, fixed, and later retested on the system with the tester.

**Deploy.** After building the system, it is now ready to deploy and to implement. The researchers would test and try first the system if there are any changes, bugs, installation, and configuration.

**Review.** The researchers reviewed and checked the developed system, as well as the implementation of the recommendations of the panelist. The researchers continue to develop the system after reviewing the features to be fixed.

#### Project Plan

This table shows the timeframe of the study and the process of developing the Online Graduate Tracer System for the College of Computing Studies and there are seven phases of Online Graduate Tracer System for the College of Computing Studies.

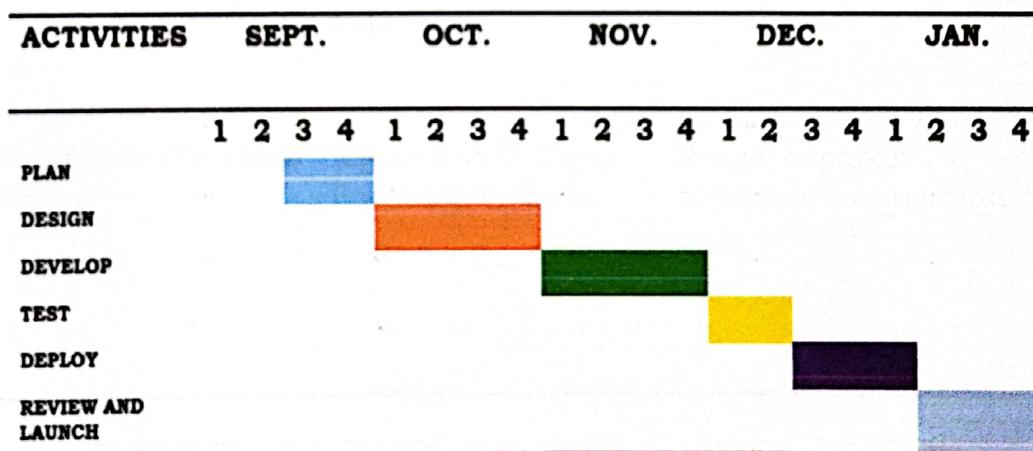


Table 1. The Project Schedule Gantt Chart



### Project Assignments

The project team members' roles and responsibilities in the proposed system, Online Graduate Tracer System for the College of Computing Studies.

Roles	Name	Functions
<b>Project Manager</b>	Leonard P. Anciano	Lead Team, report status review of deliverables and assure quality
<b>System Analyst and Designer</b>	Beverly E. Anquillano Ivy C. Cabacungan	Coordinates the technical team's efforts in resolving challenges and ensuring that solutions are practical and consistent.
<b>Programmer and Developer</b>	Leonard P. Anciano Andrea Nilloe M. Cabero	Framework Content
<b>QA / Tester</b>	Ericka Joy V. Cañas Beverly E. Anquillano Leonard P. Anciano Ivy C. Cabacungan Rojane Beth G. Copio Andrea Nicolle M. Cabero	Responsible for checking the debugging queries of the project. Test the performance of the project.
<b>Documenter/Technical Writer</b>	Rojane Beth G. Copio Ericka Joy V. Cañas	Design the project performance management

**Table 2. The Role Requirements and Responsibility of the Team**

Table 2 shows the requirements and responsibilities of each member in the development of the system. The leader provides and gives assignments to his members according to the skills they have and helps build cooperative teamwork.



### Population and Locale of the Study

The researchers utilized purposive sampling that helped to determine the distribution of respondents.

Respondents	N
BSIT Graduates	15
BSIS Graduates	15
BSIT/BSIS Students	15
Faculty	4
Dean	1
<b>TOTAL</b>	<b>50</b>

**Table 3. Distribution of Respondents**

Table 3 shows the distribution of the selected respondents to participate in the proposed system. The study involves the participation of 15 respondents of BSIT graduates. 15 respondents of BSIS graduates, 15 students of BSIS and BSIT, 4 faculty, and 1 dean of ISPSC Sta. Maria Campus.

### Data Analysis

Questionnaires and interviews served as tools in gathering the data, Mean, Frequency Count, and the following indication: easy to use, satisfaction, usefulness, and ease of learning were needed to treat the needed data to identify the usability of the proposed system Online Graduate Tracer System for the College of Computing Studies.

Point Value	Mean Range	Descriptive Rating	Descriptive Interpretation
5	4.21-5.00	Strongly Agree	Very Highly Acceptable
4	3.41-4.20	Agree	Highly Acceptable
3	2.61-3.40	Neither Agree	Moderately Acceptable
2	1.81-2.60	Disagree	Slightly Acceptable
1	1.00-1.80	Strongly Disagree	Not Acceptable

**Table 4. Descriptive Interpretation on the Level of Acceptability**



The data gathered were categorized from Not Acceptable to Very Highly Acceptable. Mean ranges from 1.00-1.79 described as Strongly Disagree and interpreted as Not Acceptable, 1.80-2.59 described as Disagree and interpreted as Slightly Acceptable, 2.6-3.39 described as Neither agrees and interpreted as Moderately Acceptable, 3.40-4.19 described as Agree and interpreted as Highly Acceptable, and 4.20-5.00 described as Strongly Agree and interpreted as Very Highly Acceptable.

Based on the results of the survey, the following are the responses of the respondents regarding the quality of education of ISPS Sta. Maria Campus:

1. Quality of Education of ISPS Sta. Maria Campus

According to the majority of the respondents, the quality of education of ISPS Sta. Maria Campus is acceptable. This is supported by the following statement of Mrs. Aurora M. Geronimo, Department Head of English and Language Arts:

"The quality of education of ISPS Sta. Maria Campus is acceptable. The teaching faculty is competent, the facilities are good, and the students are cooperative."

2. Quality of Instruction of ISPS Sta. Maria Campus

According to the majority of the respondents, the quality of instruction of ISPS Sta. Maria Campus is acceptable. This is supported by the following statement of Mr. Alfonso C. Geronimo, Department Head of Mathematics:

"The quality of instruction of ISPS Sta. Maria Campus is acceptable. The teaching faculty is competent, the facilities are good, and the students are cooperative."

3. Quality of Curriculum of ISPS Sta. Maria Campus

According to the majority of the respondents, the quality of curriculum of ISPS Sta. Maria Campus is acceptable. This is supported by the following statement of Mr. Alfonso C. Geronimo, Department Head of Mathematics:

"The quality of curriculum of ISPS Sta. Maria Campus is acceptable. The teaching faculty is competent, the facilities are good, and the students are cooperative."

4. Quality of Instructional Materials of ISPS Sta. Maria Campus

According to the majority of the respondents, the quality of instructional materials of ISPS Sta. Maria Campus is acceptable. This is supported by the following statement of Mr. Alfonso C. Geronimo, Department Head of Mathematics:

"The quality of instructional materials of ISPS Sta. Maria Campus is acceptable. The teaching faculty is competent, the facilities are good, and the students are cooperative."