TRAINING MANAGEMENT SYSTEM FOR SOUTHERN LUZON TECHNOLOGICAL COLLEGE FOUNDATION, INC.

LINDSEY M. DATOS
JOSEFINA R. SARMIENTO

AEMILIANUM COLLEGE INC.
Rizal St., Piot, West District, Sorsogon City, Sorsogon, Philippines

Abstract. The main objective of the study was to develop a Training Management System for Southern Luzon Technological College Foundation, Inc., using Agile Development Methodology that centralized the Training and Placement procedure of the Southern Luzon Technological College Foundation, Inc., Legazpi City, Southern Luzon Technological College Foundation Pio Duran, Inc, Pioduran, Albay and Southern Luzon Technological College Foundation Pilar, Inc. Specifically, these were the following objectives in completing the project: First, to design and develop a Training Management System consisting of: 1.1) A module for Training Tracking that will centralized listing of trainees, trainers, and qualification information to track the progress of training; 1.2) A module for Short Message Service (SMS) notification for trainees for fast and convenient dissemination of information regarding the training and placement after the training; 1.3) A module for Portal for each school branch to centralize record-keeping of training 1.4) A Report Module that will generate data reports needed for TPD transaction; The second specific objective is to evaluate/validate the developed system in terms of: 2.1) functionality; 2.2) reliability; 2.3) usability; 2.4) efficiency/speed; 2.5) Maintainability; and 2.6) portability. The developed system generated desirable results based on the findings formulated. The developed system is considered to be "Highly Applicable" as perceived by the different respondents. The developed system is serviceable to SLTCFI, SLTCFPDI, and SLTCFPI. The President/CEO, Schools Administrators, and TPD Employees were the primary beneficiaries. The developed Training Management Tool with an overall mean of 4.65 is "Highly Applicable" to the needs of the clientele: the School Administrators of SLTCFI, SLTCFPDI, SLTCFPI, and TPD personnel perceived by the nine (9) respondents. It passed ISO 9126 – (which is concerned primarily

with the definition of quality characteristics to be used in the evaluation of software products). Therefore, serviceable to the needs of SLTCFI, SLTCFPDI, and SLTCFPI.

Key Words*: Training and Placement, Training Management System, Vocational Training*

Introduction

Nowadays, the approach of the modern generation in different societies is commonly based on the use of advanced technology. In technology-driven societies, human productivity is made more efficient through the development and use of electronic gadgets. Education as a service sector must modernize its procedures and practices. One way to globalize the process of management is to realize that technology is advancing at an incredibly fast pace. "Technology is an increasingly essential part of every aspect of work, in every industry, and managers must keep up-to-date with developments in order to bring the benefits to staff and business profitability."

In this modern age, running a business without computer technology is like trying to breathe without lungs. Technology is increasingly adopted in every aspect of work and recognized as a necessity.   Over the years, the business world is leaning more and more towards technology, making it almost impossible to separate the two from each other. The rapid growth of technology has contributed a lot to progress in all spheres of business industry. The cost of college and university education is becoming expensive year after. With the burgeoning cost on the rise, administrators of schools need to ensure that they have the proper system to monitor schools' activities and programs more efficiently. One of the technologies that can help the industry is the adaptation of the Management System.

Management System is defined as the administration of the information technology system. An effective management system facilitates the delivery of IT as a service and allows the organization's employees to respond to changing business requirements in an agile manner. Management System involves overseeing the design and day-to-day operations of each transaction. It establishes monitoring and quality control procedures. (Rouse, 2019)

Using technology, the researcher is prompted to create a Training Management System for Training and Placement Department. This management system is intended to be used by the Training and Placement Department of Southern Luzon Technological College Foundation Pio Duran, Inc., (SLTCFI), Southern Luzon Technological College Foundation Pio Duran, Inc. (SLTCFPDI), and Southern Luzon Technological College Foundation Pilar, Inc. (SLTCFPI)

The study has been presented to the Board of Trustees and the President/CEO of Southern Luzon Technological College Foundation, Inc., together with the Administrators of two (2) branches during the monthly administrative meeting. It has been discussed that the system should be made for the Training and Placement Department (TPD) of each branch to facilitate the centralization of the listing of trainees especially the record-keeping of the

previously conducted list of trainees since there is an existing Enrollment Management System used in the school. It was agreed upon that the system under the TPD will help the school's operation when it comes to recording of data such as trainees list, trainers list, and qualifications per branch.

Southern Luzon Technological College Foundation Inc., in Legazpi City, is an institution that offers quality and affordable computer education, authorized by SEC on January 15, 1990, to operate with the registration number 174992. The Main College and its branches offer Technical Education and Skills Development Authority (TESDA) Training Programs like 162-Hour Carpentry NC II, 280-Hour Computer System Servicing NC II, 144-Hour Contact Center NC II, 442-Hours Front Office Services NC II, 436-Hours Housekeeping NC II, 258-Hour Masonry NC II, 100-Hour Online Web Marketing and 300-Hour Web Development Solutions, 260-Hour Electronic Products Assembly and Servicing NC II, 436-Hours Housekeeping NC II, 316-Hours Cookery NC II.

SLTCFI started with the programs, two-year Computer Technician (COMTECH) and Computer Aided Architectural Drafting Technology (CADDTECH). In the following year, two-a year's Computer Secretarial was offered. The first batch of COMTECH and CADDTECH graduates was produced in 1997. With the rigorous effort of the people running the institution, the school added a two-year Computer Programmer (COMPROG) program in 2000 and a one-year Computer Technician (COMTECH) in 2001. In its 29 years of operation, a Training Management System needs to be created to cater to the growing needs of the college and its branches as they run short training for TESDA.

Project Context

Managing training must be looked at like all other processes in one shop. It must be viewed as something that can be continuously improved and streamlined. That means identifying and overcoming constraints. The three common process constraints are budget, time, and culture. (Pohl, 2019)

The purpose of the proposed Training Management System for Southern Luzon Technological College Foundation, Inc. (TMSSLTCFI) is to help the Administrators of SLTCFI and its two branches, SLTCFPDI and SLTCFPI, execute, and control all aspects of training management and its placement. TMSSLTCFI will create a trainee and trainers database. The system will be in a web-based platform, which will enable the three school clients to view trainees' records. Development using web-based technology, the TMSSLTCFI will be accessed over the internet in real time. With this, School President and School Administrators will be able to keep track of the progress of their training with ease.

As envisioned, there will be mainly three types of accounts: they are Master Account, Administrator Account, and TPD Personnel Account. The Master Account is the master user; he gets the most priorities than the other users. The Master Account can view the status of all training of the three schools' clients, including the list of training, trainees, and trainers. The Administrator Account can view the status of training which includes the list of training and trainers of each school branch. The TPD Focal Account can only enlist and enroll a list of trainees, trainers, and training. All accounts can send notifications to trainees thru SMS. The Training and Placement officer of each school is the TPD Focal Account holder of the system. The TPD focal person plays an important role in the system. The TPD focal person will log in through an email address and password, and then he will be directed to the dashboard where he gets the complete details of every trainee with different qualifications. This will be the

same dashboard that is seen by the Master and Administrator Accounts. The Administrator Account can add the newly added qualifications. All accounts can also view the complete list of qualifications, list of trainers, and trainees. Searching in all accounts will have the option of search in which he can search the trainee's name using the name, mobile number, and address. The Administrator account and TPD Focal Account will also be provided with an option of sending SMS notifications. TPD Focal Account and Administrator Account can send SMS notifications to trainees. A unique registration ID will be generated for every trainee. Using this ID the placement officer can verify the trainee's records.

Placement is a crucial interface between the stages of completion of training of the students and their entry into suitable employment. This system can send trainees SMS notifications for the tracking of their placement after a month of their completion of the training.

General Objectives

This study delved into the development of Training Management System for Training and Placement Department of Southern Luzon Technological College Foundation, Inc., Legazpi City.

Specific Objectives
Specifically, the study aimed to:
1. design and develop a Training Management System that contains:
   1.1 a module for training tracking that will centralized listing of trainees, trainers and qualification information to track the progress of trainings;
   1.2 a module for Short Message Service (SMS) notification for trainees for fast and convenient dissemination of information regarding the training and placement after the trainings;
   1.3 a module for Portal for each school branch to centralize record-keeping of training; and
   1.4 a report Module that will generate data reports needed for TPD transaction.
2. evaluate/validate the developed system in terms of:
   2.1 functionality;
   2.2 reliability;
   2.3 usability;
   2.4 efficiency/speed;
   2.5 maintainability; and
   2.6 portability.

Table 3.5 - Project Development Time Frame

ACTIVITIES	MONTH 1				MONTH 2				MONTH 3				MONTH 4				MONTH 5				MONTH 6			
	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
PLAN																								
Meeting the Client																								
Conduct Interview																								
Identifying the Problems																								
REQUIREMENTS																								
Documents																								
Interview operations personnel																								
observed manual system																								
USER DESIGN																								
Create Data Flow Diagram																								
Document procedural logic																								
DEVELOP																								

Table 3.5 shows the project development time frame by the developer. The proposed system shall be developed and implemented within a period of six months. The first month will be devoted to the project study; in this period, the researcher will determine if the proposed system is feasible or not by conducting meetings with the clients and making interviews. After determining that the project is feasible, the needed system requirements and functionalities will be determined and tested to ensure the correctness of the determined system standards and requirements. This will be done by gathering operating documents and observation on manual process in the institution. The second month will be devoted to planning. The next month will be devoted to designing the system. After designing, the fourth and the fifth months will be devoted for developing of the system. The remaining months will be for the installation of the system, conversation with the users, and training them on how to use the system after which, review and evaluate the system will be done.

Scope

The scope by geographical area is one of the constraints of the researcher. Since the scope covers widely spread schools: SLTCFI is located at San Roque, Legazpi City, SLCTFPDI is at Bonifacio St. Brgy. 3, Pio Duran, Albay and SLCTFPI is at Pilar, Sorsogon, the researcher sought appointment from every person concerned in connection with the study to solve this constraint.

Plan

In order to gather data necessary for the development of the system as accurate as possible, the developer devised an open ended checklist questionnaire for three different respondents. The Schools' Administrators, Training and Placement Department Heads and personnel, Trainers and Trainees from Southern Luzon Technological College Foundation, Inc., Legazpi City, Southern Luzon Technological College Foundation Pio Duran, Inc., Pioduran, Albay and Southern Luzon Technological College Foundation Pilar, Inc. were the respondents of the study.

The researcher investigated, observed and analyzed the current flow of the Training and Placement Department. The gathered data were collated, tabulated, and analyzed to formulate the best solution identified and encountered by the respondents.

After due consideration and careful analysis of the data gathered, the researcher proposed the Training Management System for Southern Luzon Technological College Foundation, Inc., with the purpose of providing a convenient and reliable system for the Schools' Administrators, TPD Heads and personnel of the school.

Figure 4.1 showed the data flow diagram of the existing system. How the current system of Training Management System of in the Southern Luzon Technological College Foundation, Inc. works.
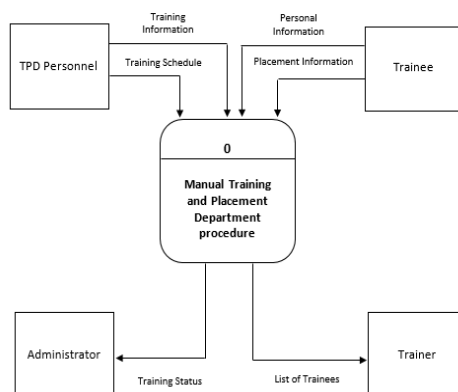
Figure 4.1 - Data Flow Diagram of the Existing System

Requirements

The researcher conversed with the Southern Luzon Technological College Foundation, Inc., Southern Luzon Technological College Foundation, Pio Duran Inc., and Southern Luzon Technological College Foundation Pilar, Inc., Administration the hardware and software materials needed (see Table 3.1, Table 3.2, Table 3.3 and Table 3.4) in the development of the system. From the development to the deployment, the proponent gave a list and explained the details including the time frame (see Table 3.5).

Design

Systems design is the process of defining the architecture, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development.

The purpose of the system design process is to provide sufficient detailed data and information about the system and the system elements to enable the implementation consistent with architectural entities as defined in models and views of the system architecture. The system and software design was prepared from the requirements

identified in the previous phase. The developer thought about what the product or solution will look like.

The conceptual design of the Developed Training Management System is shown on Figure 4.2.
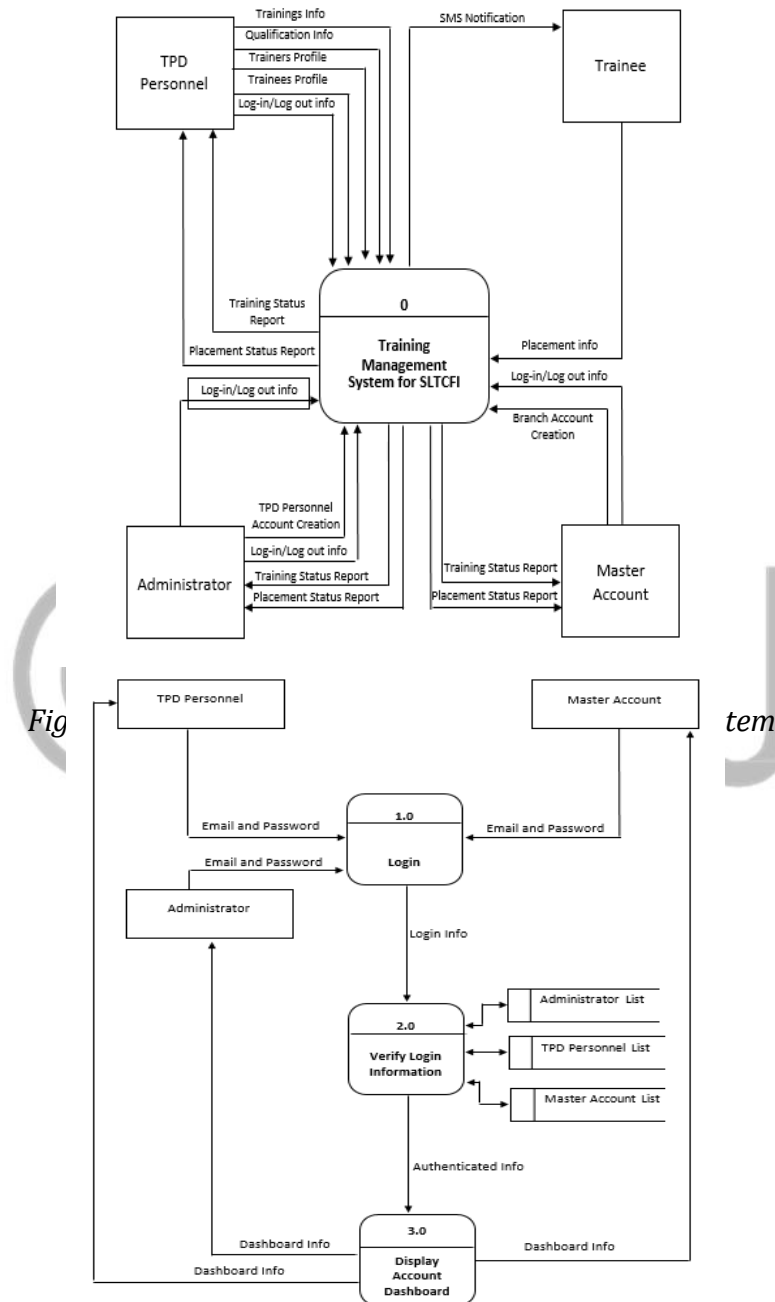

Fig... ...tem

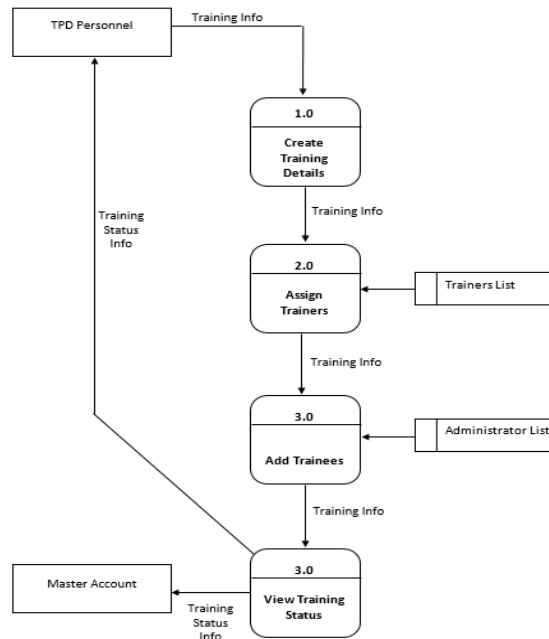*Figure 4.3 - Data Flow Diagram of the Login Module*

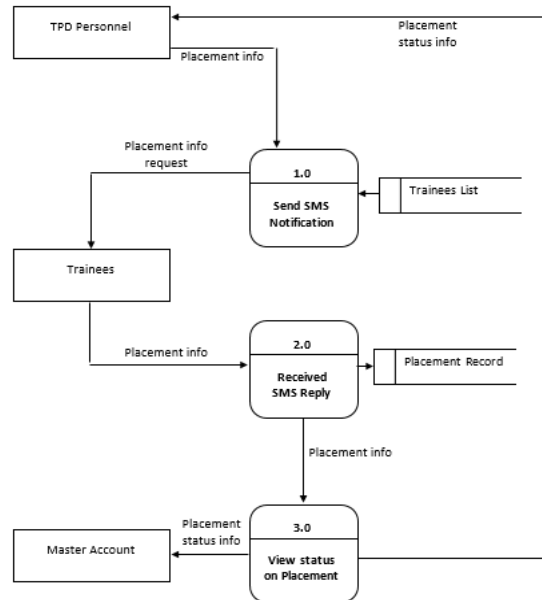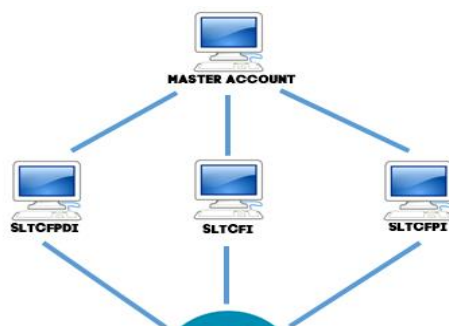*Figure 4.4 - Data Flow Diagram of the Training Tracking Module*

Figure 4.5 - Data Flow Diagram of Short Message Service (SMS) Notification Module

Figure 4.6 - System Architecture of the Developed System

Deployment

After testing for several times, the developed Training Management System is installed to the clientele – the Southern Luzon Technological College Foundation, Inc., Legazpi City, Southern Luzon Technological College Foundation Pio Duran, Inc., Pioduran, Albay and Southern Luzon Technological College Foundation Pilar, Inc., Pilar, Sorsogon. But then, the developer will still track and monitor the software for a year to assure the good status of the developed system.

Summary of Findings

The following findings were obtained from the study:

1. Southern Luzon Technological College Foundation, Inc., (SLTCFI) Legazpi City, Southern Luzon Technological College Foundation Pio Duran, Inc., (SLTCFPDI) Pioduran, Albay and Southern Luzon Technological College Foundation Pilar, Inc., (SLTCFPI) Pilar, Sorsogon is still using a combination of manual and computerized system in the areas of Training and Placement Department used by TPD personnel in all transaction connected into. Most of the transactions that are supposed to be recorded are saved in computer through the use of Forms, Microsoft Excel and Microsoft Word.

2. The developed Training Management System is a comprehensive software tool intended for use by the President/ CEO of the school, School Administrators and TPD personnel which were now ready for deployment and usage of SLTCFI, SLTCFPDI and SLTCFPI. Upon completing the series of intensive testing and with careful evaluation made in the project.

3. The new system was evaluated in terms of functionality, reliability, usability, efficiency/speed, maintainability and portability. Likewise, it was validated by eighteen (18) Respondents to wit; ten (10) IT Experts, and eight (8) users and stakeholders from Southern Luzon Technological College Foundation, Inc., Legazpi City. The eighteen (18) respondents consulted by this study gave a remark that

Training Management System is "Highly Applicable" to the needs of the clientele. Meaning, the system efficiently and effectively satisfied some of the quality model characteristics. In *Functionality* of the system, the overall mean is 4.44 which mean that the system functions "More than what is expected". In the area of *Reliability* of the system, the overall mean is 4.654 which means the system is "More than what is expected"; in *Usability*, the overall mean is 4.663, meaning "More than what is expected"; in *Efficiency*, the overall mean is 4.750, meaning "More than what is expected"; in *Maintainability* and in *Portability,* the overall mean is 4.692 and 4.713 respectively, meaning both "More than what is expected." Thus the system is considered to be "Highly Applicable" as perceived by the different respondents.

Conclusions

Based on the findings of this study the following conclusions are formulated:

1. The developed system is considered to be "Highly Applicable" as perceived by the different respondents. The developed system is serviceable to SLTCFI, SLTCFPDI, and SLTCFPI. The President/CEO, Schools Administrators and TPD Employees were the primary beneficiaries. Most of the transactions that are supposed to be recorded and saved in computers through the use of Printed Forms, Microsoft Excel and Microsoft Word can now be recorded and saved in the new developed Training Management System Tool.

2. The developed Web-Based Project Management Tool with an overall mean of 4.65 is "Highly Applicable" to the needs of the clientele: the School Administrators of SLTCFI, SLTCFPDI, SLTCFPI, and TPD personnel as perceived by the eight (8) respondents.

3. The developed Training Management System Tool passed the ISO 9126 – (which is concerned primarily with the definition of quality characteristics to be used in the evaluation of software products). Therefore, serviceable to the needs of SLTCFI, SLTCFPDI and SLTCFPI.

Recommendations

Based on the conclusions the following recommendations are hereby offered:

1. The current manual system in Southern Luzon Technological College Foundation, Inc., Legazpi City, Southern Luzon Technological College Foundation Pio Duran, Inc., Pioduran, Albay and Southern Luzon Technological College Foundation Pilar, Inc. may be improved through the implementation of the developed Training Management System.

2. With the overall evaluation conducted by the researcher, the system in the perspective of the respondents turned to be "Far more than what is expected", therefore, the system is considered to be "Highly Applicable" as perceived by the eighteen (18) respondents from the: Schools Administrators, TPD personnel from three different schools, and IT Experts.

3. The developed system in the perspective of the respondents turned to be "Far more than what is expected". Thus, system is considered to be very applicable in terms of functionality, reliability, usability, efficiency, maintainability, and portability. Therefore, the newly developed Training Management System may be deployed and used to improve its services.

4. Additional functionalities may be studied and integrated in the new Training Management System to greatly improve the services offered.