

**HIGHER EDUCATION INDUSTRIAL ATTACHMENT SYSTEM**

**22/03/2022**

**A PROJECT PROPOSAL SUBMITTED TO THE DEPARTMENT OF INFORMATION TECHNOLOGY IN THE SCHOOL OF COMPUTING AND INFORMATICS IN PARTIAL FULLFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCE INFORMATION TECHNOLOGY, MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**NAME: NDURURI ERIC MUCHIRI**

**REG NO.: CT203/0004/18**

Table of Contents

[**Table of Contents** 2](#_Toc98831435)

[CHAPTER ONE: INTRODUCTION 1](#_Toc98831436)

[1.1 Background of the study 1](#_Toc98831437)

[1.2 Problem Statement 1](#_Toc98831438)

[1.3 Research Objectives 2](#_Toc98831439)

[1.3.0 Main Objective 2](#_Toc98831440)

[1.3.1 Specific Objectives 2](#_Toc98831441)

[1.4 Research Questions 3](#_Toc98831442)

[1.5 Significance of the Study 3](#_Toc98831443)

[1.6 Scope of the study 4](#_Toc98831444)

[CHAPTER TWO: LITERATURE REVIEW 6](#_Toc98831445)

[2.0 Overview 6](#_Toc98831446)

[2.1 Functions of existing industrial attachment management system 6](#_Toc98831447)

[2.2 Components of existing industrial attachment management system 7](#_Toc98831448)

[2.2.1 People 7](#_Toc98831449)

[2.2.2 Data 7](#_Toc98831450)

[2.2.3 Policies 8](#_Toc98831451)

[2.3 Characteristics/Features of existing industrial attachment management system 8](#_Toc98831452)

[2.3.1 Evaluation 8](#_Toc98831453)

[2.3.2 Supervisor accessibility 8](#_Toc98831454)

[2.3.3 Responsibility 8](#_Toc98831455)

[2.3.4 Reliability 8](#_Toc98831456)

[2.4 Types of existing industrial attachment management system 8](#_Toc98831457)

[2.4.1 Manual system 8](#_Toc98831458)

[2.4.2 Online System 9](#_Toc98831459)

[2.5 Challenges of existing industrial attachment management system 9](#_Toc98831460)

[2.5.1 Lack of orientation 9](#_Toc98831461)

[2.5.2 Lack of Supervision & Care 10](#_Toc98831462)

[2.5.3 Report Presentation 10](#_Toc98831463)

[2.5.4 Laziness by workers 10](#_Toc98831464)

[2.5.5 Inadequacy of Attachment places 10](#_Toc98831465)

[2.5.6 Inadequate Training Equipment 11](#_Toc98831466)

[2.6 Summary 11](#_Toc98831467)

[References 12](#_Toc98831468)

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the study

An Industrial Attachment is a structured, credit-bearing work experience in a professional work setting during which the student applies and acquires knowledge and skills. It involves the application of learned skills in an organization related to the students major. An Industrial Attachment should challenge the student to examine the values of the organization involved in the experience, and to assess the student’s education as it relates to the Industrial Attachment.

The developments of computerized management systems are expanding over the past years and most of these systems are increasingly substituting the manual system. When students report for industrial attachment training, they need to make a self-report manually by filling in the form in the logbooks. While a student is undergoing the training, they have to write in the logbooks activities they have carried. Other than that, students’ performance is also assessed and recorded in logbooks by supervisors after every turn of supervision.

Furthermore, logbooks can easily be damaged. Several studies done elsewhere indicate and conclude that a gap really exists between the quality of graduates produced and what the market demands (Mpairwe,2009).

It is therefore effective to use a computerized system that can effectively control and manage industrial training related affairs.

## 1.2 Problem Statement

The current system of managing attachment activities in higher institutions of learning in Kenya is still characterized by manual and inefficient processes despite the technological innovations and developments. This renders a great challenge in allocating supervisors, monitoring of student activities, managing attachment records and also handling the growing numbers of students undergoing attachment training. Below are issues that arise during attachment periods hence challenging co-ordination of attachment activities.

During attachment, punctuality is affected whereby students are delayed or assessed before due time as per agreement with the institutions involved.

A lot of paperwork is involved for both students and the institution whereby logbooks are used by students to fill in the activities carried out during attachment period and also reports that should be submitted back to the institution. The logbooks and reports may be damaged or get lost hence inconveniencing students at this period.

Some students tend to lie about the places of attachment yet they are not attending to their work place. This makes it hard for the institution to monitor and follow up if the students are attending their field work.

The above problems can be solved by using higher education industrial attachment system.

## 1.3 Research Objectives

### 1.3.0 Main Objective

The main objective is to develop a system that can improve the management of attachment program at higher learning institution and that can also help monitor student and improve management of the attachment program.

### 1.3.1 Specific Objectives

1. To come up with a computerized system as a solution to assist in the management of attachment activities at the University.
2. To develop a system that can monitor student and improve management of the attachment program.
3. To ease field supervisor and lecturer’s job of carrying a follow up on a student during attachment period.

## 1.4 Research Questions

1. How will the computerized system assist in the management of the attachment activities?
2. How will the developed system help to establish a linkage between students and business organizations for skill and career development?
3. How will the developed system help in monitoring students and improve the management of the attachment program?

## 1.5 Significance of the Study

The industrial attachment management system is designed to assist learning institutions in monitoring the students who are currently on attachment.

The students benefit from the system in that, all the application materials are stored in the system and also after being enrolled in attachment, all their assignments and task activities are stored online. Students can even track the progress of their submissions.

The attachment coordinator (supervisor based in the learning institution) has real time follow up of the student’s progress and also assessment is done on real-time basis. This has cut the time and cost incurred during transit to attachment institutions to assess the students. Also, the field supervisor has a direct link with the institution offering attachment opportunity to enhance exchange of information between the two about the progress and behaviours of a student. The assessing lecturer is saved from the tiresome work of receiving and going through the report and attachment paperwork since the students’ upload their reports and attachment data online.

A notification module will allow the institution to be able to communicate to all students and lecturers instead of informing them one by one or through phone thus helping speeding up the process and save time. A video call field will be available for conversations between the attachment coordinator and field supervisor and also between student and lecturer.

The system will have a geolocation module that will be picking daily location of students the moment they login to the system to fill their daily activities done and saving to database. This will help the lecturer to know where the student is accessing the system from and distance between the place the student is attached thus it will be easier for the lecturer to know students that are lying depending on the location.

The system will also be using facial recognition and fingerprint feature for student authorization and authentication purpose.

## 1.6 Scope of the study

The higher education industrial attachment system focuses on the attachment process in higher learning institutions. This includes the assessment of those students in attachment by the lecturer, monitoring of students, filling of daily activities and skills gained by a student in a logbook, communication with field-based supervisor and lecturer, submission of report by student to assessing lecturer.

All these activities are done in the system hence computerizing the attachment process in higher learning institutions. This system also avoids a lot of paperwork involved in the attachment process.

# CHAPTER TWO: LITERATURE REVIEW

## 2.0 Overview

The best outside classroom learning activities are through an attachment (Burnett, 2003). Several studies have reported the benefits of attachment programmes in conventional colleges and universities on the rationale in offering attachments as part of the academic programme, to the conventional student who at most is graduating out of university he/she benefits through gaining experience and exposure.

## 2.1 Functions of existing industrial attachment management system

Students benefit from properly designed and implemented industrial attachment programmes as Asare, Antwiadjei-Manu and Ababio (2015) highlighted that such programmes provide a smooth transition from the academic world to the working environment.

Scholars such as Šimicevic and Štetic (2017) opine that industrial attachment may assure students that they will possess all necessary knowledge and practical skills and abilities for employment at operational and managerial positions.

The possession of such skills and knowledge is important as Kayundi (2011) stresses that employers now look for people who possess the appropriate combination of educational preparation and practical training suitable to match the needs of their institutions. Westbrock and Fabian (2010) point out that industrial attachment exposes students to the continuous changes in the professional environment, which helps avoid the gaps between their training and their future professional responsibilities.

Industrial attachment does not diminish the value of classroom theory as Duranti (2007:57) stresses that practical experience in the education sector serves to provide future professionals with a way of applying their theoretical and methodological knowledge in class, and then testing it in the professional arena. Pacios (2013) concurs with Duranti (2007:57) as he notes that academic attachments in education sector represent a first step towards the tasks performed by professionals and they also allow students to apply and supplement the knowledge acquired from their academic training.

To put it in the words of Karunaratne and Perera (2015:3), attachment programmes do not only provide significant benefits to students in terms of career preparation and income but also to strengthen their self-confidence and self-satisfaction in the lifelong learning process. Hence, industrial management system is very crucial and important to students, learning institution and also firms offering attachments positions.

## 2.2 Components of existing industrial attachment management system

### 2.2.1 People

Industrial attachment site that is the organization providing the industrial attachment opportunity. A site supervisor (a qualified professional) and a faculty supervisor (usually from the department of the student’s major) are responsible for supervising the attaché. The faculty supervisor, in consultation with the site supervisor and the student, is responsible for maintaining the academic quality of the Industrial Attachment. Maintaining the academic nature of the Industrial Attachment is essential because academic credit is awarded for the experience (i.e., volunteering and work-for-pay, although worthwhile experiences may not be academically sound)

### 2.2.2 Data

This involves the recorded day to day activities done by the student in a logbook.

### 2.2.3 Policies

These are agreed upon best rules and policies that guide the student on how to work efficiently. The policies are developed by the industrial attachment site or the students’ institution.

## 2.3 Characteristics/Features of existing industrial attachment management system

### 2.3.1 Evaluation

Provides closure through recognition of attaché contributions, reflection on learning experience and wrap-up on-going projects provide follow up if necessary.

### 2.3.2 Supervisor accessibility

There’s nothing more frustrating to attaché than feeling forgotten: being left hanging around with no one to tell them what to do or to clarify the question necessary to complete a project.

### 2.3.3 Responsibility

The faculty supervisor, in consultation with site supervisor and student are responsible for maintaining the academic quality of industrial attachment. (Importance of industrial attachment Elvis Nyakangi 2015).

### 2.3.4 Reliability

The information should be counted onto be trustworthy. It should be accurate, consistent with facts and verifiable. Inadequate or incorrect information generally leads to decision of poor quality.

## 2.4 Types of existing industrial attachment management system

## 2.4.1 Manual system

In most tertiary learning institutions in Kenya, that is, colleges and universities, manual and older methods of conducting industrial attachment management are still in use as of today. For students to be evaluated, there is use of logbooks where a student fills in day-to-day activities performed in an industry where one is attached. For evaluation, a lecturer usually visits the firm where a student is attached so as to ascertain that the student is gaining required skills and learning as per required by the learning institution. After the attachment period, a student is required to write an attachment report about how the attachment period was like.

### 2.4.2 Online System

The development of computerized management systems is expanding over the past years and most of these systems are increasingly substituting the manual systems. The industrial attachment management systems are currently being developed in Kenya and slowly being put into use. An example currently in action in Kenya is Technical University of Mombasa (TUM) ERP system (<https://iap.tum.ac.ke/users/signin>), which is limited in features since it only allows a student to apply for attachment request to the learning institution and wait for approval.

## 2.5 Challenges of existing industrial attachment management system

There are several challenges that come about during the attachment period and they are listed below:

### 2.5.1 Lack of orientation

Most Students aren’t being properly informed by their schools and departments on what the programme is all about.

Sometimes, they aren’t even guided on how to make payments for the collection of their insurance, attachment letter and logbook.

As a result, they end up securing a place late for their training’s. Among the challenges faced, this is one of the most important.

### ****2.5.2 Lack of Supervision & Care****

Some schools find it very difficult to go or send representatives to the various workplaces of their attachés– to monitor, supervise, grade and advise them on the right things to do. As a result of this, some students don’t get proper exposure as per curriculum.

### ****2.5.3 Report Presentation****

Most schools and lecturers are only interested in how well their attachment students are able to defend and present their works (logbooks, reports), other than how much the student benefited and gained from the training. As a result of this, you are likely to find a situation whereby a student who actually participated and benefited from the programme is awarded a poor grade due to Stage fright (i.e., the inability to come out of the class to boldly present his/her work) – whereas, another student who didn’t go for the training, but as a result of boldness and smartness in forging materials is awarded a better grade.

### 2.5.4 Laziness by workers

The high rate of laziness exhibited by some workers in firms where students undergo their industrial training is becoming quite alarming. Majority of these workers sometimes sees and takes the attachment students as servants. For instance, instead of the students to be properly taught and shown the major activities, they’re now being instructed to carry out irrelevant jobs such as mopping floors, washing toilets, buying mandazi etc.

### 2.5.5 Inadequacy of Attachment places

Arikewuyo (1999) argues that effective industrial attachment is an indispensable component of developing students’ competences in their areas of specialization. The importance of this type of learning component is marred by an array of inadequate industrial attachment places.

### 2.5.6 Inadequate Training Equipment

Olugbenga (2009) affirmed that for effective training to take place and to create skills that are relevant to the future during industrial attachment, institutions of training must have up to date technology. Absence of up-to-date technology deprives attachés of the opportunity to develop some important skills in their trades. In view of this, the assertion that attachés are improperly trained can be true.

## 2.6 Summary

If industrial attachment is properly planned and implemented it may be the solution to solve death of skills needed for employment. This study has shown that graduates are handicapped due to inadequate on the job training skills and also other challenges as stated above. An immediate intervention is needed to produce a crop of graduates with skills needed by employers and that can be through proper management of the industrial attachment period.

# References

Burnett, S. (2003). The future of accounting education: A regional perspective. Journal of Education for Business, 78, p. 129

Asare, M.B., Antwiadjei-Manu, R.K., & Ababio.KA. 2015. Student’s perceptions towards industrial attachment in Kumasi: an ordinal logistic approach. Science Journal of Applied Mathematics and Statistics 3(6): 275-280

Šimicevic, D., & Štetic, S. 2017. The role and importance of internship programs as part of formal education: Students’ perceptions: the case of College of Tourism. Broj 19: 51-60

Khayundi, F. 2011. Existing records and archival programmes to the job market. Journal of the South African Society of Archivists 44: 62-73.

Westbrock, T., & Fabian, S. 2010. Proficiencies for instruction librarians: Is there still a disconnect between professional education and professional responsibilities? College and Research Libraries 75: 569–590

Duranti, L. 2007. Models of archival education: four, two, one, or a thousand? Archives & Social Studies: A Journal of Interdisciplinary Research 1: 41-62.

Pacios, A.R. 2013. Assessment of the practicum by students from the perspective of the induction process. Journal of Education for Library and Information Science 54(3): 191-204.

Karunaratne, K., & Perera, N. 2015. Students’ perception on the effectivess of industrial internship programme. Proceedings of the International Conference on Global Business.

Arikewuyo, M.O(1999). Improving Teachers’ Productivity in Nigeria, Basics of Education, Lagos: Triump Book Publishers

Olugbenga, A,F (2009) ’Towards Effective SIWES Curriculum development of Applied Sciences for Adequate Skills Utilization: A Case Study of the School of Applied Science, Nuku BamaliPolytechnic Zaria’ Pacific Journal of Science and Technology, 10(1), 234-239