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Evaluation of Industrial Attachment Training of Bachelor of Purchasing and Supply management students. Murang'a University of Technology

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Abstract: **An Industrial Attachment is a structured, college-graded work experience in a professional work setting during which the student applies and acquires knowledge and skills. It involves the application of learnt skills in an organization related to the student's major. This study evaluated the effectiveness of industrial attachment training for students of the Bachelor of Purchasing and Supplies Management (BPSM) program of Murang'a University of Technology (MUT). Specific objectives for the study were, (1) To examine the adequacy of preparation for industrial attachment training for students of the BPSM program of Murang'a University of Technology, (2) To evaluate practical supply chain management experience gained in industrial attachment training for students of BPSM program of Murang'a University of Technology, (3) To identify the challenges experienced in industrial attachment training by students of BPSM program of Murang'a University of Technology, (4) To evaluate the effectiveness of industrial attachment training for students of BPSM program of Murang'a University of technology, (5) And finally, To determine strategies for effective management of the industrial attachment training for students of BPSM program of Murang'a University of Technology. The study population targeted all 112 fourth-year students of the Bachelor of Purchasing and Supplies management program of Murang'a University of technology for the academic year 2020/2021. A survey of all students was carried out by use of the questionnaire. Data collected were analyzed by use of SPSS and presented in tables. Key findings indicate that, the Public sector is the biggest supporter of industrial training, students were adequately prepared, Students were more exposed to store activities than as compared to other supply chain activities and the industrial training was effective in that the training provided an opportunity for students to link theoretical knowledge and practical experience. The study recommends that there should be adequate collaboration between the industry and the University to provide adequate industrial attachment to students.**

Keywords: **Bachelor of Purchasing and Supplies Management, College-graded, Industrial Attachment, Knowledge and skills, Murang'a University of Technology, Work experience.**

I. INTRODUCTION

Learners' Industrial Attachment program is a "work-based familiarity plan" providing a real-life organizational background for students to build explicit or basic skills, necessary to their specialized development. Sumathi, Zainal, Karim & Li, (2012), hypothesize that the essence of Industrial Attachment was to develop the practical and competence of trainees and provide them with the requisite knowledge to contribute their quota towards developing society. Researchers have

demonstrated the critical role of Industry Based Learning (IBL) towards graduates' procurement of jobs. The Gallup Organization's survey that covered 27 European Union member states as well as Croatia, Iceland, Norway, and Turkey revealed that 30 percent of respondents recommended the inclusion of practical experience in courses at higher education institutions to enhance the employability of their graduates (Gallup Organization, 2010). The University of Glasgow in the United Kingdom corroborated the continental Europe employers' opinions on the employability skills of new graduates. They reiterated the importance of placements and the recognition of experiential learning by proposing that experiential learning be conducted under effective, sustained, and equitable partnerships between higher educational institutions and employers (Lowden, Hall, Elliot & Lewin, 2011). Similarly, in a study conducted in Austria, Germany, Italy, Poland, Slovenia, and Turkey, students and academicians agreed that a practical orientation, cooperation with industry, and internship were fundamental tools for enhancing graduates' employability. Employers concurred and stressed the need to acquire more actual work experience during higher educational studies (Melink & Pavlin, 2012). In Asia, several tracer studies highlight the role of Industry Based Learning towards the acquisition of skills for employment. Vong (2014) researched the Royal University of Phnom Penn and recommended that a short training program on work skills before undergraduates left the University was necessary to give graduates a big advantage in the job market. Internships were also important to enable graduates to understand the labor market needs. A tracer study was conducted at Visvesvaraya Technical University in Bangalore focusing on undergraduates' exposure to practical work and experience gained from projects. The alumni were happy about the interaction during attachment between the industry and the institution. They advocated for additional laboratory exposure and hands-on experience. They strongly believed that such refinements were to augment employability in the corporate world (Murali & Rajaram (2015).

Africa perspective

The theme of Industry Based Learning is prevalent, too in inquiries into the relationship between higher education and the world of work in Africa. A British Council in 2016 commissioned an investigation on 'Universities Employability and Inclusive Development' that covered four countries and several universities therein. These were: Ghana - University of Ghana, Kwame Nkrumah University of Science and Technology, University for Development Studies, Ashes University; Kenya - University of Nairobi, Moi University, Daystar University; Nigeria - Imo State University, University of Ibadan, Bingham University; South Africa - the University of the Witwatersrand, University of the Free State, Nelson Mandela Metropolitan University, and the University of Venda. Among the pivotal recommendations that arose was transforming the higher education experience through an integrated approach. The proposal was to be achieved in part by enabling students to access placements outside the university to develop life and workplace experience, Ondieki, C., Kimani, G.N., Tanui, E.K. (2018).

East Africa perspective

Universities in East Africa drawn from Kenya, Rwanda, Tanzania, and Uganda participated in a market survey sponsored by the Nation Media Group (Infotrak, 2015). Most employers' findings are related to unsatisfactory levels of technical skills. Universities were accused of imparting theoretical knowledge at the expense of practical skills. A lack of adequate internship opportunities was found prevalent. In Kenya, it was found that there were too few applications for vacancies requiring technical and specialized qualifications such as engineering, information technology, health, and financial services. A recommendation was made that university graduates were to focus on gaining appropriate work experience and job knowledge through attachment or internship (Corporate Staffing Services, 2015). Kaijage (2000) in a study comprising Bachelor of Commerce graduates of the University of Dar es Salaam found that 98.0 percent of Accounting major students were of the feeling that attachment was a fundamental component of the program.

Kenya perspective

The National Development Blueprint, Kenya Vision 2030, recognizes human resources as crucial for accelerating the transformation of the country into a rapidly industrializing middle-income country. To quote the Social Pillar of the Vision, "Kenya intends to create a globally competitive human resource base to meet the requirements of a rapidly industrializing economy'. This will be achieved through lifelong industrial training and attachment informed by relevant Labour Market Information. Industrial training produces human resources with knowledge and skills that meet the needs of the industry. Industrial attachment equips attachees with practical skills and exposure to real work situations. It also enables them to internalize relevant work ethics, values and upgrade their skills to enhance their level of employability and productivity (Kambi ,2013).

As indicated by Kambi (2013), before 2013, industrial training and attachment were conducted in an uncoordinated manner due to the lack of a comprehensive policy framework. This Sessional Paper, therefore, provided the framework for the establishment of institutions and programs for planning and implementation of industrial training and attachment. It also took cognizance of regional and global trends towards recognition of qualifications across borders. The framework further provided for the harmonization of guidelines for the implementation of industrial training and attachment.

Available literature shows that most of Kenya's public universities have entrenched IBL in their curricula. Differences, however, prevail among universities and even within departments of an institution in terms of the identification of organizations for attachments, students' facilitation, supervision, and evaluation. Among universities with elaborate IBL programs are the Jomo Kenyatta University of Agriculture and Technology (Magoha & Alugongo, 2003) and the Technical University of Kenya (Technical University of Kenya, 2013).

A number of Kenya's educational blueprints have underscored the importance of IBL. Sessional Paper No. 1 of 2005 on a Policy Framework for Education, Training, and Research identified the challenge of mismatch between skills acquired by university graduates and the demands of industry (Republic of Kenya, 2005). To address the problem, universities were required to review all professional programs and incorporate internships into academic courses. A report from the Public Universities Inspection Board recommended that each university should have an internship policy (Republic of Kenya, 2006). The promotion of internships was also among strategies for improving university-industry linkages and partnerships, according to the National Strategy for University Education 2007-2015 (Republic of Kenya, 2007). Weak linkages between the competencies acquired in some programs and the demands of the market were singled out as a challenge to the quality and relevance of university education in Sessional Paper No 14 of 2012 on a Policy Framework for Education and Training (Republic of Kenya, 2012a). The Public Service Commission of Kenya also recognizes the important component of education and training played by both industrial attachment and internship (Republic of Kenya, 2015).

To facilitate the implementation of the internship policy, the Government of Kenya has introduced a monetary incentive to employers. In the 2015/2016 National Budget, a tax rebate was introduced for companies that hired at least ten interns (Republic of Kenya, 2015). An employer was to deduct a tax rebate equal to 50 percent of the amount of salaries and wages paid to at least ten apprentices. The inducement was ushered because corporations were reluctant to recruit interns because of the cost of training. Consultations with the Federation of Kenya Employers revealed, however, that the tax rebate incentive was ineffective. Most companies were small or medium-sized and so could not afford to hire the minimum number of ten interns.

Statement of the problem

Studies have shown that a gap exists between the quality of graduates and the demands of the industry. Consequently, training institutions and employers have accepted the need to bridge the gap in the form of attachments, internships, seminars, workshops, and industrial visits. However, some challenges impede effective academia-industry collaboration. The contents of the curricula of the training institutions, although exhaustive, are not job specific to meet the specific needs of the industry. This leads to a situation where graduates leave school knowing bits of everything but mastering none. Evidently, the institutions lack the requisite facilities and qualified lecturers to impart the right practical knowledge and skills to trainees. The gap can be narrowed by the development of an industry-oriented curriculum model which prioritizes stakeholders' requirements and needs as the surest solution to bridge the gap between industry and academia to train competent graduates for industry (Howard, 2018).

Soft skills among students are essential and crucial in entering the work environment. Therefore, Higher Educational Institutions need to distinguish the knowledge and soft skill levels of their students for the strategies and interventions to be implemented to rectify their capabilities. (Mohd et. al,2018, Chen,Ty owuah, Akor,2020). There is a need to complement the traditional teaching method with a well-organized students' industrial work experience scheme. This will provide the students with the required entrepreneurial competencies for self-reliance. This according to Iwuoha (2018) can lead to job increased innovation and economic development. Providing them with exposure and real-world experience can help improve graduates' capabilities through internships, apprenticeships, or industrial training attachments. There is a need for both university training (for disciplinary knowledge) and on-the-job training (for practical knowledge). Thus, it is necessary to incorporate exposure of the workplace into the university context. In short, there is a need to help students move from the "book and theories" to the real clients and real workplaces (Felce, 2017).

Objectives of the study

1. To examine the adequacy of preparation for industrial attachment training for students of the BPSM program of Murang'a University of Technology

2. To evaluate practical supply chain management experience gained in industrial attachment training for students of the BPSM program of Murang'a University of Technology

3. To identify the challenges experienced in industrial attachment training by students of the BPSM program of Murang'a University of Technology

4. To evaluate the effectiveness of industrial attachment training for students of the BPSM program of Murang'a University of technology.

5. To determine strategies for effective management of the industrial attachment training for students of the BPSM program of Murang'a University of Technology

II. LITERATURE REVIEW

What is experiential learning? Learning by doing. This is the basis for the experiential learning theory. Experiential learning focuses on the idea that the best way to learn things is by actually having experiences. Those experiences then stick out in your mind and help you retain information and remember facts.

Experiential Learning Theory

Kolb's Experiential Learning Theory ((Kolb, 1984) combines a four-stage learning cycle with four learning styles. It provides a powerful foundation for learning and development by describing the ideal processes where knowledge is created through experience. As a result, Kolb's theory has influenced the work of teachers, instructional designers, and L&D professionals around the globe. The theory invites educators and learners alike to understand different learning styles, making it a useful guide for designing effective training interventions.

Experiential Learning Theory (ELT) emphasizes the importance of experience and its role in the learning process (Kolb, 1984). Moreover, it uses experience to describe its vital difference from cognitive learning theory, which focuses on cognition and behavioral learning theory. These theories "ignore[s] the possible role of subjective experience in the learning process" (Cherry, 2019), while, as Kolb (1984) attests, "learning is the process whereby knowledge is created through the transformation of experience".

ELT has served a central role in various studies that use the theory as a theoretical framework to investigate its effectiveness in the learning process. For example, Lai et al. (2007) used ELT as a framework to investigate the contribution of technology to experiential learning. They considered the possibility of using technology to provide and support experiential learning. Their results indicate that using technology while going through the four-stage process helped students to improve their knowledge; emphasizing the importance of experience gives students a chance to act and reflect on their actions.

Benefits of industrial attachment

The change of life stages from a student to a professional is not always very simple. Students have to face many challenges when they enter into professional life. They have to adjust themselves according to the professional environment by implementing their conceptual knowledge in the new world of work. Usually, business students use their skills and theoretical business knowledge in their first jobs (Jamil, Kareem, Atta, Rehman, Khan,& Jan 2012), McCollum Schoening NC (2004). By integrating conceptual knowledge and training through academic internship programs, students can be facilitated to better implement their concepts in the workplace (Tynjälä,2008). According to Gault Leach, and Duey (2010), academic internships are a bridge to link theory and practice by taking part in supervised and scheduled work. These internship programs not only improve students' skills but also polish their professional growth and experience. Today, educational institutes, students, and business recruiters are well aware of the importance of internship programs [Hirst R (1996), Arnold MJ, Cannon JA (1998), Bower AM (1989), Horowitz EM (1996, Mamun M (1998].

Providing students with opportunities to develop interpersonal and intercultural communication competencies is increasingly viewed as a key university responsibility in the development of work-ready graduates. There is a need to close the gap between theory and practice in curriculum, and for pedagogy aimed at developing interpersonal skills including

intercultural understanding (Randolph, 2011). Busch (2009) and Caruana and Ploner (2010) argue these learning outcomes are central to realizing individual employment ambitions and workplace integration. In the changing global environment, education that supports the development of students' global perspectives, learning, interpersonal, and intercultural competencies is a priority (Chaney, 2013). In this global environment, managers who can construct knowledge with alternate cultural viewpoints, demonstrate high-level interpersonal and communication skills, and work productively and collaboratively, are considered vital to the future of management (Australian Business Deans Council, 2014; Dyllick, 2015).

III. METHODOLOGY

The study adopted a case study design to examine the significance of the student industrial attachment program at Murang,a University of Technology. According to McCombes,(2023), a case study is a detailed study of a specific subject, such as a person, group, place, event, organization, or phenomenon. Case studies are commonly used in social, educational, clinical, and business research. This study used MUT to look at not only students' experimental education learning as part of a requirement for the BPSM degree award but also to find out the effectiveness of students who undergo this training. The study population targeted all 112 fourth-year students of the Bachelor of Purchasing and Supplies management program of Murang'a University of technology for the academic year 2020/2021. A survey of all students was carried out by use of a questionnaire that was given to students in the lecture hall who were required to fill and return to the lecturer. Data collected were analyzed by use of SPSS and presented in tables.

IV. RESULTS OF THE STUDY

Demographics

The researcher distributed 60 questionnaires and 45 were filled and returned. However, analysis was done for 40 questionnaires that were properly completed. The majority of the respondents were female at 62.5% while males were 37.5%. The results show that the majority are in the age group of between 22 to 24 years, followed by the age group of 19 to 21 years at 10% while 5% of students were between 25 to 27 years. The Public sector is the biggest supporter of industrial training placement at 75% while the private sector place 25% of MUT students in industrial attachment training. Students were asked to indicate how they were able to secure attachment places they were trained and 37.5% indicated were placed through relatives, 40% secured placement through their effort 22.5 secured placement with the help of friends. Results show that no students ever secured placement through MUT support.

Table 1. Demographics

1	**Gender**	**Frequency**	**Percent**
	Female	25	62.5
	Male	15	37.5
	Total	40	100
2	**AGE**	**Frequency**	**Percent**
	19-21	4	10.0
	22-24	34	85.0
	25-27	2	05.0
	Total	40	100
3	**Place of attachment**	**Frequency**	**Percent**
	Private organization	10	25.0
	Public Organisation	30	75.0
	Total	40	100
4	**Means of placement**	**Frequency**	**Percent**
	Through relatives	15	37.5
	Through own effort	16	40.0
	Through friends	9	22.5
	Through university	0	00.0
	Through internet	0	00.0
	Total	40	100

Elements of evidence of preparation

The research wanted to understand the extent to which the students were prepared and supported for industrial attachment by MUT before they embarked on the program. The outcome indicates that MUT prayed a minimal role in placing students for attachment and that students were not less oriented before going for attachment. The results indicated that attachment letters are given out to students on time at a mean of 3.73 points out of 5 maximum points, that attachment openings are declared to students on time at a mean of 3.03, students further indicated that orientation for students going for attachment was organized on time at a mean of 2.65, that students welfare issues were addressed before the start of attachment at a mean of 2.70. Students disagreed that the University played a positive role in choosing the organizations for attachment at a mean of 1.83 and further that MUT provided alternative places were provided for students when their intended choices fail at a mean of 2.10. However, students agreed that the University provide the needed information to students before each attachment period as indicated by a mean of 3.48, that students agreed that they were mentally, psychologically, and physically prepared for the program as indicated by 3.28, that students agreed that there was lack of proper planning of the attachment program at 3.18 and the students concluded overall that there was no orientation program for participating students a mean score of 3.53.

Table 2. Elements of evidence of preparation

Elements of evidence of preparation	N	Mean	SD	Performance
Attachment letters are given out to students on time	40	3.73	1.26	Above average
Attachment openings were declared to students on time	40	3.03	1.17	Above average
Attachment openings were declared to students on time	40	3.03	1.17	Above average
Orientation for students going for attachment was organized on time	40	2.65	1.29	Above average
Students' welfare issues were addressed before the start of the attachment	40	2.70	1.36	Above average
The University played a positive role in choosing the firm for attachment	40	1.83	0.98	Below average
Alternative places are provided for students when their intended choices fail	40	2.10	1.15	Below average
MUT provided needed information prior to each attachment period	40	3.48	1.15	Above average
Students were mentally, psychologically, physically prepared for the program	40	3.28	1.28	Above average
Lack of proper planning of the program	40	3.18	1.20	Above average
Orientation program for participating students.	40	3.53	1.26	Below average

Supply chain activities learnt during attachment

To know the actual supply chain activities students learned during their industrial attachment, the supply chain cycles were given from purchasing planning up to the last stage of disposal. Their results agree that they were exposed to practical learning on procurement planning (mean 3.98), procurement Requisitioning (mean score of 4.38), then quotation preparation (mean of 3.50). Students further indicated that they were exposed to the process of tender preparation (mean of 4.08), quotation and tender opening strong agreement (mean of 4.23), quotation and tender evaluation (mean of 4.23), preparation of tender award and acceptance letters as indicated by a mean of 3.95, contract preparation at a mean of 3.65 and that they got good exposure to purchase order preparation as indicated by a mean of 4.45. The researcher further wanted to know their gains in stock management to which students indicated that they gained strong experience in receiving goods delivered by suppliers (Mean 4.70- the highest score), strong experience in issuing goods (mean of 4.55), good experience in the disposal of inventory (mean of 4.05). The students had the lowest experience with International purchasing as shown by a mean score of 2.15 out of 5 (below average) and that they had a chance to learn Electronic procurement (E-procurement process) as indicated by a mean of 3.58 points out of 5 points. The high means of receiving and issuing inventory implies that most students were attached to the stores/warehouses more than they were exposed to the other preceding stages of purchasing.

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Table 3. Supply chain activities learned during attachment

Supply chain activities learned during attachment	N	Mean	Std.D
Procurement planning	40	3.98	1.31
Requisitioning	40	4.38	1.13
Quotation preparation	40	3.50	1.20
Tender preparation	40	4.08	1.23
Quotation/tender opening	40	4.23	1.37
Quotation/tender evaluation	40	4.23	1.25
Tender award/ acceptance	40	3.95	1.41
Contract preparation	40	3.65	1.27
Purchase order preparation	40	4.45	1.11
Receiving of goods	40	4.70	0.76
Issuing of goods	40	4.55	1.01
Disposal of inventory	40	4.05	1.36
International Purchasing	40	2.15	1.51
Electronic procurement (E-procurement process)	40	3.58	1.62

Challenges of the industrial attachment program

The researcher propped students to share their challenges experienced. The challenges were divided into two stages the first being problems faced by students during the search for a place for the attachment and problems faced by students during the attachment. The results of this knowledge will highly advise the preparation of students for further attachment programs by MUT.

Challenges faced by students during the search for a place for the attachment

On the challenges encountered by students during the search for a place for the attachment indicated as follows; almost all students agreed that they faced challenges (the question posed, " No problem faced" had a mean of 1.88 out of 5) as listed here. Most of them had a challenge of securing a place for attachment (mean of 4.45), the university played a less role in placing students on attachment (mean of 2.15) and also students lacked funds to go around organizations looking for attachment (mean of 4.30). The students encountered reluctance on the part of organizations to accept students for industrial attachment (mean of 4.23). At the attachment place after placement there was a lack of office space within most organizations (mean of 3.78), some students had challenges securing attachment due policy decision of the organizations not to accept students for attachment (mean of 3.35, this assertion will be propped further next review to establish such organizations). There excessive demand on organizations from students searching for placement (mean 3.63) and hence this lead to most students spend a lot of time finding their placement for the industrial attachment (mean 4.63). Students were forced to go far because it was difficult in getting attachment placement close to where the students lived as shown by a mean score of 4.52 points out of 5 points.

Table 4. Problems faced by students during the search for a place for the attachment

Challenges facing students during the search for a place for the attachment	N	Mean	Std. d
No problem faced	40	1.88	1.22
The challenge of securing a place for attachment.	40	4.45	0.71
The university played a big role in placing students on attachment	40	2.15	1.41
Lack of funds to go around organizations looking for an attachment	40	4.30	1.16
Reluctance of organizations to accept students for industrial attachment	40	4.23	1.07
Lack of office space within most organizations	40	3.78	1.17
The policy decision of the organizations not to accept students	40	3.35	1.03
Excessive demand on organizations from students for placement	40	3.63	1.19
Students spend a lot of time finding placement for the industrial attachment	40	4.63	0.59
Difficulty in getting attachment placement close to where the students live	40	4.52	0.72

Challenges students faced during the attachment

The challenges encountered by students during the attachment indicated as follows; almost all students agreed that they faced challenges in that the question posed, "No problem faced" had a mean of 1.68 out of 5 meaning they disagreed with the statement. Further students disagreed that they had a poor attitude towards the attachment program (mean 2.10). Respondents also that firms/industries are suspicious of students on the attachment program (mean of 2.93) and that the supervision by workplace supervisors was not effective (Mean of 2.48). Students indicated that they did not have free access to machines and equipment to work with (mean of 2.68). Students agreed that they incurred high costs in pursuing the industrial program (mean 4.08). Students lacked training materials in the Firms/industries to which they were attached (mean of 3.15), appropriate skills, tasks, and jobs relating to students' program of study (mean 2.98), and lack of financial support from industries to students on attachment in terms of transport and food (mean 4.20). Students indicated that sexual harassment was not much (mean of 2.15). Generally, there was a lack of modern facilities/types of machinery in training stations (mean of 2.82).

Table 5. Challenges facing students during the attachment

Challenges facing students during the attachment	N	Mean	Std.D
No problem faced.	40	1.68	1.21
Poor attitude of students towards the program	40	2.10	0.96
Firms/industries are suspicious of students on the attachment program	40	2.93	1.12
Supervision from workplace supervisors is not effective	40	2.48	1.20
Students do not have free access to machines and equipment to work with	40	2.68	1.29
High cost involved in pursuing the industrial program	40	4.08	1.12
Lack of training materials in the Firms/industries	40	3.15	1.29
Lack of appropriate skills, tasks and jobs relating to students program of study	40	2.98	1.27
Lack of financial support to students on attachment in terms of transport and food	40	4.20	1.18
Sexual harassment	40	2.15	1.27
Lack of modern facilities/machineries in training stations	40	2.82	1.39

Effectiveness of Industrial Training

The researcher wanted to understand whether the students' industrial was beneficial to them as concerns to their area of study in the university. All were in agreement as follows; students agreed that the schedule of activities was in line with BPSM specialization (mean score of 4.33 out of 5), and that training provided workplace skills and knowledge relevant to the BPSM program (mean score of 4.38). Students indicated that the training provided opportunity to gain supply chain practical experience in a commercial environment (mean of 4.43) and also strongly agreed that their industrial training was relevant to the BPSM program (mean of 4.40), the training helped them to acquire self-reliance skills in SCM (mean of 4.35). When students were propped further they agreed that the attachment program helped them to establish industry networks and contacts (mean of 4.20). Students strongly agreed that the training provided them an opportunity to link theoretical knowledge and practical experience as indicated by a mean score of 4.53 out of 5 and also they averred to the assertion that the industrial training provided them an opportunity to experience a prospective career path as indicated by a mean of 4.43 out of 5 maximum points. The researcher wanted to know whether they gained self-confidence after training to which students agreed that they gained confidence in performing their future job opportunities indicate by a mean of 4.28. Few students indicated that the industrial training enabled them to get a part-time job as they continue with their studies as shown by a mean of 2.38 and also others agreed that the industry experience would help them to secure a full-time job after they complete their studies as indicated by a mean of 3.63. The researcher wanted to know whether the industrial attachment period was adequate where the students agreed that the 8 weeks of industrial training was sufficient for them to learn and gain employability skills as indicated by a mean of 3.85 pints out of 5. Results are shown in table 6.

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Table 6. Effectiveness of Industrial Training

Relevance of Industrial Training	N	Mean	Std.D
Schedule of activities were in line with area of my area of specialization	40	4.33	0.89
Training provided workplace skills and knowledge	40	4.38	0.7
Training provided opportunity to gain SCM practical experience in a commercial environment	40	4.43	0.84
Industrial training was relevant to the BPSM program	40	4.40	0.84
Helped you to acquire self-reliance skills	40	4.35	0.74
Helped you to establish industry networks and contacts	40	4.20	0.79
Training provided opportunity to link theoretical knowledge and practical experience	40	4.53	0.68
Training provided opportunity to experience a prospective career path	40	4.43	0.68
Training provided confidence on my future job opportunities	40	4.28	0.75
Training helped me to get a part time job during my study	40	2.38	1.19
Industry experience would help me to secure full time job after I complete my studies	40	3.63	1.19
The 8 weeks industrial training was sufficient to learn employability skills	40	3.85	0.98

Strategies for an effective industrial attachment program

The researcher wanted to find out the popular strategies that can be employed to perfect industrial training. The results have indicated that the most five popular strategies are that students should be sensitized on the importance of industrial attachment (mean of 4.63), there should be adequate collaboration between the industry and the University to provide adequate industrial attachment to students (mean of 4.55), there should be set objectives to be achieved at the end of the practical session (mean 4.45), there should be an early follow-up so that supervisor can make their inputs (mean 4.43) and that there should be follow up studies (such as this one) to give the students opportunities to make suggestions to the institution regarding new changes in the world of work and also changes in the program to suit the new changes in the dynamic business world (mean of 4.35). Further, the following strategies were supported; there should be proper documentation of the checklist for assessment (mean 4.25), the university should institute a post-attachment seminar for students and supervisors (mean 4.03), the university should confirm the appropriateness of place Industrial placement before posting out the students (mean 3.88) and the most unpopular strategy though strong is that there should be frequent supervision by the university supervisors (mean 3.78).

Table 7. Strategies for an effective industrial attachment program

	N	Mean	Std.D	Rank
Sensitizing students on the importance of the industrial attachment	40	4.63	0.7	1
There should be adequate collaboration between the industries and the University to provide adequate industrial attachment to students	40	4.55	0.64	2
There should be set objectives to be achieved at the end of the practical session.	40	4.45	0.64	3
There should be an early follow-up so that supervisor can make their inputs	40	4.43	0.71	4
There should be follow up studies in order to give the students' opportunities to make suggestions to the institution regarding new changes in the world of work and also changes in the program to suit the new changes in the dynamic business world.	40	4.35	0.70	5
There should be a proper documentation of checklist for assessment.	40	4.25	0.71	6
There should be post attachment seminar for students and supervisors	40	4.03	1.12	7
The university should confirm the appropriateness of place Industrial placement before posting out the students	40	3.88	1.16	8
Frequent supervision by the university supervisors	40	3.78	1.14	9

V. SUMMARY FINDINGS

Key findings

1. The Public sector is the biggest supporter of industrial training.
2. No students ever secured placement through the MUT support.
3. Attachment letters were given out to students on time and MUT provided the needed information to students prior to each attachment period
4. Students were more exposed to store activities than as compared to other supply chain activities.
5. Students had challenges securing a place for attachment and also they were not financially supported by the attachment partners thus making transportation difficult for them.
6. The industrial training was effective in that the training provided an opportunity for students to link theoretical knowledge and practical experience. In particular industrial training provided an opportunity for students to gain supply chain practical experience in a commercial environment, and helped students to establish industry networks and contacts and it is confirmed that Industrial training was relevant to the BPSM program as offered at MUT.

Key Strategy

The following five strategies for an effective industrial attachment program are suggested;

1. The students should be sensitized on the importance of the industrial attachment
2. There should be adequate collaboration between the industry and the University to provide adequate industrial attachment to students.
3. There should be set objectives to be achieved at the end of the practical session and measured to confirm achievement.
4. There should be an early follow-up so that supervisors can make their inputs
5. There should be follow-up studies (such as this one) to give the students opportunities to make suggestions to the institution regarding new changes in the world of work and also changes in the program to suit the new changes in the dynamic business world.

VI. CONCLUSIONS

The study establishes that the Public sector is the biggest supporter of industrial training and that MUT did not support her students to secure placement for industrial attachment. However, students agreed that attachment letters were given out to students on time and MUT provided the needed information to students prior to each attachment period. Findings strongly indicate that students were more exposed to stores activities and less exposure in other equally important areas of SCM such as Procurement planning, tender award/ acceptance, Contract preparation, Electronic procurement (E-procurement process), Quotation preparation with international purchasing indicating the least exposure to students. Further, the study indicated that students had challenges securing a place for attachment and also they were not financially supported by the attachment partners thus making transportation difficult for them. The study positively indicates that the industrial training was effective in that the training provided an opportunity for students to link theoretical knowledge and practical experience. In particular industrial training.

VII. RECOMMENDATIONS

The students ranked the following five strategies for an effective industrial attachment program in that order; The University should sensitize students on the importance of industrial attachment including what they need to seek to understand (for example BPSM students to be given an outline of the procurement processes they need to learn as this will make them enquire about them during the attachment). There should be adequate collaboration between the industry and the University to provide adequate industrial attachment to students and this can be achieved by MUT establishing linkages with the industry preferably with big organizations such as KPLC, KENGEN, Ministries, and other organizations where one memorandum of understanding serves a wider area to MUT from signing MOU with several organizations. There should

be set objectives to be achieved at the end of the practical session and measured to confirm achievement. There should be an early follow-up so that supervisors can make their input. There should be follow-up studies (such as this one) to give the students opportunities to make suggestions to the institution regarding new changes in the world of work and also changes in the program to suit the new changes in the dynamic business world. There should be a post-attachment seminar for students and supervisors to discuss their experiences so that students can be advised not to carry on negative experiences. The university should confirm the appropriateness of place Industrial placement before posting out the students so that BPSM students are not attached to another department such as finance in which case the experience is not relevant.

REFERENCES

[1] Arikewuyo, O. (1999). Improving Teachers' Productivity in Nigeria: Basics of Education. Lagos: Triump Book Publishers.

[2] Arnold MJ, Cannon JA (1998) Student expectations of collegiate internship program in business: a 10-year update. J Educ Bus 73(4):202–205. https ://doi.org/10.1080/08832 32980 96016 30

[3] Arnold MJ, Cannon JA (1998) Student expectations of collegiate internship program in business: a 10-year update. J Educ Bus 73(4):202–205. https ://doi.org/10.1080/08832 32980 96016 30

[4] Australian Business Deans Council (2014). The future of management education: An initiative of the Australian Business Deans Council. Project Report, Deakin: ABDC.

[5] Becker, G. S. (1962). Investment in human capital: a theoretical analysis. The Journal of Political Economy, 9-49.

[6] Bils, M., & Klenow, P. J. (2000). Does schooling cause growth? American Economic Review, 1160-1183

[7] Bower AM (1989) Getting at the core of the New York State mentor teacher: internship program—relationships. Iowa State University Library, Ames, IA. (ERIC document reproduction service, no. ED303463)

[8] Busch, D. (2009). What kind of intercultural competence will contribute to students' future job employability? Intercultural Education, 20(5), 429-438. http://dx.doi.org/10.1080/14675980903371290

[9] Busch, D. (2009). What kind of intercultural competence will contribute to students' future job employability? Intercultural Education, 20(5), 429-438. http://dx.doi.org/10.1080/14675980903371290

[10] Carlson, A. C. (2002). The Benefits of Work-integrated Learning, ITE Teachers' Conference, Malaysia

[11] Caruana, V. & Ploner, J. (2010). Internationalisation and equality and diversity in HE: Merging identities. Leeds: Equality Challenge Unit. ttp://www.ecu.ac.uk/publications/internationalisation-and-equality-and-diversity-inhe-merging-identities/

[12] Chaney, M. (2013). Australia – educating globally. Canberra: International Education Advisory Council, Department of Industry, Innovation, Science, Research and Tertiary Education, Australian Government. http://apo.org.au/node/33223

[13] Chen J. O., Tyowuah, M.N., Akor, J.T., (2020). Impact of students industrial work experience scheme on entrepreneurial competence for pre-service teachers. International Journal of Education and Research Vol. 8 No. 7 July 2020

[14] Cherry, K. (2019, September 24). The David Kolb theory of how experience influences learning. https://www.verywellmind.com/experiential-learning-2795154.

[15] Cohen, D., & Soto, M. (2007). Growth and human capital: good data, good results. Journal of Economic Growth,12(1), 51-76.

[16] Denson, N. & Bowman, N. (2011). University diversity and preparation for a global society: The role of diversity in shaping intergroup attitudes and civic outcomes. Studies in Higher Education, 38(4), 555-570. http://dx.doi.org/10.1080/03075079.2011.584971

[17] Dyllick, T. (2015). Responsible management education for a sustainable world: The challenges for business schools. Journal of Management Development, 34(1), 16-33. http://dx.doi.org/10.1108/JMD-02-2013-0022

[18] Felce, A. (2017). Cross-university collaboration for work-place learning: A case study. Higher Education, Skills AndWork-Based Learning, 1(1), 63–77.

[19] Gallup Organization, (2010). Employers' perception of graduate employability. Brussels. European Commission

[20] Gault J, Leach E, Duey M (2010) Effects of business internships on job marketability: the employers' perspective. Educ Train 52(1):76–88

[21] Gumbe, S. M., Svotwa, T. D., & Mupambireyi, F. P. (2012). Students' Perspectives of the Industrial Attachment Programme: A study of University of Zimbabwe, Faculty of Commerce (2010-2011). International Journal of Physical & Social Sciences, 2(9), 12-36.

[22] Harrison, N. & Peacock, N. (2010). Cultural distance, mindfulness and passive xenophobia: Using integrated threat theory to explore home higher education students' perspectives on 'internationalisation at home'. British Educational Research Journal, 36(6), 877-902. http://dx.doi.org/10.1080/01411920903191047

[23] Harrison, N. (2015). Practice, problems and power in 'internationalisation at home': Critical reflections on recent research evidence. Teaching in Higher Education, 20(4), 412- 430. http://dx.doi.org/10.1080/13562517.2015.1022147

[24] Hirst R (1996) The value of faculty internships in technical communication. J Tech Writ Commun 26(1):79–96

[25] Horowitz EM (1996) Chasing the pot of gold: internships on the road to employment. Iowa State University Library, Ames, IA. (ERIC document reproduction service, no. ED401551)

[26] Howard, E. K. (2018). The Impact of Academia–Industry Collaboration on Quality of Training in the Ghanaian Textiles Institutions of Higher Learning. Africa Development and Resources Research Institute Journal, Ghana: Vol. 27, No. 9(4), Pp. 1-20, E-ISSN: 2343-6662, 31st July, 2018.]

[27] Infotrak, (2015). Market research study: East Africa university guide. Nairobi. Nation Media Group

[28] Iwuoha, C.V., & Peters, C.B. (2018). Mentoring in entrepreneurship: Astrategy for repositioning business education for post oil Boom economy. Journal of Association of Vocational and Technical Educators of Nigeria (JAVTEN). 23(2). 256-262.

[29] Jamil, A., Kareem, U., Atta, M. A., Rehman, M. H. U., Khan, M. Y., & Jan, T. (2012). Perspectives of university graduates about benefits of National Internship Program & the perceived impact of its discontinuation. International Journal of Learning & Development, 2(5), 175-181.

[30] Kaijage, E. (2000). Faculty of Commerce and Management, graduates and their employers: A tracer study. University of Dar es Salaam, Tanzania: Faculty of Commerce and Management, Unpublished paper.

[31] Kambi S. K., (2013). SESSIONAL PAPER NO. 2 OF 2013 ON NATIONAL INDUSTRIAL TRAINING AND ATTACHMENT POLICY. Ministry of Labour, Social Security and Services

[32] Kimmel, K. & Volet, S. (2012). University students' perceptions of and attitudes towards culturally diverse group work. Does context matter? Journal of Studies in International Education, 16(2) 157-181. http://dx.doi.org/10.1177/1028315310373833

[33] Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Prentice-Hall.

[34] Lai, C-H, Yang, J-C, Chen, F-C, Ho, C-W, & Chan, T-W. (2007). Affordances of mobile technologies for experiential learning: the interplay of technology and pedagogical practices. Journal of Computer Assisted Learning., 23(4), 326–337. https://doi.org/10.1111/j.1365-2729.2007.00237.x

[35] Leong, S. (2004). How to Develop Talent for Training. New York: Management Books.

[36] Levin, H. M. (1987). Work and education' in: Psacharopoulos, George (Ed.) Economics of education research and studies. Oxford. Pergamum Press.

[37] Lowden, K., Hall, S., Elliot, D. & Lewin, J. (2011). Employers' perceptions of the employability of new graduates. London. Edge Foundation.

[38] Magoha, P. W. & Alugongo, A. A. (2003). A framework for the delivery of a competitive undergraduate training programme in mechanical engineering: A JKUAT case study. World Transactions on Engineering and Technology Education. Vol. 2, No. 1. pp. 135-140.

[39] Mamun M (1998) Social forestry program in the Majalengka forest district, West Java, Indonesia: agro forestry systems and extension services. Unpublished dissertation, Iowa State University, Ames, IA

[40] McCollum JK, Schoening NC (2004) Case study of management internships: Eastern Europeans in America. Int J Public Adm 27(11–12):905–915. https ://doi.org/10.1081/LPAD-20003 7359

[41] Melink, M. & Pavlin, S. (Eds.). (2012). Employability of graduates and higher education management systems. Ljubljana. University of Ljubljana. Faculty of Social Sciences. Slovenia.

[42] Mohd F., A., Mazrul H. M. A., Zulkifli S., (2018). Employability Skills Through Industrial Training: Employers' perspective. Journal of Social Science and Humanities, 1 (5): 01-05, 2018

[43] Murali, S. & Rajaram, Y. (2015). A Study on the corporate expectations from engineering graduates in India. Journal of Business and Management (IOSR-JBM) Volume 17, Issue 6, V. III

[44] Ndungutse, D. (2005). Tracer study for 1980-2001 graduates of Faculty of Medicine, Makerere University. Kampala. Makerere University. Planning and Development Department.

[45] Oguntimehin, A. (2001). Teacher Effectiveness: Some Practical Strategies for Successful Implementation of Universal Basic Education in Nigeria. African Journal of Educational Management, 9(1), 151-161.

[46] Ondieki, C., Kimani, G.N., Tanui, E.K. (2018). Industry Based Learning Improves Skills and Training of Undergraduate Engineering Programmes in Kenya: Case Study of the University Of Nairobi. IRA International Journal of Education and Multidisciplinary Studies (ISSN 2455-2526), 11(3), 63-74.doi: http://dx.doi.org/ 10.21013/jems.v11.n3.p2

[47] Osmond, J. & Roed, J. (2010). Sometimes it means more work…: Student perceptions of group work in a mixed cultural setting. In E. Jones (Ed), Internationalisation and the student voice: Higher education perspectives. New York: Routledge. pp.113-124.

[48] Republic of Kenya (2005). Sessional Paper No. 1 on a Policy Framework for Education Training and Research. Nairobi. Ministry of Education, Science and Technology.

[49] Republic of Kenya (2006). Transformation of higher education and training in Kenya to secure Kenya's development in the knowledge economy. Report of the Public Universities Inspection Board. Nairobi: Office of the President.

[50] Republic of Kenya (2007). National strategy for university education 2007-2015: Investing in the future of university education. Nairobi. Ministry of Education

[51] Republic of Kenya (2012a). The Engineers Act, 2011. Nairobi. Government Printer.

[52] Republic of Kenya (2012b). Sessional paper no. 14 of 2012 on a policy framework for education and Training. Reforming Education and Training in Kenya. Nairobi. Ministry of Education.

[53] Republic of Kenya, (2015). Human resource development policy for the public service. Nairobi. Public Service Commission.

[54] Republic of Kenya, (2016). Legal notice no. 97. The Income Tax Act (Set-off tax rebate for graduate apprenticeships) Regulations, 2016. Nairobi. The National Treasury.

[55] Sumathi R, Zainal A, Karim, C & Li, S (2012) "Students' Perception of Industrial Internship Programme" Education and Training Journal, Vol. 54 Iss: 2 pp. 180 –191.

[56] Svotwa, T. D., Rudhumbu, N., & Chikari, G. (2014). Perception of industry in Botswana towards Botho University student industrial attachment (SIA) programme. The Business and Management Review, 5(2), 205.

[57] Technical University of Kenya, (2013). Regulations and guidelines for industrial attachment. Nairobi: Technical University of Kenya. Unpublished handbook

[58] Tynjälä P (2008) Perspectives into learning at the workplace. Educ Res Rev 3(2):130–154

[59] Vong, S. L. (2014). Northern Visions: Inuit Health Care, Vocational Training, and Social Change during the Early DEW Line Era (Master's thesis, University of Waterloo).

[60] Western Governors University (2020). What is experiential learning? https://www.wgu.edu/blog/experiential-learning-theory2006.html

[61] Zeev, N. B., Mokyr, J., & van der Beek, K. (2017). Flexible supply of apprenticeship in the British industrial revolution. The Journal of Economic History. Volume 77, Issue 1. March 2017, pp.208-250 (https://eh.net/eha/)