

Chapter 17

Student Industrial Attachment during Pandemic Era: An Implementation Framework for Universities

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ABSTRACT

Student industrial attachment has been an integral component in most academic programs. The values held by this component provide the student with a work-based exposure which valuable to their continuous professional development. The work-based exposure complemented the classroom-based learning in producing industry-ready graduates. Unfortunately, the COVID-19 pandemic outbreak has affected the industrial attachment process and implementation. Consequently, several gaps in the industrial attachment implementation have been identified. Earlier studies, observations, and empirical evidence revealed that mode of implementation, duration of studies, assessment, and environment are the most significant factors affecting the quality of graduates and employability. Therefore, this study suggests the Student Industrial Attachment during Pandemic Era: An Implementation Framework for Universities as an effort to provide a possible solution to the above-mentioned impediments. The framework aims to provide a comprehensive guide to universities' authority in planning and implementation of the industrial attachment in terms of execution, time frame, appraisal, as well as resources and facilities. As we are still living in the pandemic, this framework is believed to be the first and original designed for universities to be adopted and adapted widely. Additionally, this framework has a great potential to be flexibly used in any pandemic circumstances. The framework will benefit universities and societies in providing guidelines in managing academic programs, monitoring student industrial attachment achievement, together with preparation for adequate resources (technology, financial, ambiance, and job scope).

Key Words: Industrial attachment, COVID-19, pandemic, framework, implementation

1. INTRODUCTION

Student industrial attachment has been recognized as an integral component in most academic programs. Patton and Dial (2000) defined student industrial attachment as

a form of working-based education that sets students to acquire practical knowledge and supervised experience. This program act as an essential segment of an academic curriculum in higher educational institutions (Stichman & Farkas, 2005), that provides the students with a work-based exposure valuable to their continuous personal and professional development. The role of supervision additionally provides a chance to comprehend practical skills ingrained in industrial and social organizations held down by academia (Hoyle & Deschaine, 2016). In the long run, the work-based exposure later complemented the classroom-based learning in producing industry-ready graduates.

It is believed that the total quality and duration of the attachment's operation are required to be well designed and appropriate to the students' majors (Nicholas, 2016). This is essential to nurture learning experience for the students, as well as excellent results for the business and higher learning institutions. However, under certain circumstances such as during the COVID-19 pandemic outbreak, it has affected the industrial attachment process and implementation. Early studies have highlighted empirical evidence on several deficiencies, particularly on the mode of implementation provided by the industries, duration of studies, assessments, and environment as the most significant factors affecting the quality of graduate and employability. With that in mind, this study aims to explore the potential solution to the above-mentioned impediments. The study also attempts to provide a framework that could act as a comprehensive guide to universities' authority during the planning and implementation of the industrial attachment in terms of execution, time frame, appraisal, as well as resources, and facilities.

2. LITERATURE REVIEW

This section reviewed the literature related to industrial attachment, COVID-19 pandemic, universities, industries, and students. The literature covers various sources including research articles, work process and workflow, and government reports.

2.1. Industrial Attachment and COVID-19 Pandemic

23rd January 2020 has marked the world with novel coronavirus disease. COVID-19 was declared as a global public health outbreak by the World Health Organization (WHO) (MOH, 2020). Education, training, and internships in the field of health sciences in most parts of the world were impacted by the COVID-19 pandemic (Alvin et al., 2020). Various literature has reported the challenges faced by students who undergone industrial attachment during a pandemic outbreak. Among the tremendous challenges are work-from-home practice, and job scope adjustment (Sun, Tang & Zuo, 2020).

2.2. Universities

The early study by Thiel and Hartley (1997) stated that student industrial attachment generates extensive impact when affixed to the learning institution's curriculum. Over the years, it can be seen that many higher learning institutions have incorporated this connection to equip the students with both qualified education and applied knowledge (Degraavel, 2011; Moghaddam, 2011). This movement has progressively established the need for students to become active learners and high time for educators in higher learning institutions to establish actual learning contexts for students (Nicholas, 2016).

In addition to advantages attained, several challenges are also reported concerning the universities, namely on internship organizations and academic preparation (Jackel, 2011). There is a need for frequent and thorough guidance by the internship coordinator. As accentuated by Renganathan, Karim and Li (2011), this could be seen as

an alarming element particularly in supervising and assessing student's first-hand learning, given that it could not take place without professional's support.

2.3. Industries

By hosting students on attachment, the industrial organizations can be of mutual benefit as well. They may benefit from the quality of support, fresh ideas, and energy that the students bring (Kho, 2012). Industries also can identify potential employees and recruiting those who are already familiar with the organizations. Dondofema, Mwenje, Musemwa (2020) highlighted organizations that take students for industrial attachment from higher learning institutions can reducing their wage bill. Andoh, Boadi, Minlah (2016) agreed that internship reduces shortage of labor and skills in the job market, give 88% of the students who went internship are absorbed in organizations.

2.4. Students

Employers always looking for working experience when recruiting new employees. This requirement has made the working experience and also industrial training fundamental in higher learning institutions. Khoo (2012) agreed that industrial training plays an important role in preparing the student for a professional career. Students learn the skills, work ethics, demands of the industry and practice what they have learned at university. This will increase students' employment prospects because they are trained to be job-ready. Interns also have self-confidence, time management and enhance theoretical training (Hughes & Moore, 1999).

Besides benefits gained, there are also challenges faced by the internship students which is believed comes from themselves such as inadequate preparation (Spann, 1994) and also inflexibility whereby interns are unwilling to make changes (Leeder, 2007), the supervisors, the task assigned and their intern status (Hoover, O'She & Carroll, 1998).

3. METHODOLOGY

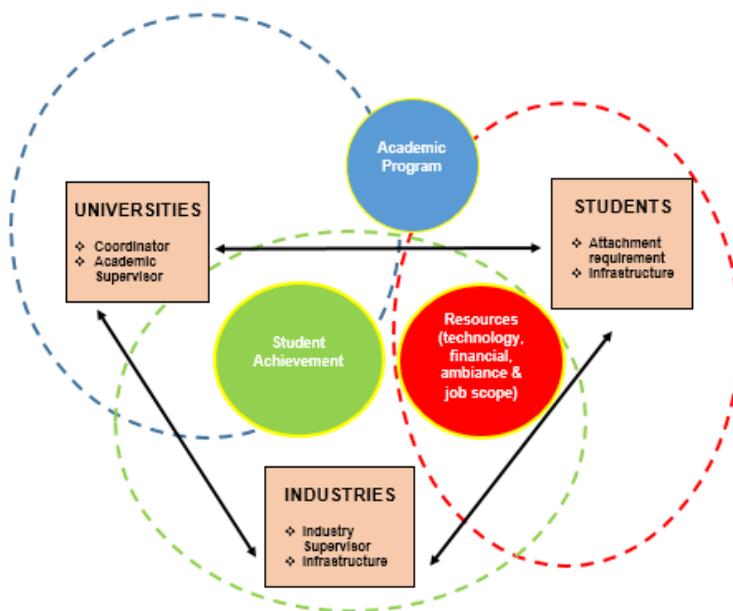
Document analysis was applied in this study involving the earlier studies, observations, and empirical evidence. Document analysis was chosen due to its capability in capturing and interpreting the data from the earlier studies, observations, and empirical evidence. Document analysis for earlier studies involving thorough analysis of data and identification of differences in reporting the findings. Observation in document analysis comprises of analysis of the existing work process and workflow together with the best practices applied in the recent COVID-19 pandemic situation. Observation also includes an interview with the related personnel (Iljazi et al., 2020) wherein this study context the coordinator and academic supervisor from University together with the industry supervisor were interviewed. Lastly, the empirical evidence involved surveying the current students' problem in complying with academic programs and also resources (technology, financial, ambiance, and job scope). Document analysis provides an opportunity for this study to openly create meaning from the findings and results of the analysis methods (Bowen, 2009). Through this analysis, we propose the implementation framework which will be discussed in the Results and Discussion section.

4. RESULTS AND DISCUSSION

Analysis from the data captured revealed that there were three (3) main parties involved in the industrial attachment which are universities, industries, and students.

Universities act as academic program providers which involved the task of coordinator in ensuring the smooth implementation of industrial attachment while academic supervisors are responsible for students' achievement. The second party is industries, which comprises resources and student achievement. Resources are referring to infrastructure, provided by industry to the students with a proper setting of a workplace, monthly allowance, ambience, and also job scope. Moreover, according to Signifyd (2021) COVID-19 pandemic provides the opportunity for students in continuous learning in a cloud computing environment. In addition, industry supervisors are responsible for the student's achievement from the industry side. Finally, the third party is students, covers resources and academic program. The academic program includes attachment requirements that are compulsory to be completed by the students upon graduation. Resources in the students party involved providing a good infrastructure such as networking, adequate facilities, and a conducive environment in performing their industrial attachment if they have to work from home. In contrast, Bugis (2021) reported 96% from students Saudi Arabian glad to continue their attachment on site despite of all the infrastructure. Universities, industries, and students are interdependent in ensuring the implementation of industrial attachment is possible to be used in any consequences including pandemic. According to Effah et al. (2014) despite the challenges faced by students, the industrial attachment remains important and relevant in training students in tertiary institutions.

The result has proposed the Industrial Attachment Implementation Framework as illustrated in Figure 1.



Industrial Attachment Implementation Framework

- Universities: Academic Program & Student Achievement
- Industries : Resources & Student Achievement
- Students : Resources & Academic Program

Figure 6: Industrial Attachment Implementation Framework

5. CONCLUSION AND RECOMMENDATIONS

It can be concluded that the industrial attachment program has benefited many parties including employers, which this program provides industry-ready graduates. The proposed implementation framework is believed to be very useful for universities in providing guidelines in managing the academic program, and monitoring student industrial attachment achievement. Other than that, it will benefit societies in providing guidelines in preparing for adequate resources to facilitate the unforeseen circumstances in facing pandemics.

As for the recommendations, the framework has a great potential to be strengthened by the Higher Educational Authority, such as the Malaysian Qualification Agency or local or international Higher Educational Institution in producing a national guideline and improvising the *Dasar Latihan Industri Institusi Pengajian Tinggi 2010 Kementerian Pengajian Tinggi Malaysia*.

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