

Instructors' Perception on the Implementation of Work-Based Learning Program in Automotive Industry

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ABSTRACT

Work-based learning (WBL) is a learning approach that is growing popularity in Malaysia. Its formal implementation at Malaysian public higher technical education institutions began with programs offered at community colleges and followed by polytechnics. This study was carried out at one of the automotive companies that implemented a WBL program with polytechnics. This study was designed to examine the strengths and weaknesses of the WBL program implementation and to identify the characteristics of competencies the instructors should have. This study utilised a qualitative approach by using a structured interview. The strength of the program was in terms of providing facilities that support the implementation of WBL. The weaknesses identified were related to the training implementation and monitoring of instructor's competency in teaching and learning which were less systematic. The study suggests the characteristics for instructors which include academically qualified, extensive experience in the automotive industry, interest on teaching and learning and deep understanding of their responsibility in implementing of WBL.

Keywords: Work-based learning, automotive industry, instructors' competency, polytechnics, Malaysia

INTRODUCTION

Work-based learning (WBL), also known as workplace learning is based on constructivist theory (Wilson, 1972; Wilson, 1997). With this approach, learning occurs through the development of meaningful constructs (Mardini, 2013) and the experience in real work situations. Thus, Richard (2013) states that WBL is a subset of experiential learning. WBL approach in higher technical and vocational education and training (TVET) has started in the 1960s and grew rapidly in the mid 1990s and dominated the fields of business, engineering and nursing (Freestone *et al.*, 2006). WBL implementation has improved the quality of education as well as promoted the public trust in TVET education system itself (Richard, 2013).

According to Boud and Solomon (2001), WBL education system incorporates collaboration between higher education institution (HEI) and work organization or industry in the form of learning opportunities in the workplace. WBL philosophy is based on the concept that students need to be in a real work situation for effective learning outcomes (Sangster *et al.*, 2000). WBL approach allows theory and practice to be linked in a balanced and meaningful way (Ani Asmah, 2009; White, 2012; Mardini, 2013). WBL is regarded as workplace learning due to the practice and practical implementation done in a professional manner in accordance to the work standards (Carpentier *et al.*, 2011). Hence, WBL could produce graduates who have the skills and meet the needs of the industry and the workforce. In the nutshell, WBL is a form of learning system developed and implemented together with the industry (Boud and Solomon, 2001; Lester and Costley, 2010; Liyanage *et al.*, 2013).

WBL has not only benefited the university and industry, but also has a positive impact on the culture of teaching and learning (T&L). WBL could enhance the students' motivation and critical thinking as well as able to bridge the gap between theory and practice and to enhance opportunities for future curriculum development (Quick, 2010; White, 2012). WBL also able to improve an organization's productivity and innovation, and enhance opportunities for career development and drive learners or students toward maturity of adulthood through the development of social experiences in the workplace. Thus, WBL could and enhance the employability of graduates in the employment sector (Richard, 2013). WBL combines the strengths from the industrial sector and the training institution. The industry is able to offer the experience and the latest technological amenities (Boud & Solomon, 2001) while the higher education institutions also have strengths in the service of teaching and learning as well as in the form of recognition from professional bodies (Workman, 2011; Workman *et al.* 2011).

Nevertheless, there are several challenges that need to be addressed by all parties who wish to achieve this noble goal. According to Edward *et al.* (2013), the key success factor in WBL depends on the ability of higher education institutions to respond quickly and effectively to the needs of the industry for the purpose of upgrading the skills of the workers. Murdoch (2004) argues that the success of an educational system that is based on the collaboration requires a common understanding between all parties involved in the aspects of responsibilities, roles and practices.

The 9th Malaysia Plan (9MP) has highlighted that Malaysia needs to improve the quality of the workforce by increasing the number of employees who are knowledgeable and skilled. Therefore, in order to realize this objective, the active cooperation among the government, higher public education institutions and industrial sector have to be nurtured. A number of WBL programs in technical and vocational fields under the supervision of the Ministry of Education were offered as early as 2007 in the Community Colleges followed by Polytechnics in 2010. In the early stage of WBL implementation, the industry has only limited participation from government-linked companies (GLC). However in the later years, the private sectors have begun to be actively involved in collaborative WBL. Among the industries that are willing to collaborate with the polytechnics are Malaysian Airlines System, Proton Holding, Faber Group Berhad, EON Big Group, and Mesiniaga Berhad.

STATEMENT OF PROBLEM

There are several issues that have been recurring in the implementation of WBL such as issues relating to the provision of human resources and facilities, issue of the program implementation, issue of adaptation of learning goals and students' learning outcomes and the issue of students' needs (Freestone *et al.*, 2006). The Quality Assurance Agency for Higher Education in Scotland (2010) also outlines five issues and challenges in the implementation of quality WBL which includes management among higher education institutions and industry; triangular relationship among higher education institutions, industry and students; program and curriculum development guided by the needs of industry and students; delivery of teaching and learning in the workplace; and evaluation of students' learning outcomes and program effectiveness.

Code of Practice for Program Accreditation issued by the Malaysia Qualifications Agency (2010) emphasizes the availability of qualified academic staff and the adequacy educational resources as the criteria for accreditation of a study program. Elements of academic staff include overall management recruitment procedures involving staffing, minimum qualification of instructors, services and development in terms of competency training as well as recognition and reward or remuneration received by instructors based on their achievements. Educational resources, on the other hand, include facilities, teaching equipment, and learning. Brennan and Little (2006) explain that in the execution of WBL, teaching and learning is a key component to be considered apart from the preparation and placement of qualified students in the industry. For this purpose, the training institutions and employers should implement a process of selection of students who meet the criteria for industrial placement.

Izashahida (2009) examined WBL program implemented at a Community College found that mentors or instructors in the industry were unable to motivate students because they lacked the understanding on how students learn and did not know the support methods that could be implemented to help the students. Similarly, in another study conducted by Wazli (2010), industrial mentors or instructors did not implement effective teaching and lacked the awareness toward students in addition to unsystematic student evaluation and failed to demonstrate commitment and cooperation for the WBL to be successful. Azman (2012) investigated the effectiveness of WBL implementation in polytechnics found that industrial trainers or instructors are not clear about WBL and their roles in the program. Therefore, industrial mentors or instructors need to know and understand their roles in guiding and implementing WBL (Azman, 2012). Ideally, industrial instructors must have complete knowledge regarding their organizations to which they belong and be able to share that knowledge with the students (Work-Based Learning Manual, Idaho, 2007).

In effective teaching practices, Rahil *et al.* (2009) suggested that teachers or instructors should plan their teaching activities, set up teaching strategies and techniques; implement the teaching process; and evaluates the effectiveness of teaching and learning. In addition, Leaman (2008) suggested an effective instructor must be able to master the varied styles of teaching, to manage students' discipline, to monitor the learning environment, and to encourage co-curricular activities outside of the formal teaching and learning. According to Mok Soon Sang (2008), a teacher should act as a guide, a facilitator and a planner, while the main role of the student is to be involved in the learning activities. Thus, student's experience and readiness is an important factor that may influence the development of his or her knowledge. Hence, to enhance the competency of the industrial instructors or trainers, the WBL coordinator should provide appropriate trainings and courses for them (Nixon, 2008; Bolden *et al.* 2009; White, 2012).

PURPOSE OF STUDY

The purpose of this study was to identify the strengths and weaknesses of WBL implemented in an automotive industry in Malaysia based on the perspectives and experiences encountered by the instructors. This study also aimed to identify potential improvements to be implemented to ensure effective WBL in the future.

METHODOLOGY

This study used qualitative approach where a structured interview protocol was utilized as the instrument. Usage of structured interview was intended to obtain rich information about a phenomenon (Sekaran, 2000; Chua, 2012; Creswell, 2012). The qualitative data were analyzed based on emerging themes related to the study. In the selection of the participants, the researchers used a purposive sampling method. Four participants were selected among the industrial instructors for the WBL program implemented in an automotive company in Malaysia. Instructors from the industry consisted of two managers, one senior engineer and one executive. The researchers' used interview to probe deeply regarding the effectiveness of WBL implementation. The technique allowed researchers

to pose the questions directly while the participants would be able to respond in a transparent manner to the questions asked.

In the initial stage of the interview, an open question was utilized to gather in-depth information of the study (Norazilawati *et al.*, 2013). Generally, the interview consisted of three main components: introduction questions, key questions and closing questions. Introduction questions were used to reveal the participants' background and ensure the relevancy of the participants selected in line with the purpose of the study. Furthermore, the involvement of the participants in WBL program management and program development were also asked to determine the level of participants' involvement in the implementation of WBL. Key questions consisted of five questions: (1) What are the competencies that an instructor should have? (2) Has the instructors received adequate training on WBL? (3) To what extent the facilities and equipment are adequate to ensure successful implementation of WBL? (4) What are the quality and characteristics of students enrolled in WBL program?, and (5) To what extent the remuneration has been provided to the instructors? The closing questions were related to the achievement of the WBL. The interviews were recorded and transcribed.

FINDINGS

The participants of this study comprised of experienced people in the company (Table 1). They were selected due to their crucial role as stakeholders in the program. As such, it was essential to explore their perceptions and views pertaining WBL program implemented in their company.

Table 1: Background of participants

Background	Participant 1	Participant 2	Participant 3	Participant 4
Gender	Male	Male	Male	Male
Age	54 years	54 years	45 years	32 years
Industrial Experience	27 years	20 years	18 years	7 years
WBL Teaching Experience	3 semesters	7 semesters	7 semesters	4 semesters
Academic degree	Bachelor	Master	Bachelor	Master
Role	Manager	Manager	Senior Engineer	Executive

After performing the breaking-the-eyes session, the researchers went deeper to probe the participants' knowledge on WBL based on the interview protocols. The order of the interview questions was based the objectives of the research. Modifications were also made to the way the interview was handled to enable the researchers to elicit responses and views of the participants according to their experiences as instructors or trainers of WBL.

Competencies of WBL Instructors

Selection of industrial workers to be involved as instructors or trainers was an important aspect in the success of WBL program. Researchers highlighted the key questions that were related to the essential of competencies essential to become WBL instructors or trainers.

"Teachers must have experience in the work field, and of course they have to know the subject matter (subject content) ..." [R1]

"... most of the teaching staff has a deep interest in T&L ... WBL program, trainers should be very experienced in the industry because the students will learn through

the teachers' experience ... another characteristic of competency is the ability to master English because students see us as example ... " [R2]

"Most of those involved in the WBL is there to share their experience with the students ... we need to share the experience and knowledge so that students who gain this knowledge will not repeat the same mistakes in their work ... the management selects staff that has extensive experience in manufacturing projects so that they can share their experience with students ... " [R3]

"Teachers need to consider teaching as a charity. Instructors need to make sacrifices ... trainers must have the intention to teach and educate people ... the important thing, we must be willing to listen to what the students have to say we from the factory had no basis in education but we uses previous experience. " [R4]

Based on the responses given, most respondents agreed that instructors must have experience in the specific work, and have to know the subject content and possess deep interest in research and development. The instructors should also be very experienced in the industry for the students to learn through their experiences. Most of the instructors involved in the WBL were willing to share their experiences with the students. Sharing of experiences and knowledge with students enable the students to obtain better understanding and prevent them from repeating the mistakes in their work. Some of the selected instructors have extensive experience in manufacturing projects that enable them share their experiences with students. Instructors also need to consider their involvement in teaching as social responsibility. Furthermore, instructors need to make sacrifices. Instructors often use previous experiences to teach their students. Thus, it can be concluded that the individuals selected to become WBL instructors must possess: (1) experience in the given industry, (2) knowledge on the related subjects taught, (3) positive attitude toward the implementation of WBL, and (4) the willingness to share their experiences with students and awareness of the tasks entrusted.

Adequate Training on the Development of WBL Competent Instructors

In the following question, the researchers sought the views of the informants pertaining to training and competencies of the instructors or the trainers for the purpose of teaching and learning WBL program. The question was related to the implementation of WBL teaching and learning and the evaluation of the competencies of the instructors.

"We didn't know the techniques of teaching, but we use common sense. The institutions have been coming to provide courses for trainers, how to teach, how to do the assessment, but when we listen, we can't absorb it (understand) because giving lesson is not our field ... "[R1]

"The institution had made some briefings related to WBL program in workshops. However, WBL instructors need to explore and develop their own teaching experience... We in the industry only know knowledge in the subjects, but to teach we need the skills to teach. We need to find our own skills to implement T&L ... "[R2]

"In the beginning, the institution has implemented a course for WBL trainers but lately it has not been implemented. I think the early course is enough but additional courses are required on an ongoing basis ... "[R4]

The respondents revealed that briefing from the WBL coordinator on how to teach was very important. Training had been implemented to train instructors or trainers for the purpose of teaching and learning. The polytechnics had conducted courses for instructors on how to teach and how to assess. Nevertheless, at times the instructors had difficulty to teach because pedagogy was not their expertise. Furthermore, these courses were also failed to sustain lately. As agreed by all the respondents, instructors also need to take their own initiative in obtaining skills to teach. Most WBL

instructors in industry were subject matter experts so they would need to learn the art of teaching and it would take time. Thus, the WBL instructors need to explore and develop their own teaching methods as well as to take additional courses on assessments regularly.

Facilities and Equipment Related to the Implementation of WBL

The participants' views in relation to the infrastructure and teaching and learning facilities available for WBL instructors or trainers and students were as follows:

"... teaching and learning equipments are adequate... just no wifi ..." [R1]

"Basic facilities adequate and suitable for teaching and learning ..." [R2]

"At the moment, the facilities are in accordance with the numbers of students ... there is library consistent with the requirements of MQA, equipment and computer facilities ..." [R3]

"So far all equipments and facilities are adequate just that wide varieties of books needed to be added for students' reference ..." [R4]

Generally, the respondents were satisfied with the infrastructure and the equipments. This shows that the training facilities in the automotive industry were adequate. The equipment and facilities were also adequate for the teaching and learning. However, for improvement, the interviewees suggested additional books and wireless internet facilities need to be put in place.

The Qualities and Characteristics of Students Who Attended WBL Program

In terms of the quality and characteristics of students who attended WBL program, the informants asserted that:

"I am not satisfied with the English literacy of the students ... I feel shocked, students are not confident to communicate..." [R1].

"For me, my level of satisfaction is at the level of ok (satisfactory). New executive who just began working also have the same problem, namely English fluency. Students must have basic in English. Students have good discipline ... "[R2]

"Students should have interest and the ability to learn quickly..." [R3]

"In addition to language skills, students must be willing to learn and care for the learning process. Students also must not be too selective in studying and making assignments ... "[R4]

Most respondents agreed that the ability to speak in English was the key feature to any student who wished to pursue a WBL program. The other features that they need to have was passion for their field of study and the ability to master the knowledge quickly.

Benefits Provided to the Instructors

Varied inputs were revealed by the respondents regarding the benefits provided by the polytechnics and the industry to participate in WBL:

"Compensation and benefits ...to me is not that important." [R1]

"Rewards provided by the teaching and learning institution (polytechnics). Remuneration is not an issue because the session implemented in an industrial area. Remuneration and compensation is not the motivating factor to the WBL instructors. ... "[R2]

"The management has stated that the financial rewards are minimal paid by institutions (polytechnics). From the beginning of the program, we know that the remuneration is incidental and there is not much advantage. We sincerely wish to contribute. There is no significant impact on the marks for promotion ... there is also no rewards in the form replacement leave. Benefits received are more in the form of providing training and courses ... in WBL ... also recognition in the form of appreciation letter. Any additional allowance is considered as a bonus ... "[R3]

"... benefits in terms of material... not very satisfactory because the number of actual teaching hours is greater than the maximum claims allowed. But the rewards in terms of experience to create and process examination questions and provide teaching materials are very good for me if I someday want to change to education profession.... "[R4]

Three out of the four participants interviewed considered financial rewards were not crucial. However, one informant felt least satisfied with the financial rewards. Participants regarded their involvement in WBL as opportunity to accumulate experience in the field of education. Reward in the form of remuneration was not an issue because the teaching and learning session implemented was in the company. Small remuneration was not a problem to most WBL instructors. The management has stated that despite the minimally paid financial rewards by institutions, the instructors were still motivated to involve in WBL program. Since the beginning of the program, they have known that the remuneration was incidental. Although remuneration played no significant impact on the WBL instructors, a letter of appreciation was necessary for recognition. Any additional allowance was considered as bonus.

Achievements of the WBL Program

Through the last key question presented, the researchers obtained participants' views regarding the achievement of WBL program. Here were some of the responses:

"I see the goal achieved. The question is whether we can achieve greater ... "[R1]

"In my opinion, this program achieves its aim as students learn directly with industry practitioners. Students have the advantages of being exposed to work experience during the period of study ... "[R2]

"In my opinion WBL goal for this program is achieved ..." [R3]

"... to me whether achieved or not, our main goal is to teach students to study or work in the industry. Improvement opportunities in WBL industrial management and monitoring from the institutions of higher learning ... " [R4]

It can be summarized that respondents agreed that the implementation of WBL has achieved the desired goals. The students acquired the knowledge and at the same time they gained experience in the industry.

CONCLUSION AND SUGGESTIONS

The strengths identified in the implementation of WBL in the automotive industry were related to the provisions of facilities and equipments. However, the main weakness in the implementation of WBL that needs to be addressed was the inadequacy of instructors' competency. In addition, the polytechnics and industrial management failed to implement a comprehensive monitoring of the performance and competency of the instructors or trainers. In terms of the trainees, the major

weakness identified was related to the inability of the students to master the English language as one of the main communicative languages.

Nevertheless, the study found that instructors tended to cooperate in ensuring the success of WBL and financial rewards were not considered as an important aspect in the implementation of WBL. It could be concluded that the characteristics of instructors or WBL trainers should have included the academic qualification with knowledge of related subjects, extensive experience in the automotive industry, strong interest in teaching and learning and awareness of the responsibility of WBL implementation. The characteristics that WBL students should possess: able to communicate in English, have deep interest in the field of education as well as the ability to learn quickly. Researchers also found that the practice of monitoring and evaluation of WBL program was not implemented systematically and comprehensively. Unlike most countries that have adopted the process, lack of clear policies and guidelines for WBL implementation in Malaysia was a setback. Hence, the development of policy and guidelines for the implementation of WBL is deemed necessary to be developed and sustained.

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