

# No 6. Work based Learning

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## Work-based Learning Model and Its Urgency in Preparing Culinary Art Education Graduates

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### Abstract

Vocational education's primary mission is to prepare a workforce that can be done among others by strengthening the 21st-century learning. Despite numerous studies on learning, there are still very few actual learning processes that successfully help students to enter the job market. This article is based on a research and development study aimed to depict the Work-based Learning (WBL) model and its urgency in preparing work-ready graduates for vocational education. The research subjects involved industry practitioners, academic supervisors, and students of the Culinary Art Education in a state university in Indonesia. The model was implemented on 40 students, selected using the purposive sampling technique. The research took place in hotels located in Yogyakarta and Central Java. The data were analyzed using both the descriptive qualitative and descriptive quantitative methods. The findings show that the WBL model is feasible for preparing work-ready graduates, as indicated by the twelve indicators on how to behave in the workplace, i.e. adapting to the workplace, carrying out relevant tasks, doing new things, working well as a team, showing serious commitment, interacting with instructors, interacting with the equipment, interacting with the foodstuffs working according to procedures, and working according to models.

**Keywords:** *learning model, work-based learning, vocational education*

### 4 1. Introduction

Education is a conscious and planned effort to create learning atmosphere and learning process for students so that they may actively develop their potential and have a solid religious, spiritual strength, self-control, personality, intelligence, character, as well as the skills that they need for themselves, for the community, for the nation, and the state [1]. Education is aimed at improving human potential through learning processes. This statement implies that the development of human potential depends on the quality of the educational process. This is a challenge for thinkers, planners, and implementers of education to plan and develop a national education system that is relevant to the demands of society as well as the development of science and technology.

Indonesia encounters a severe challenge in the development of 21st-century education as it enters the era of Massive Open Online Courses (MOOCs) [2]. Disruption occurs in various fields ranging from government, economy, law, business competition education, and social relations [3]. The 21st-century education emphasizes readiness in facing the 4.0 industrial revolution, which highlights the future of education. This era is quite challenging for the

Indonesian people because students must possess various intercultural, interreligious, and interlanguage competencies. The Teachers and Education Personnel Directorate (TEPD) has emphasized changes in the paradigm of the learning process from the traditional learning process to the new one. These changes include the transformation from teacher-centered to student-centered learning model, from a single textbook to resource-based learning, and from the single instruction approach to the multiple instruction approach.

The primary mission of vocational education is to prepare students for employment [4]. In Indonesia, this mission has been described in the objectives of vocational education [5]–[8] namely: (1) preparing students to become complete Indonesian humans who are able to improve the quality of their lives, are able to develop themselves, and have the expertise and courage to open opportunities to increase their income; (2) preparing students to become productive workers; (3) meeting the needs of the workforce of the business and industry; (4) creating employment for themselves and for others; (5) changing their status from a dependent to a productive nation; (6) preparing students to master science and technology; (7) being able to follow, master, and adapt to the progress of science and technology; and (8) having the fundamental abilities to develop themselves sustainably.

The big concern faced by the job market today is the difficulty of getting quality workers because often there are differences between the skills needed by the work and what is offered by job seekers. The world of work requires workers who are competent, skilled, and ready to work. Therefore, the education sector in Indonesia requires vocational education capable of improving its vocational skills through training with the right methods, in order to generate highly skilled workers. Skilled workers play a role in the industrial sector and services because they determine the level of quality and production costs, thus supporting the growth of industrialization in a country.

The skilled workforce can apply technology, and they might have better chances of getting work and being productive. Therefore, the more skilled citizens a country has, the stronger the country's economy will likely be. Conversely, the more unskilled citizens a country has, the higher the possibility of unemployment the country might have. The high unemployment rate puts a strain on the country's economy. Moreover, the use of new technology requires new skills. This causes the outdated skills to be less relevant. These demands must be anticipated not only by educational institutions but also by practitioners in the industrial world.

The industrial world demands professionalism, accurate-fast-efficient work, time efficiency, and autonomy. The professional attitude is shaped by the environment and the education system, especially the learning system and pattern. Parameters of the quality of education in terms of inputs, processes, and educational outcomes always change from time to time. Therefore, the quality of national education must be continuously improved through renewals that can be accounted for to the public. This way, the education sector can provide the younger generation with competitive advantages in national and international scope.

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Work-Based Learning is one of the learning models suitable for vocational education. Learning in the WBL context is a systemic process of activities to achieve competencies that must be mastered by students in the cognitive, affective, and conative domains. WBL is based on work experience as it emphasizes learning at work, learning through work, learning for work, and learning from work [9]. In several vocational education institutions, WBL is applied in several forms ranging from industry visits, guest lecturer visits, fieldwork practices, and industrial practices or internships. Those terms are distinctive to each other and have different purposes and levels.

3  
WBL is active and dynamic learning that gradually develops throughout one's lifetime and has been practiced around the world [10]. The learning process at WBL includes giving students work experience in the industry to gain experience and apply their skills in relevant industries based on what is needed by the workplace. In [11] state that WBL exposes students to various work settings to help them in making decisions about their future careers. Also, cooperation from three parties, namely students, educational institutions, and the industrial employer, will encourage the success of the WBL [10], [12].

The work-based Learning model is implemented in the culinary sector because of some reasons. Firstly, the food processing sector, especially in the foodservice industry, has existed for a long time ago. The evidence of such a claim is pointed out by [13] that some tribes in 10,000 BC in Denmark and Orkney Islands of Scotland cooked meals in a considerable portion, and people got together to eat. Secondly, the culinary field has developed rapidly recently so that many regions are targeting the Locally Generated Income (LGI) from this sector since it is the potential to increase the community income. Thirdly, there has been a fundamental evolution in the culinary sector, such as the classical food presentation model and the modern molecular one.

This kind of situation requires the availability of a professional workforce who possess the work competences and are adaptive to changes. The work in the culinary sector needs complex competences. It does not need skills limited in operating machines. Workers need to appreciate the values of working, which are relatively difficult to achieve by graduates who do not have any work experience. In [14] states that the fields of food processing and serving have a specific professionalism standard for the workers. Professionalism is something that is embedded and influences a worker's behavior. It is shown in a way he/she cares about qualities and works quickly, correctly, efficiently with or without supervision. He/she will always appreciate the time and maintain reputation [15].

It is commonly believed that industrial practicums expose several problems for the students, for there is neither proper implementation, clear guidance, monitoring, nor specific predetermined skills they have to master based on the demands of the field. For these reasons, there should be improvements in the learning model. The Work-Based Learning model implemented to develop students' competences in food processing may solve the problems stated above. This learning model can probably facilitate the expected learning

outcome of generating work-ready graduates having suitable competences with industry standards.

## 2. Methodology

This study employed a Research and Development (R&D) design. Based on the type of data, this was mixed-method research or a combination of qualitative and quantitative studies [16]. The WBL model implementation was carried out in seven starred hotels in one of the provinces in Indonesia. The purposively selected research participants consisted of 40 vocational students of the culinary art Department, Faculty of Engineering, in a state university in Indonesia having an internship in starred hotels. The technique of obtaining research subjects was purposive sampling.

Data analysis uses qualitative and quantitative analysis. Qualitative analysis is carried out in the form of numerical assessment results, comments, criticisms, and suggestions from expert judgments. Meanwhile, quantitative data analysis was used to assess student learning outcomes when involved in the WBL program in the industry for 12 weeks. Student behavior is assessed every week. The instrument for evaluating student achievement uses 12 indicators consisting of there are efforts to adjust to the work environment; activities relevant to the aspects studied; do new things; ready to repeat the same job; can work individually; severe self-involvement; there is interaction with the instructor; can work as a work teams; there are interactions with special work tools; there are interactions with materials; works according to work procedures; work according to the example. The rating scale uses two choices, namely "1" refers to if the observed behavior appears, and the scale of "0" refers to if the observed behavior does not appear. Calculate student achievement levels using equation (1):

$$\text{Achievement level} = \frac{\text{Score obtained}}{100} \times 100\%$$

(1)

## 3. Results and Discussion

### 3.1. Work-Based Learning Model in Culinary Art Department

The Work-Based Learning model was generated from the results of needs assessment as well as limited and extensive tryouts. The components used in the model were (1) lesson plans, used by the coordinator or supervisor to direct students to achieve specific competencies; (2) a food processing model manual with a WBL approach consisting of model implementation guidelines, learning guidelines for students, and instructors and supervisors' guidelines; and (3) instruments of evaluation on students' learning achievements, both in the form of food competencies and employability skills after completing the internship.

The implementation of WBL has been primarily determined by the policies applied in the home institution and the industry where the students do their internships. This implementation refers to the on-site approach model providing learning activities with a real workplace environment through planning, implementation, and evaluation procedures [17].



These learning activities, including orientation, learning, and evaluation, are adequately handled and managed by the industry. In the process, the students are expected to consult any learning problems, especially the report writing to their supervisors.

In carrying out the internship, 12 indicators are defined in the implementation of the WBL model as an elaboration of experience learning, modeling, learning by doing, and situated learning. The twelve indicators are (1) adapting to the workplace, (2) carrying out relevant tasks, (3) doing new things, (4) working well as a team, (5) working individually, (6) showing serious commitment, (7) interacting with instructors, (8) interacting with the equipment, (9) interacting with the foodstuffs, (10) working according to procedures, (11) working according to models, and (12) carrying out the repeated work.

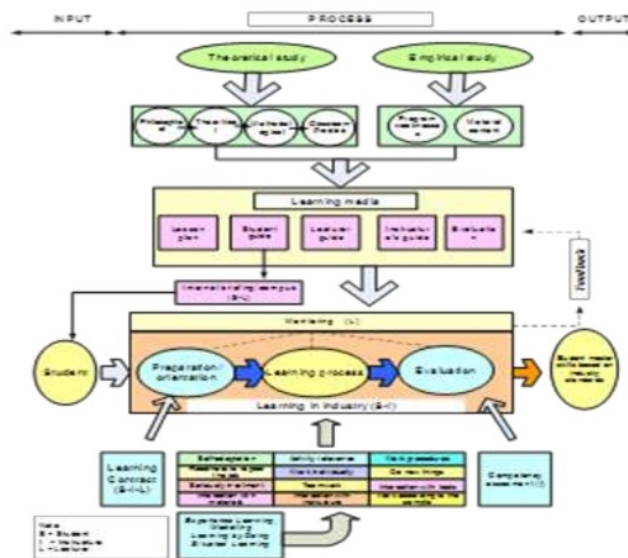


Figure 1. The WBL Model

This model describes the conditions of input, processes, and output of industry learning (see Figure 1). The underlying components for this model cover the theoretical and empirical studies. The theoretical inquiry includes the philosophical, theoretical, methodological studies, as well as classroom practices, while the empirical investigation deals with the needs assessment to identify the weaknesses of the internship programs carried out. It also reveals the suggested skills and contents to train during the internship program.

### 3.2. Work-Based Learning in the Food Industry

The WBL process in the food industry can be described through the interactions found in the work environment. There are 12 indicators proving that during the internship program, the students are involved in the real learning process. Such interactions are described in Figure 2.

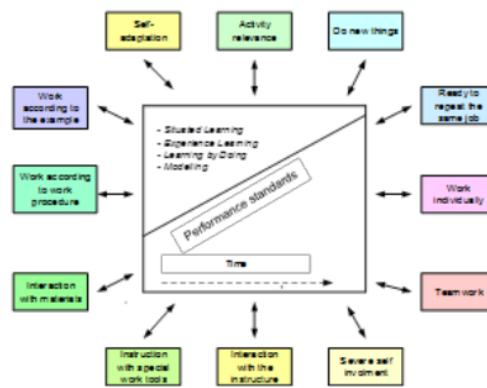


Figure 2. WBL Interactions

Achievement of student learning outcomes using WBL for 12 weeks involving 40 students is shown in Figure 3.

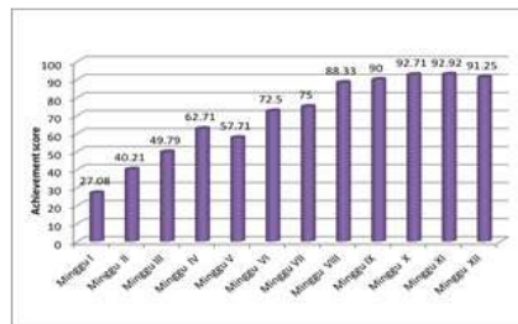


Figure 3. WBL Achievements in 12-week Implementation (%)

In Figure 3, it is apparent that the longer the program runs, the higher the WBL achievements will be. Nonetheless, it is found that at the end of the entire weeks, such a decline in the achievements is noticed. It is assumed that the students' low participation in the last week does not interfere with the results. Instead, at the end of the internship program, the respondents completed the program report and later went back to their campus. Based on these data, it was evident that the WBL model is somewhat successful in assisting the students to enter the world of work as they have had hands-on working experiences and learned through real interactions in the world of work.

The findings of this study indicate that the work-based learning model is critical in preparing vocational education graduates who are ready to work. Vocational education has historically been a development of job training. In job training, students can learn while working, therefore learning carried out in environments and situations similar to the real world is very suitable to be applied so that graduates have specific expertise. This is in line with the philosophy of vocational education in its development must be oriented to the

world of work and always sensitive to follow the development of the world of work [4], [5], [18].

WBL is very relevant for preparing graduates who are ready to work, because based on the philosophy of vocational education that is developed shows that for productive learning vocational education must be developed by people who understand and are sympathetic to vocational education, and its implementation requires full facilities and educated teachers [19]. The excellence of vocational education curricula in productive programs that serve the demands of the labor market is, therefore, more determined by the business/industry or professional associations. Based on some of these studies, the WBL is very much following the characteristics of vocational education and which emphasizes the success of the education process is determined by the performance of its graduates in the field and can provide useful skills and knowledge for the labor market.

The development of WBL learning in vocational education refers to the stages of input, process, and output. In each stage must involve the industry. This step is to ensure a match between the needs of the industrial world and the world of education. This finding is similar to the study conducted by [20], his study revealed that the design of learning design models for vocational education learning includes four aspects, namely: 1) needs analysis, 2) selection and sequence of competencies, 3) learning development and 4) evaluation of learning.

The application of WBL in the type of work in the catering sector, such as the restaurant industry, produces tangible products, including food and beverages and intangible products, among others: services, safety, hospitality, and comfort. Therefore the characteristics of the duties of a Head Cook must meet the criteria: able to use equipment and technology (tools and technology); have knowledge relating to the production, management and service processes; have resource management, negotiation skills; have good habits how to talk, think inductively and deductively; work activities, creative thinking, making decisions and solving problems; work according to the context responsible for the results of his work, contact with others; interest, realistic and artistic; work style, tolerant, have self-control, initiative, and persistent, and based on work values. The picture implies that as a cook requires complex competencies, not skills that are limited to the ability to operate the equipment, but to the appreciation of the values of work itself, something that is rather difficult to achieve by graduates who have no experience.

For educational institutions that are still conventional in implementing their learning programs, it is inevitable that the competency demands are challenging to reach and internalized by students as competencies that must be achieved, whereas in the opinion of [14] that to become a worker in the field of processing and services food takes a standard of professionalism.

Forming a professional attitude is not easy and cannot be taught only by giving understanding. This is because professional attitude refers to something that is embedded in a person that influences his behavior, which is caring for quality, working fast, precisely, efficiently without or with other



people's supervision, respecting time, and maintaining reputation [15]. Therefore, a professional attitude can only be formed through a process of habituation that takes a long time until the habit is internalized in a person.

To ensure the successful implementation of the WBL, the WBL characteristics must be met. In [21] state that there are six characteristics of the WBL, namely partnerships between external organizations and educational institutions; students employed in external organizations; learning programs that originate from the needs of employers and their employees; learners are involved in the process of recognizing their current knowledge, skills, and competencies; learning that occurs as an integrated part of a task completed at work; and learning assessed by educational institutions. In this study, findings show that the WBL has contributed to improving competence, but have not been able to answer why this increase could occur.

One of the advantages of implementing the WBL model in this study is that it is able to prove that standard performance can improve because in the learning process it requires 12 (twelve) behaviors, namely severe involvement; carrying out relevant activities; there are efforts to adjust to the work environment; there is interaction with the instructor; there are interactions with special work tools; there are interactions with materials/materials; works according to work procedures; doing new things; ready to repeat the same work; can work as a group member; can work individually, and behave according to the example. These twelve behaviors have an essential role in improving the quality and competence of students to obtain excellent academic performance, skills, and behavior. Previous studies also revealed behaviors needed in the learning process in the Food and Beverage Production section of the internship program, including the ability to work together, focus on doing work, responsibilities, work initiatives, and discipline [22]. All experiences in the workplace can produce a performance when a learning process occurs [23].

Although many advantages can be obtained through the WBL, it does not mean that the WBL has no weaknesses. Some weaknesses include the need for collaboration between educational institutions and stakeholders, which is not easy to do. Likewise, educational institutions require many supporting components, such as program management, coaching lecturers, and funding to support the program's success.

The development of Work-Based Learning (WBL) model is based on four components: philosophies (existentialism and essentialism), theories (cognitive and humanist theories), and methodologies (experience learning, learning by doing, situated learning, and modeling), and classroom practices (learning objectives, stages, strategies, approaches, settings, and evaluations). This model also reveals the input, process, and output of the industry learning. The underlying components for this model cover the theoretical and empirical studies. Besides that, the urgency of WBL is indicated by the improvement of the interactions in the 12 indicators. The twelve indicators are (1) adapting to the workplace, (2) carrying out relevant tasks, (3) do a new job, (4) working well as a team, (5) working individually, (6) showing serious commitment, (7) interacting with instructors, (8) interacting with the

equipment, (9) interacting with the foodstuffs, (10) working according to procedures, (11) working according to models, and (12) carrying out the repeated work. Based on these indicators, it is likely that the WBL model can assist the students to be work-ready as they already have hands-on experiences in the world of work. They also learn through real interactions in the workplace. Therefore, this model may become one of the alternatives to prepare students as the workforce.

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