

# Professional Competencies in Internship in Work-Based Learning Setting

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**Submission date:** 09-Aug-2024 12:42PM (UTC+0700)

**Submission ID:** 2429394998

**File name:** rticle\_for\_Submission\_edit\_2\_-\_M.burhan\_Burhan\_Rubai\_Wijaya.docx (380.27K)

**Word count:** 4621

**Character count:** 27733

## Professional Competencies in Internship in Work-Based Learning Setting

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### Abstract

The main objective of this study was to find a model of internship in the context of Work-based learning in order to improve professional competencies for prospective teachers who must have 4 competencies (pedagogical, personality, social, and professional). The research was designed in stages by using the Research and Development (R & D) approach. The respondents of this research are students of the Faculty of Engineering, Universitas Negeri Semarang and the manager of the industrial work practice program. The results of the study found a model of the contextual employment practice of work-based learning in order to improve professional competence for prospective teachers. The analysis of the discussion shows the variety of readiness, attitudes, and quality of learning in the place of internship, so it needs to do the more further analysis so that students are better prepared in preparing themselves to participate in industrial work practice programs. In addition, the management of Internship has not used a model in the context of work-based learning, as expressed by the head of the fieldwork group of the Faculty of Engineering, Universitas Negeri Semarang. The implications of the findings of this model can be in line with the programs that have been prepared in the management of internship with an emphasis on work-based learning, which is expected to improve the professional competence of prospective ex-LPTK teachers.

**Keywords:** Internship; Model; Professional Competencies; Work-Based Learning

### INTRODUCTION

The position and important role of the Educational Personnel Education Institution (LPTK) is an institution that organizes academic programs in a number of scientific disciplines and develops education and teacher training and educates professional academic staff in the education field (Rokhman et al., 2017). Its existence is very important because it concerns the future sustainability of the role of the LPTK in developing quality human resources; LPTK has a never-ending commitment to national education.

Based on the Keputusan Presiden (Keppres) Number 124 Tahun 1999 about the change in IKIP Semarang, Bandung, Medan to become a University, then IKIP Semarang. Then it changed to Universitas Negeri Semarang (UNNES). The change of IKIP Semarang to UNNES were also followed by the change of the faculties in the UNNES, except the Faculty of Education (FIP). From six faculties in the UNNES environment, one of them was the Faculty of Engineering (FT) which was previously named the Faculty of Education and Technology and Vocational (FPTK). Development of the Faculty of Engineering which was originally called the Faculty of Technical Teaching (FKT), later changed to the Faculty of Technology and Vocational Education (FPTK) and finally became the Faculty of Engineering (FT), has the task of preparing technical teachers (Vocational High Schools) and in accordance with the Minister of National Education Republic of Indonesia (Number 16 of 2007 concerning Academic Qualification Standards and Teacher Competencies). Teachers are required to have four competencies, namely: (a) pedagogic competence, (b) personality competence, (c) social competence, and (d) professional competence (mastery of subject matter widely and deeply, designing, implementing, and compiling research reports, developing and disseminating innovation, designing, implementing and evaluating community service).

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Faculty of Engineering students from LPTK are prepared in different roles with Engineering Faculty students at non-LPTK (Danasasmita, 2015). LPTK, especially ex-IKIP tertiary institutions, as the producing institution for prospective teachers, has an interest in this matter and not only focus on issues relating to the education of senior high school, junior high school and elementary school teachers, including in the development of study programs. The facts show that more than 30 study programs in the Vocational High Schools and will continue to develop in the future in accordance with the direction of the development of Vocational High Schools (Kepala Badan Standar, Kurikulum, dan Asesmen Pendidikan, 2022). The problem faced by Vocational High Schools especially in the field of Technology and Engineering expertise taught by graduates of the Ex-IKIP Engineering Faculty is the relevance of the competence with the Business/Industrial World as a place of work for vocational graduates in the future (Béduwé & Giret, 2011). The relevance between the skills possessed by vocational high school graduates and the skills needed by the business world/industry is a source of problems for vocational high schools that are deemed unable to produce workers who are ready to use. Some gaps occur because the teaching of technology given at school is too theoretical and the practical equipment owned is limited in number and the development of technology in the world of work is faster than in vocational schools. Although the machines and work tools used in the work world are increasingly sophisticated (Morison, 2016) and require highly qualified personnel to handle them, the underlying principles of the technology remain unchanged (Adler, 1986). This is all the responsibility of the LPTK to prepare technical teachers who have adequate professional competence such as UNNES in the scope of Central Java.

The demand for professional competencies that must be possessed by prospective teachers who are experienced in learning in the industry is very important so that the Internship (Prakerin) is included in the curriculum (Fauziah et al., 2024; Nugraheni et al., 2022). It is expected that the Internship that has been carried out have a characteristic model of Prakerin for students of the Engineering Faculty of Ex-IKIP in order to achieve the goals of vocational education in the Faculty of Engineering Ex-IKIP in the application of professional competence (science and technology). The development of science and technology began with the identification of the substance of the study, packaging of subjects, preparation of teaching books, and preparation of other supporting devices (Thiagarajan & Sivasailam, 1920). The effort that has been taken is obligate students of Faculty of Engineering to take internship (prakerin) courses.

In one side, the students of the Faculty of Engineering of ex-IKIP at the time in the industry turned out to have a different final goal after carrying out the internship, the competencies obtained were not to be applied in the industry but to teach vocational students (Samidjo, 2017; Sitorus, 2021). Thus it is necessary to find the best Prakerin model solution for students of the Engineering Faculty of ex-IKIP.

Work-based learning (WBL), which becomes the learning philosophy of vocational education, should be the basis for developing vocational education as in the Faculty of Engineering, which has a technical education study program (Ferrández-Berrueto et al., 2016; Sweet, 2013). Work force involvement plays a very important role, because industry is a place to get learning experience, conduct learning in a real workplace, gain new experience in developing competencies (Atkinson, 2016; Gray, 2001; Stephen & Festus, 2022). One form of WBL for Faculty of Engineering students in the industry is an internship or work practice as stated in the curriculum is internship (Prakerin). Thus, a model is needed which is the most effective Internship for Ex-IKIP Faculty of Engineering students in the context of work-based learning (WBL) in order to develop professional competencies. Industry-based learning strategies in the internship course are always associated and relevant to the rapid development of technological science in the business world and industry in the engineering field. Therefore, the emphasis on the learning experience is in accordance with the work atmosphere in the business and industry so that the model of internship (prakerin) is always in the context of work-based learning.

## METHODS

This study used a research and development approach. This is related to the general objective of the research, which is to find a model of internship (prakerin) in the context of work-based learning to develop professional competencies for students of the Ex-IKIP Engineering Faculty. Thus, this study seeks to obtain data relating to the components of industrial work practice learning that run in the management at the Engineering Faculty of Ex-IKIP, through development and validation carried out to validate the concept of the model as a

hypothetical model. As explained by Borg & Gall (1989), "Educational research and development (R & D) is a process that is used to develop and validate educational products". The purpose of educational products does not only include material forms such as textbooks, learning films, etc., but also relates to the development of processes and procedures, such as the development of teaching methods, development of learning instruments, or methods/models for organizing learning. The chronological chart can be seen in Figure 1.

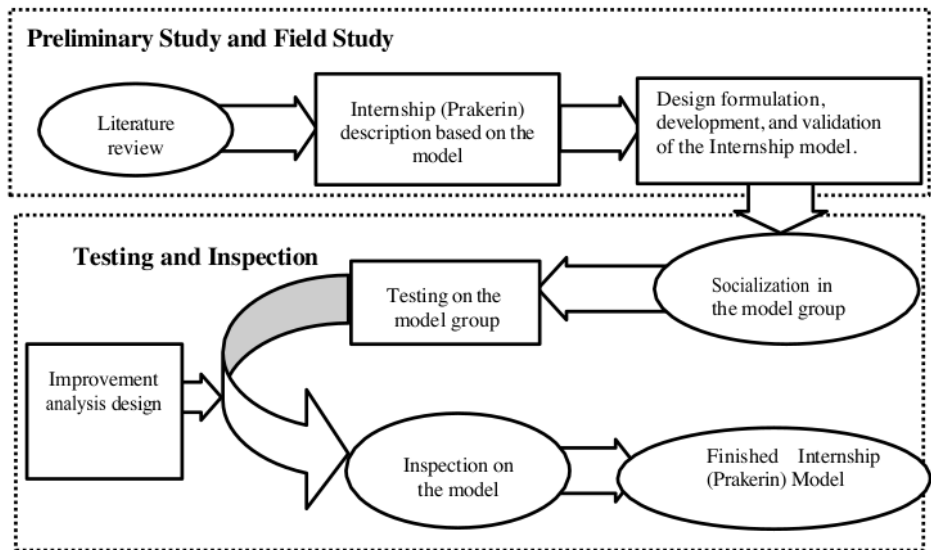


Figure 1. Chronological chart of research

This research and development carried out simplification of steps from ten steps Walter R. Borg & Gall (1989) into three stages, namely: preliminary study, development, and validation, which is divided into two years of activities. The first year, a preliminary study was conducted, and the second year, the model development and model validation were carried out. In detail, it can be explained in the first year that it will be carried out) Conducting a conceptual study of the internship (Prakerin) model in the context of work-based learning so that conceptual models can be formulated; identifying and describing the existing internship (Prakerin) model (existing model); and conduct Description and Analysis of Findings.

Conducting a conceptually study to the model of Internship in the context of work-based learning so that a conceptual model can be formulated,  
 Identify and describe the existing Internship (Prakerin) model (existing model),  
 Conduct Description and Analysis of Findings.

The second year will be carried out:

Develop a model through the formulation of Internship (Prakerin) models and preparation of implementation tool,

Model design validation through FGD,

Improvement of the model, resulting in the design of the Internship (Prakerin) model in the context of work-based learning (WBL) for Ex-<sup>13</sup>IKIP Engineering students (hypothetical mode),

Implement and validate the model (hypothetical model); in the broader range of model groups,

Describe the implementation of the model (advantages and obstacles),

Describe and analyze the impact of applying the model,

Preparing guide book about Internship (Prakerin) in the context of work-based learning (WBL),

Formulate internship (prakerin) in the context of work-based learning (WBL) to improve professional competence.

### Location and Subjects of Research

The location of the study was in the Faculty of Engineering, Universitas Negeri Semarang, with the subject students following internships and managers of industrial work practices. The research subjects were determined purposively, namely the Engineering Faculty ex IKIP who had a department/study program in the technical education field along with their partner institutions where students conducted internship. Thus, in this study, both in the framework of developing model design and model validation, involving the Engineering Faculty of ex IKIP, which has a technical education department/study program and its partner institutions.

### Data Collection Techniques

Data collection in this study is grouped in two parts, namely, preliminary studies and model development, and model validation. In the preliminary study, a questionnaire, observation, and documentation technique was selected, in addition to the literature review. In general, the three techniques (questionnaire, observation and documentation) are used simultaneously and complementary. At the development stage, the main step is limited testing on the model group, with the main data collection techniques being observation and questionnaires. In the model validation stage, the data collection technique used is an assessment of the impact of the application of the model developed towards increasing professional competence. The indicator used in this assessment is the increasing professional competence of Faculty of Engineering students.

### Instruments for Data Collection

Instruments for data collection developed in this study relate to data collection techniques conducted at each research stage, namely: (a) a questionnaire and checklist used to ask questions and observations at the stage of the preliminary study and development; (b) a list of questions and checklists, also assessing the impact of the results of the application of the model on the development of professional competencies. Before being used, these instruments have been carried out to prove content validation and prove reliability. The results showed that the instruments were proven to be valid and proven to be reliable.

### Data Analysis Techniques

Data analysis in this study is explained in three stages, namely the introduction and development stages, and the validation stage. In the preliminary study phase and development, findings or facts about the potential cooperation and components of the Internship are described in the form of data presentation (mean, median, mode, etc.), then analyzed (interpreted) qualitatively. With this approach, the analysis used in this stage is called qualitative descriptive. In the model validation stage, the analytical approach used is descriptive in the form of data presentation. Likewise, in the measure of the applicability of the model and the impact of the application of the model, it was analyzed descriptively and qualitatively.

### Research Systematics

Achievement of research objectives is described in systematic research that describes the period of time, research space, and output as follows: In the first year, identification and analysis of the implementation of industrial internship was conducted by students of the Faculty of Engineering of ex IKIP and describe, analyze existing models and draft a model design development. to find out the effectiveness and efficiency of the models that have been developed, presented in Table 1.

**Table 1. The models that have been developed**

Stage	Scope of Research	Achievement indicators
Preliminary and Development Studies	<ul style="list-style-type: none"> <li>- Identification and analysis of Prakerin education carried out by the Engineering Faculty of ex- IKIP students</li> <li>- Description and analysis of existing models</li> <li>- Drafting the design of the development model.</li> </ul>	<ul style="list-style-type: none"> <li>- Existing model of internship implementation;</li> <li>- Description and analysis of existing models;</li> <li>- Development model design</li> <li>- Scientific article (proof of article reception)</li> </ul>
<b>The final results of the study:</b>		
Obtained a model of internship (Prakerin) of Engineering Faculty of Ex- IKIP in Work-Based Learning Setting		

## RESULTS AND DISCUSSION

The research carried out in its implementation has been initiated from a preliminary study by looking for data with the subject of research sourced from engineering students participating in the internship as well as from the manager of the internship. This preliminary study begins with making instruments, taking data, and processing data to be presented, which are then ready for analysis. The research instrument can be seen in the appendix which consists of two instruments, namely for students participating in the internship and manager of internship. In obtaining the expected data, researchers conducted preliminary data collection at the Faculty of Engineering, Universitas Negeri Semarang (UNNES). More details are shown in Table 2.

**Table 2 Research Subjects and Locations**

No	Subjects	Location	Total
1.	Students of Intership (Prakerin)	Faculty of Engineering UNNES	50
2.	Prakerin Managers		10

### Description of Data and Analysis of Findings

Development of internship (prakerin) models from students of the Faculty of Engineering of Ex-IKIP techniques in the context of work-based learning develop professional competencies consists of 3 variables, namely attitude, readiness, and quality of learning in place of internship. The description of each variable will be explained as follows.

#### Attitude

Descriptive analysis attitude variable in the development of internship (Prakerin) Faculty of Engineering students of Ex-IKIP in the context of work-based learning has a score of 4 for Strongly Agree (SA), 3 for Agree (A), 2 Disagree (DA) and 1 for Strongly Disagree (SDA). So, the distribution table will be shown in Table 3.

**Table 3. Data distribution of prerelease students based on attitude**

No	Research Subject	Respond			
		SA	A	DA	SDA
1	Students participating in internship FT UNNES	30%	50%	20%	0%

Table 3 shows the subjects of the study had responses that were dominated by categories of agreeing as much as 50%, a very large set of 30%, and disagreeing 20%. This shows that students already understand how to behave in an Internship, which has a direct impact on students as participants in internships, but there are still 20% of students who say they do not agree. Basically, this can happen because the place where the students do an internship can form their attitude at work. So the choice of place of internship must go through the appropriate procedure in order that the understanding of the importance of attitude in work will be more striking. Anjum (2020) research shows that internship programs had a significant impact on the professional development of students, providing them with practical experience that enhances their work attitudes. Lam & Ching (2007) research shows that internship programs contribute to the development of work attitudes by providing students with real-world experience.

#### Readiness

Descriptive analysis of readiness variables in the development of internship (prakerin) models of faculty of engineering students of ex-IKIP technique in the context of work-based learning has a score of 4 for Always (A), 3 for Frequent (F), 2 for Rarely (R) and 1 for Never (N).

**Table 4. Distribution of student internship data based on the readiness**

No	Research Subject	Respond (%)			
		A	F	R	N
1	Students participating in internship FT UNNES	42.86%	57.14%	0%	0%

Table 4 shows the responses of students to see their readiness before following industry work practices. This readiness includes knowledge preparedness and competence. Seeing the table above shows that the subject of the study has a response consisting of statements with always categories as much as 42.86%, and often categories as much as 57.14%. This shows that the readiness aspects before the internship is needed so the

model in the implementation of the internship needs to pay attention to the readiness of the participants so that the achieved results will be in line with expectations. The results of the research above are in accordance with research from Kapareliotis et al. (2019) where students taking part in the internship program positively assessed the work readiness aspect. They knew what their employers expect from them in the workplace. They were able to apply the professional skills required by employers effectively in the workplace.

**Quality of learning at the place of internship**

Descriptive Analysis of the Quality of Learning variables in the Industrial Work place in the Development of Internship (Prakerin) Models of Faculty of Engineering students of Ex-Ikip in the Context of work-based learning has a score of 4 for Strongly Agree (SA), 3 for Agree (A), 2 Disagree (DA) and 1 for Strongly Disagree (SDA). So the distribution table will be shown in Table 5.

**Table 5. Distribution of student internship data based on the quality of learning in the internship**

No	Research Subject	Respond (%)			
		SA	A	DA	SDA
1	Students participating in internship FT UNNES	50%	50%	0%	0%

Table 5 shows the responses felt by students towards the quality of learning in the place of internship. The quality of learning felt by students based on statements on the instrument shows balanced results. Between the categories, strongly agree and agree, as much as 50%. These results indicate that the quality of learning obtained by students during internship provides a good impact for students so the category is not wrong if it shows something balanced for positive things (Baert et al., 2021; Miller et al., 2011).

**The concept of work-based learning related to internship (prakerin)**

descriptive analysis of the variable work-based learning concept related to prakerin in the development of industrial work practice model from the Faculty of Engineering of Ex-IKIP in the context of work-based learning has a score of 4 for Strongly Agree (SA), 3 for Agree (A), 2 Disagree (DA) and 1 for Strongly Disagree (SDA) So that the distribution table will be shown as table 6.

**Table 6. Responses of internship managers**

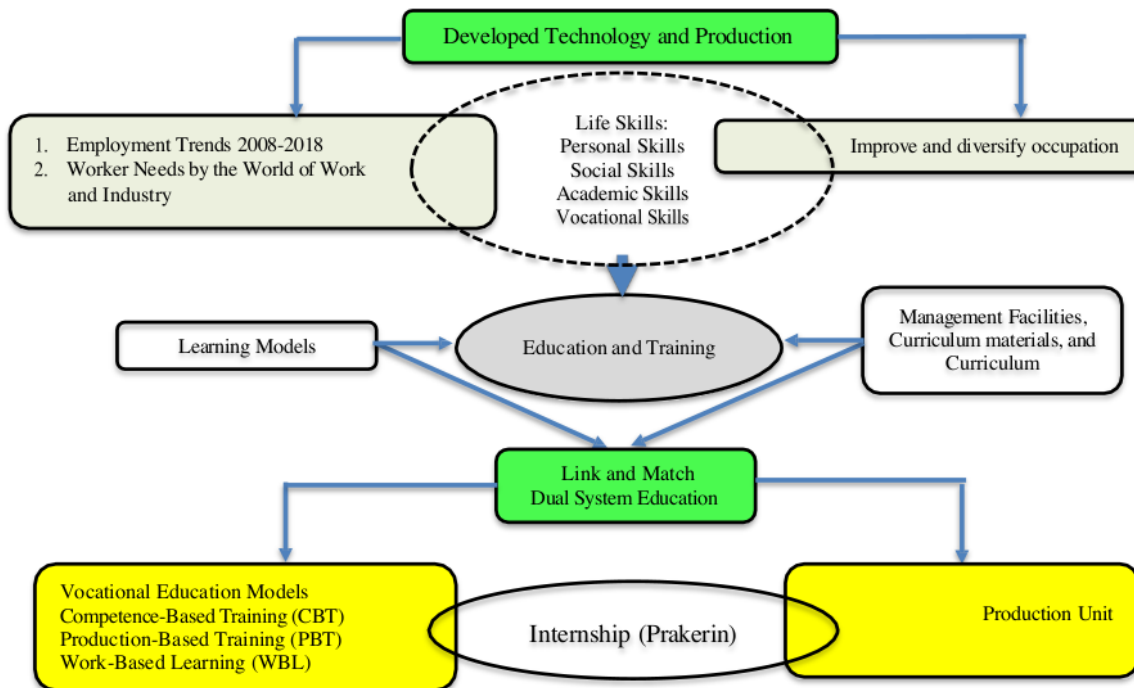
No	Research Subject	Respond			
		SA	A	DA	SDA
1	Managers of FT UNNES	40%	60%	0%	0%

Table 6 shows the responses of internship managers to view work-based learning concepts related to preconception. Based on the results of the instruments that have been filled in by the manager show the following results: The categories strongly agree as much as 40% and agree as much as 60%. This shows that the manager's understanding of the WBL learning concept is good, so researchers consider this to be something positive because the development of the model will be more easily accepted. This results are in line Siswanto (2012) research where the responses of managers managing internships with WBL were in the high category. They consider WBL acceptable in their training center environment.

In addition to using questionnaires with closed entries, instruments for manager industry work practices also use open fields so that managers can describe the actual conditions. The results obtained from open fields show that the management of Internships at the Faculty of Engineering, Universitas Negeri Semarang, does not have a standard model for implementing Internship programs as expressed by the head of the fieldwork practice group of the Faculty of Engineering, Universitas Negeri Semarang. This condition is actually not very good; where Internships should be able to help students develop themselves in accordance with their competence so the use of industrial work practice models is needed so that the initial goals of the Internship can be achieved.

**Summarizing the Conceptual Model**

The conceptual study formulation of the internship model on work-based learning to develop Professional Competence can be illustrated in Figure 2.



**Figure 2.** Work-based learning model for developing professional competencies

The development at the next stage after collecting preliminary data is by developing the Internship (Prakerin) Model of the students of Engineering Faculty of Ex-IKIP in the context of work-based learning, which relates to:

- Developing models through the formulation of internship and preparation of implementation tools;
- Model design validation through FGD;
- Improvement of the model, resulting in the design of the internship (Prakerin) model in the context of work-based learning for the Ex-IKIP Engineering students (hypothetical mode);
- Implementing and validating models (hypothetical models); in the broader range of model groups;
- Preparing a guidebook on Internship(Prakerin);
- Formulate internship (Prakerin) in the context of work-based learning (WBL) to improve professional competence.

## CONCLUSION

Based on the results of the research conducted in the first year, conclusions can be taken as follows: 1) Research conducted has reached the stage of obtaining preliminary data, which aims to identify and describe the internship model in the field to be able to know its advantages and disadvantages; 2) This preliminary researcher has also carried out a conceptual study of the internship (Prakerin) model in the context of work-based learning (WBL) so that conceptual models can be formulated; 3) Preliminary studies are conducted at the Faculty of Engineering, Universitas Negeri Semarang, which is for students who have implemented industrial work practice programs and managers of Internship programs; 4) The results of the analysis of the research subjects show mixed results from students seen from the attitudes, readiness, and quality of learning in the internship, so that this needs further analysis so that students are better prepared to prepare themselves to face and follow industrial work practice programs. In addition, open fields show that the management of Internships does not



have a standard model for implementing Internship programs, as expressed by the head of the fieldwork practice group, Faculty of Engineering, Universitas Negeri Semarang.

Based on the results of the research conducted in the first year, the following suggestions can be conveyed: 1) The findings of the preliminary study need to be more analyzed, so that it will produce existing models based on needs that the next can support the development in the second year; 2) It is necessary to coordinate with the manager of industry work practices so that the compatibility of the model developed can be in line with the programs that have been prepared by the manager, this can be done through focus group discussion (FGD); 3) Monitoring the agenda of the industry work practice program, so that research can be designed to be completed on time.

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