

# LEARNING GOALS ACHIEVEMENT OF A TEACHER IN PROFESSIONAL DEVELOPMENT

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## ABSTRACT

This study aimed to describe the achievement of teacher learning in cognitive, affective and psychomotor in conducting professional development. This study was categorized as a descriptive study. The respondents of this study were teachers and students in the Department of Electrical Engineering at a Vocational Secondary School in Bangka Belitung. Methods of data collection used questionnaires. The data were analyzed with descriptive analysis. The results of this study consisted of: (1) teachers' opinion, most teachers had worked very well in learning of cognitive, affective, and psychomotor, (2) students' opinion, several teachers had succeeded in cognitive learning, and managed very well on affective and psychomotor learning.

**Keywords:** affective, cognitive, professional development, psychomotor

## INTRODUCTION

Vocational High Schools are secondary level of formal education with an important role in preparing and developing human resources. One of the goals of vocational education is to prepare students become productive people to fill the jobs that are applicable to the selected competency skills. Teachers as the main actors in the learning process should play a strategic role to produce young generation who are ready to compete in fulfilling vacancies or creating jobs independently. In order to achieve this goal, the teachers are required to be able to adapt and keep up with the development in society (Sutrisno, 2016). In relation to this, teachers must always develop themselves and renew their competence. These efforts should be accompanied by improving teachers' welfare.

Improving an education institution related to learning process in vocational schools has become an obstacle for the students in every vocational program. The increasing number of vocational students' interest on industrial field becomes the concern for vocational education organizers. The students' interest on industrial field meets the vocational education vision which includes the preparation for employing in

a specific occupation that always requires educational requirements and also social competence (Weinrich, 1974) and thus the developers of vocational schools need to improve and prepare innovation in every aspect. One of the aspects that is necessary to be improved and innovated is the facilities used by the students, teachers, and operators. Moreover, learning process will run well if the facilities are adequate so that the learning purposes can be attained (Wahono, 2014). The correlation analysis shows that motivation, learning styles, teachers' leadership, and teaching intensity have a strong correlation to achieve learning outcomes (Sulistyarini, 2016). It suggests that the students' motivation and learning styles still need to be improved, while the teachers leadership and teaching intensity need to be maintained.

The effort to improve the welfare of teachers conducted by the government is the policy to classify teaching as a profession. The policy was established by the Act No. 14 Year 2005 about Teachers and Lecturers. The first section of this act states that teachers are professional educators with the primary task of educating, teaching, guiding, directing, training, assessing, and evaluating students on early childhood education, formal education, primary

education and secondary education. Furthermore section 10 of the act states that teachers in implementing the profession must have four competencies that consist of pedagogical competence, personal competence, social competence and professional competence. Section 20 of the act states that teachers have a duty to improve and develop academic qualifications and competences to follow the development of science, technology and arts (*Departemen Pendidikan dan Kebudayaan Nasional*, 2005).

Teacher professional development program is a strategy of the government to encourage teachers to develop professionalism. The program aims to facilitate the teachers to renew their competences thus teachers can adjust to the advancement of science and technology and can maintain their knowledge and skills. 70% of vocational teachers conduct professional development through participation in self-development programs (functional training, workshops, seminars), while 18.8% of them carry out scientific publications (modules, books and the like), and 16.0% of them create innovative works (Djarmiko & Hadi, 2015). Scientific publication written by teachers is still limited, it is caused by the low ability of teachers to write scientific papers (Hermawan, 2014). In addition, teachers still have difficulties in conducting action studies (Sianturi, 2013). Furthermore, teachers are not only responsible for improving the quality of learning outputs but also for team-work collaboration with other teachers to elevate the quality of learning outcomes (Djarmiko, 2016). It suggests the quality assurance as the key to achieve and to ensure the quality of teaching learning process and also the school's effectiveness demanded by the stakeholders.

The success of professional development activities undertaken by teachers is not measured by the number or volume of activities followed by teachers, but the success is measured based on the progress of learners in the learning (Guskey, 2000). Furthermore, Guskey reveals that although professional

development is not directly or specifically affect the improvement of education of students, but the quality professional development is important (Guskey, 2000). Professional development for teachers is a learning process carried as the main tasks of the teaching profession, not as the additional tasks therefore when teachers teach in classrooms, the teacher can measure its success in achieving learning goals in a professional development program undertaken.

In connection with the previous explanation, it is necessary to study the learning achievement in teachers' professional development, in order to obtain empirical evidence about the condition of teachers in classroom after conducting professional development. This study aimed to describe the achievement of teacher learning in cognitive, affective and psychomotor in conducting professional development.

Teachers have an important role in the education system. The education system should be able to anticipate and adapt to changes therefore the school should become a learner organization or a learner school. A learner school is a school that can move and organize each element of the school to observe any changes that occur within and outside the school. Efforts to develop a learner school should be started from the teachers in the school. Learner-teacher can be defined as a teacher who continually seeks to reflect any activity to constantly improve and develop themselves, especially in relation to the competencies required in their profession. It is known as the professional development.

Professional development as the whole process and activities designed to enhance the professional knowledge, skills and attitudes of teachers. Furthermore, Guskey (2000) explained that there are three characteristics of professional development, namely: (a) a deliberate process, (b) ongoing process, and (c) an orderly process. Continuing Professional Development (CPD) is a learning process and the development of individuals ability, where

each individual has the power to control the process. The process of reflection and actions is continuous (Megginson, 2003). CPD is a term used to describe all of the activities during the process of education in the teacher's career, and it is designed to improve a work quality. Teachers who are implementing CPD have the following characteristics (a) teachers as professionals should always look for new challenges and improve work performance on an ongoing basis, (b) teachers are responsible for identifying their own needs and how to meet these needs, (c) teacher always evaluate the process undertaken, in order to know the impacts resulted from these activities, (d) the development of self-performance becomes the main

tasks of the teaching profession, not on additional duties. During taking a career as teacher, every teacher is required to have a passion to make continuous improvement through a reflection about their professional skills. Teachers have full power of the process and full support from the school to realize the process. Sustainable improvement process should be focused on improving the learning process in the classroom. In addition, teachers are required to always think creatively to improve the quality of learning. Teachers' creativity can be in the form of a new teaching theory, assessments, action studies and discovery of innovative works. Teachers' professional development stages is illustrated in Figure 1

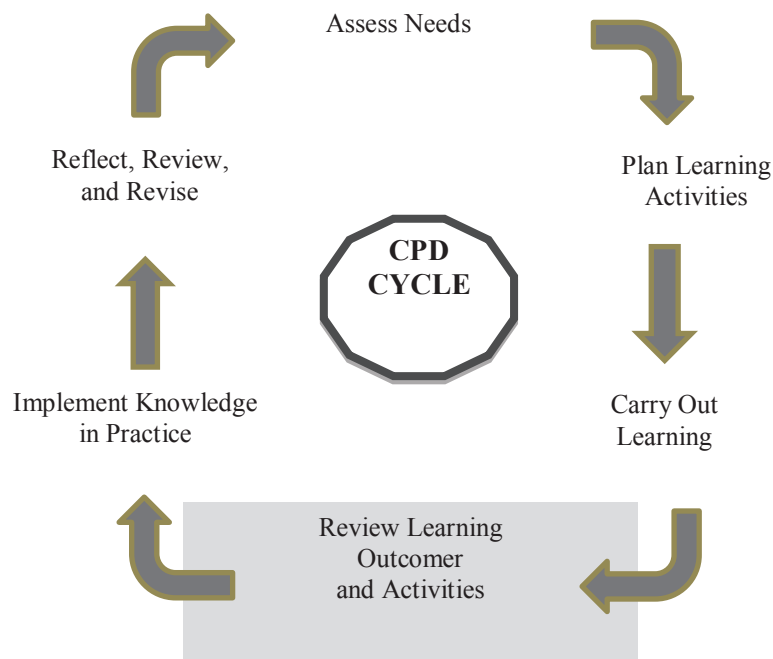


Figure 1. Teachers' Professional Development Process  
 (Source : <http://graduatephysioopportunities.weebly.com/cpd.html>)

Generally, professional development can be divided to self-development, scientific publications and the development of innovative works. Self-development can be conducted by in-house trainings, workshops, seminars, and discussions. Scientific publication includes three main activities, namely: (a) presentation at

a scientific forum, (b) scientific publications of study or innovative ideas in the field of formal education, and (c) publication of textbooks (*Kementerian Pendidikan Nasional*, 2010). Scientific publications may be written based on classroom action studies. In addition, teachers can also perform a wider publicity through

magazines, newspapers and the mass media in the form of popular scientific literature and scientific articles through scientific journals.

Improving the quality of learning undertaken by teachers, certainly not enough to have just done expressing ideas through scientific publications, but also teachers are required to be able to compile textbooks, modules or diktat learning, books in the field of education, the work of translation, and the teacher manual book. The work is the work of the results of innovation development, re-modification or new discoveries made by the teacher. This innovative work includes (a) the discovery of appropriate technology category of complex or simple; (b) the discovery or development of the creation of works of art or category of complex or simple; (c) the making or modifying the instrument lesson, teaching or lab; (d) the preparation of standards, guidelines, questions.

Learning is a series of activities that are systematically designed and implemented specific procedures for the achievement of learning goals set (Sutrisno, 2016). Meanwhile, adult learning (andragogy) is an ongoing process of learning activities conducted by the student or students who comprised of people who have grown up and teaching activities carried out by educators or mentors. Furjanic explained that there are five principles of adult learning, namely: (a) adults have learning objectives alone, (b) adults have a lot of experience, (c) adults like material that can be practiced in the workplace, (d) of adults feel attracted to solve problems that occur in the workplace, and (e) adults are more motivated by internal factors (Furjanic and Trotman, 2000).

Learning is defined as a change of attitude, improvement of knowledge and or skills as a result of the program. So if there is no change in the behavior of the participants, it means learning never happened (Guskey, 2000). There are three types of learning, i.e. cognitive learning, learning, affective and psychomotor learning. Cognitive learning calls

for remembering specific information, applying that information to the job at hand, and making decision based on that information. Affective learning involves attitudes the learner has about what is being learned and the work being done. Psychomotor learning involves the development of skills that require the learner to use his or her muscles, following procedure, learning techniques, and operating equipment, which become automatic after practice.

The purpose of learning in professional development include cognitive (cognitive), psychomotor (psychomotor), and affective (affective). Guskey (2000) expressed that the cognitive goals of a professional development experience relate to specific elements of content and pedagogic knowledge or cognitive purpose of professional development experience related to specific elements of knowledge content or subject matter and pedagogical (Guskey, 2000) The coverage of cognitive objectives includes participants' understanding of the subject they teach, theory and rational new ideas and innovations, the learning styles of students, awareness of the physical, emotional dam psychology.

The purpose of learning psychomotor is describe skills, practices, and behavior that participant are to acquire through a professional development experience (Guskey, 2000). It can also be said that the purpose of psychomotor related to what participants can do with what they have learned. Examples which teachers can encourage more learners engaged in discussions, ask more questions that arouse the curiosity of students, giving more feedback on the task of learners, or developing forms of authentic assessment. Psychomotor goals typically involve participants' ability to use the content in new and different context, make adaptations when necessary, and determine the effectiveness of implementation efforts (Guskey, 2000).

Affective goals are the attitude, beliefs, or dispositions that participants are develop as a result of a professional development experience (Guskey, 2000). Increased confidence in the

work of teachers when dealing with students with special needs, in collaboration with other teachers to create lesson plans, discipline, emphasizing the importance of obeying the rules that apply in school are examples of activities teachers as a result of affective learning.

The role of teachers in educational advancement of the process is important. Therefore, the duty of a teacher is not easy. Vocational education has specific characteristics that are different from other general education, vocational education is more priority to the development of the ability of learners to be able to work in a specific field, has the ability to adapt and look at job opportunities and to develop themselves. Associated with the competencies required of teachers, the government has implemented Core Competency Standards that must be held by teachers, namely: (a) pedagogical, (b) personal competence, (c) social competence, and (d) professional competence.

Pedagogical competence include (a) the ability of teachers to dominate characteristics of learners in the aspect of moral, physical, social, and spiritual, cultural, emotional, and intellectual; (b) acquisition of teachers to learn the theory and principles of learning that educates; (c) in accordance with the curriculum development of teaching subjects; (d) implementation of learning that educates; (e) utilization of information and communication technology to support teaching and learning process; (f) the provision of facilities and means to develop and actualize the potential of learners; (g) communicate effectively with students, empathetic and polite; (h) carrying out the process of assessment and evaluation of learning outcomes of students; (i) the use of assessment and evaluation results in an attempt teacher feedback on the learning process; (j) perform reflective action to improve the quality of learning

Professional competence of teachers should possess include: (a) the ability to master the material, structure, concept and mindset of

scientific support; (b) the ability to master standard and basic competencies; (c) the ability to develop learning materials; (d) professional development that is sustainable; and e) use of information technology to carry out self-development.

Professionalism is a state or an attitude that was developed by someone as part of the process of professional socialization, where he received a common standard shared by the professional group (Dharma et al, 2013). Messman professionalism split into three forms: (1) professional knowledge (2) professional in the act (professional performance), (3) professional development (Messman et al, 2010). Further Messman (2010) claimed a teacher included professionals in knowledge if: first, to have knowledge relating to his position in the specialized field (subjects) of teaching. A teacher must have knowledge relating to the facts, concepts, theories, and principles taught; second, metacognitive knowledge as a condition for setting its own; Third, having the knowledge as a condition to act and interact according workplace conditions.

Professional in deed describes the success in completing work tasks. The success of such actions depends on their own settings to achieve the goals and to plan and monitor every action. Characteristic of a good teacher in action can be showed the ability to solve problem, to improvise in decision-making, self directing and responsive to the situation around. Messman claimed that there are three main dimensions in a professional attitude in development: first, learning related to the duties and responsibilities in the workplace, including activities to update knowledge and basic appearance and develop competencies; second, look back on those experiences in order to plan future action with reflection; third, expand social relationship at school and in the community (Megginson, 2003).

The opinions of the above experts explain that the characteristics of professional teachers, namely (1) the professional teacher should be able to respond and react

appropriately to the changes in society. Therefore, teachers must be willing to keep learning, so that the knowledge and skills possessed according to current conditions, (2) the reflection of teachers is mainly performed on the learning process. Teachers must always look back on activities that have been done in the classroom, whether activities carried out have been able to attract learners to be actively involved in learning or not, or Whether the learning is done only to a accommodate the

learning styles of a small portion of students who take part in the learning. The question was as it should be able to answer critically by the teacher, so that the quality of learning can be improve, (3) professional teachers must actively cooperate with colleagues and education stakeholders. This cooperation is important for building communication, maintain and improve the competence of teachers. The frame of the study presented in Figure 2.

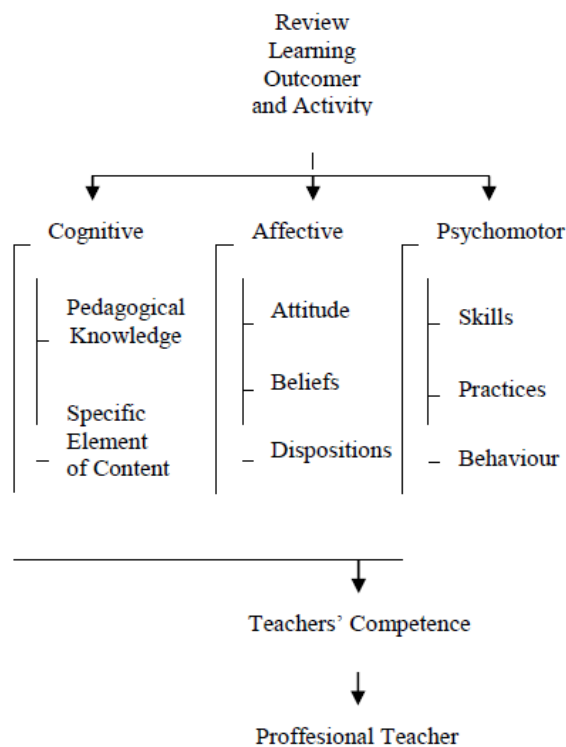


Figure 2. The Frame of the Study

## METHOD

This study was a descriptive study. This study aims to describe the achievement of the teacher in the learning objectives of cognitive, psychomotor and affective during the professional development activities. Respondent were teachers and students. Collection data use questionnaires. The questionnaires were developed in three sub-aspects namely cognitive, psychomotor and affective into nine points declaration. Alternative answers prepared on a scale of

likert with four alternative answers were Strongly Agree, Agree, Disagree and Strongly Disagree. Score to answer the statement were strongly agree, agree, disagree and strongly disagree are 4, 3, 2 and 1 respectively.

Validity test used a content validity and construct validity. Content validity test was conducted by giving several questions to expert opinion (expert judgment). Furthermore a construct validity test was conducted with trying the instruments to several respondents. The results of this process will be analyzed using a Pearson's product moment correlation.

The calculation results could be declared by valid if  $r_{xy}$  is larger than 3.0. The calculation had performed with computation. Result of construct validity testing instrument was declared valid of 8 items with Corrected Item-Total Correlation is in ranges 0.513 to 0.801, and invalid with 1 item. Reliability tests performed use Cronbach Alpha calculation rule. The instrument reliability test result declared 0.775 thus the instrument is reliable.

Furthermore, these questionnaires filled out by teachers and students with the number of 30 and 220 respectively. The students as respondents are selected proportional stratified random sampling method. Data analysis used quantitative descriptive analyse. Furthermore, the scores of the acquisition data categorized in four criteria namely very good, good, enough and less.

## RESULTS AND DISCUSSION

The test results of descriptive statistics for each sub aspect are in Table 1.

Table 1. Test Result Statistics

Respondents	Aspect	Mean	Standar Deviation
Teacher	Cognitive	9.36	1.56
	Affective	7.26	0.86
	Psychomotor	10.40	1.16
Student	Cognitive	9.21	1.47
	Affective	7.03	0.98
	Psychomotor	10.16	1.21

Statistic test result are categorized in the four criteria, and the results can be seen in Table 2

Table 2. Summary of Criterias

Respondents	Aspect	Number of Respondents (%)			
		Very Good	Good	Enough	Less
Teacher	Cognitive	83.3	16.7	-	-
	Affective	73.3	26.7	-	-
	Psychomotor	70.0	30.0	-	-
Students	Cognitive	42.3	45.0	10.5	2.3
	Affective	75.0	20.5	4.1	0.5
	Psychomotor	71.8	26.4	0.5	1.4

A cognitive achievement of learning objectives aimed to determine the behavior that emphasizes the intellectual aspects namely knowledge, understanding, and thinking skills of teachers that had been reached after teachers participated in professional development. With reference to the taxonomy formulated by Bloom, it can be identified some of the behavior of teachers that reflect its success in cognitive learning. Table 2 explains that most of the teachers have been successful in cognitive learning. This is reflected in the ability of teachers to manage learning by taking into account the characteristics of each learner. Lessons were conducted by teachers were not always intended for students with ability in average or higher. But teachers should be able to adapt with ability in under-average.

Constitution of Teachers and Lecturers declared that a teacher must have pedagogic competence. It was the ability of teachers to master characteristics of student in the aspect of moral, physical, social, and spiritual, cultural, emotional, and intellectual. But, the students declared that the teacher was still not optimal for recognizing and considering the characteristics of student in managed learning. There were a small proportion of teachers that was considered to manage learning attention less to the characteristic of student. Teacher should be understand the characteristics of student. It is important for teachers in order to provide optimal services to the student according to their interest, talent, ability and potential of each student so that they can develop optimally. Related to the application of method and model of learning, most teachers were still not optimal in preparing instructional media learning that give students facilities in learning. It is necessary to remember that each student has a variety of learning styles.

An affective domain was associated with feeling, value, appreciation and attitude. The evaluation of the affective aims to determine the extent to which teacher succeeded in learning affective professional development process. Based on the analysis that had been

done, it is known that most of the teachers have been successful in affective learning. It can be shown from the habit of teachers to implement Occupational Health and Safety (OHS) in the process of learning consistently. Teachers remind students to give a full attention to the OHS. The example is by conducting work using Personal Protective Equipment and Standard Operating Procedure (SOP) thus human and tools safety can be guaranteed. Nevertheless, the potential for workplace accidents in the workshop practices could happen. Teachers with full awareness explained the students about the good work procedures and safe, as well as supervise and guide learners during practice to minimize errors.

In addition, the learning success is also visible from the condition of the teachers in applying discipline. Teachers could be a facilitator to communicate the rules applied in schools, and ensure regulatory compliance achieved and executed well in the classroom. In this case, the disciplines character to be punctual in conducting the learning and teaching process, using the complete school attributes, collecting a practice report and others. Moreover, teachers not only conducting the teaching and learning process in the classroom, but the teachers also give a good performance in character that will give a good in students performances.

In order to give assesment for several cases, it is difference between teachers and students opinions. The Students opinion was that most teachers had implement the importance of Occupational Health and Safety (OHS) and discipline in learning. Teacher had been well in the implementation of OHS and a good performance. But, students also assess if still several teachers that were should be increase in attention to the importance of OHS implementation. Furthermore Table 2 explains that most teachers have been successful in the psychomotor learning. This is useful to increase teacher ability for managing a learning practices using strategies and methods accordance to the characteristics of basic competencies. It is also increase the competence to operate several

equipments in accordance to its function. The ability of teachers to use the equipment and make the necessary adaptation is one of the characteristics of success teacher in psychomotor learning. A similar opinion was also revealed by students. Professional development undertaken by teachers to keep knowledge and skills. This study also find that still a small fraction of teachers that were unsuccessful in learning.

## CONCLUSION

Professional development undertaken by teachers can be successful if there was a change of attitude, improvement of knowledge and skills enhancement. The results of this study showed that most teachers had work very well in the learning of cognitive, affective, and psychomotor. While based on the opinions of students, some teachers has been successfully in cognitive learning, and managed well on affective and psychomotor learning. Those results should be followed with teachers to implement the knowledge and skills acquired in continuous learning. Teachers should not be satisfied with existing conditions. Teachers should be looked back on the process of teaching and learning that had done, and revised for improvement. In addition, teachers also have to continue to observe and adapt to change and find new alternatives that might be done to change. So the teacher still should be individual learner sustained during his professional career underway. Thus, it will eventually materialize professional teachers who are able to print graduates who are competent and excel.

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