

# APPLYING DOMAIN PSYCHOMOTOR TEACHING METHODS IN VOCATIONAL COLLEGE

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**ABSTRACT--***The teaching method that used by teachers will be an impact on teaching and learning process. This study aims to discuss the practical teaching methods and practices dominant in the psychomotor domain of the practical teaching method adopted by the teacher in vocational college. The design of this study was oriented survey with quantitative approach and methods by observations of the teachers who teach at the workshop at a vocational college. Purposive sampling used to select in executing the method of observation. Number of samples selected in carrying out the method of observation is of four trainers who is chairman vocational workshops. The results showed that mean for the practical aspect of teaching methods of teaching design is 3.723, the implementation of teaching and evaluation of teaching is 3.542 and 3.504. For the implementation of teaching, teaching methods carried out showed the highest mean value for the recollection, the question, answer and presentation where the mean is about 4.06, 4.05 and 4.05. Then followed by the discussion and video screenings of 4.03 and 3.99. Overall, vocational college instructor more emphasis on teaching methods to the psychomotor domain observations, inventory, motion control, special movements, mechanisms and adjustment, but less emphasis on originality domain during the teaching and learning at the workshop. Psychomotor domain of the implementation by the instructors in teaching at workshops do not meet all seven standards psychomotor domains that has been set. The results of this study are expected to provide new ideas for teachers to apply all the skills in the psychomotor elements in the selection of appropriate teaching methods for teaching centered on practical workshops.*

**Keywords--** *Teaching Method, Psychomotor Domain, Skills, Teaching and Learning*

## I. INTRODUCTION

Transformation vocational school into vocational college is to improve the curriculum towards the needs of the country's needs (Malaysian Education Department, 2011). The year of 2020 required workers with qualifications in vocational streams to ten countries with the highest value of 0.8 (Malaysian Education Department, 2012). The Average Grades for the vocational stream before modular assessment was introduced in 2007, 2008 and 2009 were 5.66 and 5.49 and 5.11 respectively. Meanwhile, the Average Grades after the modular assessment was introduced in 2010 and 2011 were 4.38 and 4.45 respectively. There is a reduction of the values of Average Grade from 2007-

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2012 for vocational examinations, in which the latest achievements are better than the past achievements before modular assessment was presented. Lower value of Average Grade means better carrying out of the exam results (Ministry of Education, 2011).

The one of the success factors of School-based Assessment is the instructors' method of structuring the teaching and learning activities in the classroom from the aspects of planning, implementation and evaluation (Tan, 2010). Most academic assessment cases involved a high risk of irresponsibility (Robert, 2008). Most evaluators focused more on students' good achievement and ignored the planning of teaching, implementation and evaluation. This is because students only need to obtain a minimum score of 10 in the central examination score and 30% competency of the entire module to pass in the Malaysian Certificate of Education (Ministry of Education, 2009). The situation can be seen when the passing percentage of vocational stream increased significantly in 2009, 2010 and 2011, in which the School-based Assessment Module (SBAM) was implemented in these years.

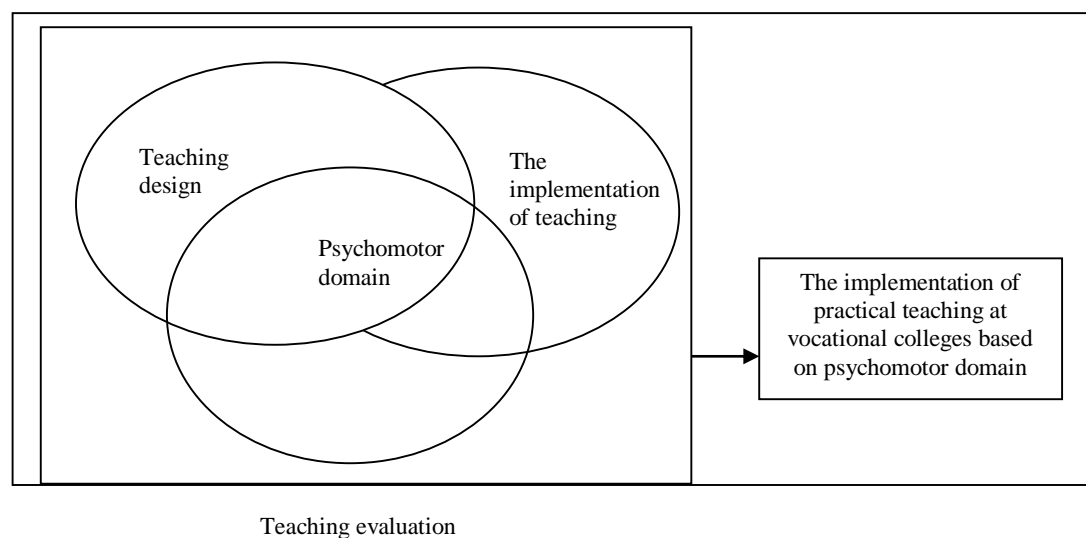
The teaching method that used by educators will be an impact on the learning process (Yunos et al., 2019). The teaching methods must be in accordance with the lessons and subject that will be taught (Nasution, 2004). Teaching skills should involve of all the aspects of domain in psychomotor (Harold, 2001). The teaching practice and problem solving in the evaluation of teaching requires teachers to understand carefully in determining the sense of skills (psychomotor) self before being disseminated to use other students (Mark, 2009). Knowledge in the field of teaching is important, but there are still many teachers who have not yet mastered the knowledge in their fields (Alyas, 2006; Madar, Sun & Hamid, 2019). Psychomotor aspect that should be emphasized in the teaching and learning process should include the seven levels of observation, inventory, motion control, mechanisms, special movement, settlement, and originality. Teaching and learning involve psychomotor aspects are coordinated by teachers oriented itself. Teachers should be implement all the elements of psychomotor in teaching methods.

## **II. CONCEPTUAL FRAMEWORK**

The teacher is an innovator which is introducing ideas, approaches, strategies, methods and teaching techniques appropriate for the practical activities workshop (Mok, 2000). Innovators are essential in improving the effectiveness of teaching and learning. The success of trainers depends on the treatment, teaching and leading teaching discipline treatment can be reviewed in terms of planning, executing and teaching. A treatment in terms of planning, implementation and valuation. Bloom's Taxonomy (1956) introduced only for the use of the classification for testing and evaluation. But now it is used for a greater purpose. There are three domains which introduced the cognitive (knowledge), affective (skills) and psychomotor (attitude) (Abdul Ghafar, 2011). Vocational subjects more emphasis on the psychomotor domain where it involves teaching a form of behavior. Psychomotor domain is applying the physical ability. Recognition of the importance of the physical ability was introduced by Simpson (1972).

In this study, a conceptual framework adapted by researchers with reference to the theory Psychomotor Sympson. Theory of psychomotor is associated with teaching methods that have been established in practical teaching methods in workshops. The teaching method is divided into three parts, namely planning, implementation and evaluation of teaching and learning. Psychomotor domain is applied in physical ability. Psychomotor domain consists of seven major classifications of observations, inventory, motion control, mechanisms, special movement,

adaptation and originality. The recognition of the importance of the physical capacity which was introduced by Dave (1970), Simpson (1972), Harrow (1972), Ennis (1987), Seels & Glasgow (1990), Romiszowski (1999), and Krathwohl (2002).



**Figure 3.1:** Framework concept study by Simpson Psychomotor Theory

### III. RESEARCH METHODOLOGY

The design of this study was oriented survey with quantitative approach and methods of observation by distribution of questionnaires and observations of the teachers who teach at the workshop at a vocational college. Respondent selection technique used by researchers in carrying out the distribution of the questionnaire is based on Simple random sampling, where is every sample with similar characteristics have probability to be selected as respondents (Louis, 2011). The number of trainers in the vocational stream is about 1328 (Malaysian Education Department, 2014). However, the study determined the sample size refers to Krejcie and Morgan (1970) is a total of 301 vocational trainers workshop. Purposive sampling used to select in executing the method of observation. Number of samples selected in carrying out the method of observation is of four trainers who is chairman vocational workshops. Samples taken with the aim of researchers considered a person or a sample has the necessary information in this entirety research. Sub-samples were determined using purposive and four workshop leaders were taken as respondents. A pilot study was conducted to measure reliability. Phase reliability in good and acceptable for the value of *Alpha Cronbach* exceed 0.61. Reliability of qualitative data collection methods of observation is seen during the observation process. Observation results were compared and it comes out with the same result.

### IV. RESEARCH RESULTS

Mean of practical teaching by trainers at the workshop include the planning of teaching is 3723 for the implementation and evaluation of teaching and learning is 3.542 and 3504. For the implementation of teaching, teaching methods carried out showed the highest mean value for the flashback, question and answer and

demonstration where the mean was 4:06, 4.05 and 4:05. Then followed by the discussion and video screenings of 4:03 and 3.99 mean value.

Psychomotor domain consists of observations, inventory, motion control, mechanisms, special movement, adaptation and originality. Teaching methods into planning of teaching, implementation and evaluation of teaching lessons.

### ***Planning of teaching***

The planning of teaching is entirely by trainers at the workshop. In practical teaching in vocational college, a trainer at the workshop apply only one of the seven elements of psychomotor which is a preparation element (P2). All of a practical trainers mastering teaching and learning subject before carrying out the sessions in the workshop. Teachers plan and prepare lesson plans in advance so that practical learning process went smoothly. Hand and machine tools checked before students enter into the workshop by all respondents, trainers in vocational colleges.

### ***Implementation of teaching***

Among the methods used by trainers in practical learning in the workshop is the flashback, lectures, group learning, demonstrations, model project, video screening, exercise, sheet notes, presentations, discussions and question and answer. However, the researchers only discuss the five teaching methods have the highest mean only which is a flashback, question and answer, demonstration, discussion and video screenings

### ***Flashback***

Flashback method of teaching carried out by the teaching staff more focused on the implementation of the observable domain (P1), uncontrolled movements (P3) and special movement (P5). The instructors include the necessary tools to carry out this practice and ask students to classify and differentiate the use of any tools. The practical session described (the Respondent, and Respondent four R1, R4). Instructors make the flashback technique to the students will be learning off while associated with the current situation prevailing in the environment in the workshop (respondent number two, R2). The students were also asked to list the things that were taught in class that day and make the connection between practical works was carried out with the manufacture of other special. These activities include the implementation of aspects of the psychomotor domain observation in the session teaching and learning (Respondent number three, R3).

Implementation psychomotor domain uncontrolled movements (P3) in the form of teaching methods recall also applies in the teaching and learning sessions in the workshop. The instructors always ensure that students are able to provide the workpiece according to specifications work properly without the help of teachers where teachers see the selection of works by students from afar. Instructors are constantly reminded students to reflect on material preparation procedures performed at last learning while students carry out the procedure for selecting the workpiece (Respondent number three, R3). The application of domain-specific movement (P5) is also valid in practical teaching and learning in vocational colleges. Instructors emphasize the differences of each of the criteria contained in the workshop work based on past experience, students undertake practical (the Respondent number one and Respondent number two R1, R2)

### ***Question and answer***

Question and answer method is the most preferred method of instructors in teaching and learning in practical workshops. In this method, the psychomotor domain applied by the trainers are mechanisms domain (P4) and originality (P7). Before starting the internship, teachers asked students about proper equipment maintenance procedures. Hence, not only shrinks teachers ensure that students are able to maintain equipment hands safely and properly in the course of practice without the supervision of a fully instructor after presentations and question and answer session conducted (Respondent number one, R1). Implementation of authenticity psychomotor domain (P7) is applied between the domain in question and answer method of teaching sessions. The instructors ask students to list the materials or other hand tools can also be used in practical same when faced with a shortage of hand tools in the workshops (Respondent number one, R1).

### ***Demonstration***

The mean value of the demonstration method adopted by the teaching staff is about 4:05. To carry out this method, applying the psychomotor domain applied by the trainers is an observed domain (P1), uncontrolled movements (P3), the mechanism (P4), a special mobility (P5), and adaptation (P6). The psychomotor domain is applied in a demonstration in the domain of observation methods (P1). This is shown when students are asked to demonstrate the practical methods that were taught in teaching and learning session while supervised by the instructors (Respondent number one, R1). Instructor conducts the students to pack and clean the garage after use.

Trainers previously shown the procedure to clean equipment and machinery in the workshop (Respondent number one, R1, respondent number two, R2, Respondent number three, R3, and the respondent number four, R4). Once completed the internship, teachers ask all team members demonstrate the practical re-performed (respondent number four, R4). Domain uncontrolled movements (P3) in the form of teaching demonstrations were also conducted where is the instructors showed the students on wrong and the right procedures to use a machine at the workshop (Respondent number one, R1, respondent number two, R2, Respondent number three, R3, and the respondent number four, R4). Psychomotor domain is the mechanism by which the fourth (P4). In applying this domain, teachers guide the students in groups to design work done during the practical sessions (respondent number one, R1). Instructor guide the students in designing signs, cut off the workpiece and cutting in a team work. The process is only given to students who do not understand during the practice teaching sessions (respondent number three, R3). To add competence of students, teachers show student first, then ask the students to open up and replace skilled project if it has a surplus of time in the course of practical (Respondent number four, R4). The fifth domain of specific movements (P5) is also applied in the form of demonstrations of teaching methods. During a demonstration by the instructors carried out, the instructor shows the use of a button on the machine so that the students are more focused on the machine and be able to remember the function of each button specifically and more cautious (Respondent number three, R3).

Domain adaptation (P6) was also among the domain applied by the trainers in the method of demonstration. The instructors show each style of art that can be applied during the implementation of practical work in the context of offering practical work (Respondent one, R1). Prior to the practical sessions, the instructor demonstrates a technique to install and test any workpiece correctly. Whereas after the practical session, the instructors asked the students gathered at each site after updating workshops. Teachers ask students to explain and demonstrate the

practical implementing procedures that have been implemented in accordance with the project done while referring to the actual project (Respondents number two, R2). After the project is completed, trainers demonstrate techniques to test each work with right measurement and assessment. If the workpiece has inaccurate, instructors show on how to upgrade the work of the students in groups. Students will be demand and guided by instructors to explain and demonstrate the practical implementing procedures from start to finish so that it can help add understanding of the student. Things to day adjustments to the application domain (respondent number three, R3).

### ***Discussion***

For carrying out the method of this discussion, psychomotor domain implementation that is applied by the instructors are observed (P1), inventories (P2), and adaptation (P6). Domain observation (P1) which is applied by the trainers in the discussion rules apply where it shrinks instructor asked the students will discuss the relationship between the practices that has been implemented with the creation of a special task to another. The students are then asked to share with other students who will be the result of discussions that have been agreed between the members of the group (the Respondent number one, R1). The students are free to ask questions of instructors will practice during the course of the workshop. Students and teachers discuss these issues together in the teaching and learning sessions (respondent number four, R4).

For the application domain setup (P2), respondent one (R1) to make sure he mastered a practice session before the start of the R & D laboratory concerned. Any problems arising will be discussed jointly by instructors who teach other hands-on workshops. During the practical information sessions held by teachers, students determined to fully focus on what will be delivered. The students will be asked to discuss the problems that exist in the event of the use of tools and machinery was an error. This is to avoid handling errors and machine tool leading to the occurrence of accidents in the workshop (Respondent number one, R1). Psychomotor domain adaptation (P6) was used by teachers in teaching methods in the form of discussions. After the P & P, teachers ask students to discuss and explain the procedure for implementing the practice that has been conducted in an orderly manner (Respondent number one, R1 and Respondents number four, R4).

### ***Video screening***

The fifth highest teaching methods of choice trainers workshop on vocational college is a video where it is the mean value of 3.99. For carrying out the method of this discussion, psychomotor domain implementation that is applied by the instructors is a domain controlled movement (P3), the mechanism (P4) and adaptation (P6). The teaching staff will visually indicate material specification methods provide work properly and the proper method of use of the machine. This is to give students and the memory of past hands-on learning (Respondents number two, R2).

For the implementation mechanism domain (P4), The instructor showing a visual representation of the practical manufacturing process that occurred in the industry while associating practical will be conducted in workshops at vocational colleges (Respondent number one, R1). Teachers shows students practical examples carried out using techniques and procedures right and wrong for students to guide the course of practical (respondent number two, R2). The respondent number one (R1) demonstrate to the students to test measurement and assessment properly. The respondents also indicate any variations of art and design that can be applied in developing the

practical. This clearly demonstrates by the respondent number one (R1) in implementing adjustment psychomotor domain by using a video screening method.

### ***Evaluation of teaching***

In the assessment of teaching practice in vocational college, a lecturer at the workshop to apply only three of the seven elements of psychomotor domain observation (P2), uncontrolled movements (P3) and adaptation (P6). Overall, all the teachers understand the practical things before carrying out the assessment of teaching practice sessions. Teachers do not carry out an assessment before the student makes practical training. Trainers' list and check every element of assessment before assessing its students (Respondent number one, R1, respondent number two, R2, Respondent number three, R3 and Respondent number four, R4). This is leading to the adoption of elements of the inventories psychomotor domain (P2).

Psychomotor domain uncontrolled movements (P3) for the evaluation of teaching occur when teachers are in the workshop during the practical sessions with the students. The students only assess the students who practice personal safety measures, because the machine correctly only. (Respondent number one, R1, respondent number two, R2, Respondent number three, R3 and Respondent number four, R4). For the implementation of the psychomotor domain adaptation (P6), trainers check and test each workpiece according to specification measurement after a practical session (respondent number three and respondent number four R3, R4). Teaching staff also provide comments and recommendations to the every variety and sessions conducted by trainers based on practical projects which were carried out (respondent number three, R3).

## **V. DISCUSSION AND CONCLUSIONS**

Researchers found that teachers in vocational colleges only apply psychomotor domain only in the planning of instructional supplies. This is in contrast to the opinion tabled by Barbara et al (2013) in which he stressed that every psychomotor domain must be included in the lesson plans. Researchers found the results of this research for the implementation of teaching is consistent with the findings Zulhelmi (2009). These things vary according to the needs and learning. Trainers seem to be bound by the requirements of the practical aspects of assessment and without the time to develop talent and creativity of the students. In addition, teachers also have a problem of lack of time in order to implement all the elements better psychomotor students. This is due to the limited use of the machine because the students have to share all of the equipment found in a workshop at a time R & D conducted.

Opinion issued by Simpson (1972) and Butler (1972) and Grace et al (2012) is not in line with the findings of theresearchers in this study. Researchers believe this is due to differences in teaching in vocational colleges is focused on the results of projects that have been carried out by the students. Teachers are more concerned with the achievement of students compared to assess all the elements necessary. Whereupon it was also supported by Robert (2008) where academic assessment have a high risk of not being responsible where teachers are more focused on the achievement of students. Overall, vocational college instructor more emphasis on teaching methods to the psychomotor domain observations, inventory, motion control, special movements, mechanisms and adjustment, but less emphasis on originality domain during the teaching and learning at the workshop. Psychomotor domain

of the implementation by the instructors in teaching at workshops do not meet all seven standards psychomotor domains that has been set.

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