Profile of Students Uninterested in Practicum Class at Faculty of Engineering Universitas Negeri Surabaya

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Abstract. This study aims to determine the characteristics of students who were uninterested in attending practicum classes. This study applied naturalistic qualitative research methods using participatory observation and interviews. The data validity was ensured by triangulation, detailed description, length of observation time, as well as details and thorough observation. The data were analyzed using domain analysis and followed by conducting taxonomic, component, and thematic analyses. The results of the study indicate that faineant students show a negative behavior while attending laboratory practicums. They have a lack of motivation, effective interaction, and attention. The cognitive abilities vary from low to high. Other causes on how the aspects of the study were low were found as well, therefore improving those aspects allows students to raise their interest in practicum classes. The impact is to create well-skilled vocational teachers in conducting practicum classes in vocational schools and to make graduates better-prepared for the workforce.

1. Introduction
Indonesia has actively improved the quality and quantity of vocational education. In Indonesia, vocational education is an education system aiming to improve students' ability to enter the workforce (Murtin, F., 2013. 1056, 0_1). One of the differences between vocational education and general education is the final goal of graduates who are prepared to enter the workforce. It has been considered that vocational education is the development of on-the-job training and apprenticeship.

Vocational Senior High School (Vocational School) is a vocational education institution having characteristics as preparing the students for employment (Hoachlander, G., Sikora, A. C., & Horn, L., 2003). According to the purposes, a curriculum designed is in both theory and practice. To support the curriculum, teachers who master the theory and practice are needed. In order to achieve the target, those teachers should be prepared for their education in the university.
Faculty of Engineering at Universitas Negeri Surabaya (FT-Unesa) is an educational institute that produces vocational school teachers (Levine, A. 2006). The demands imposed on this faculty are to equip students with adequate theoretical and practical skills. Hence, the Faculty of Engineering has attempted to complete its practicum laboratory with equipment needed in order to assist students in their study.

Learning outcomes are influenced by several factors such as physiology, psychological factors, learning environment and instructional system (Keller, J. M. 2009). Psychological factors include talent or intelligence, motivation, attention, and thinking. Learning environment factors include learning environment in and outside the campus. While the instructional system factors include curriculum, learning materials, and learning methods. If these factors support the learning process, students will be more interested and enthusiastic.

Given the importance of practicum skills of prospective vocational school teachers, the Faculty of Engineering students become interested in objects to be examined. During the observation, students, who actively attend the class as well as those who passively attend the class, are found. A naturalistic study was conducted due to a prior observation which found that there were students who were uninterested in attending the class.

The paradigm that must be considered in conducting the naturalistic or qualitative study is the nature of reality, the relationship of informants and observers, the possibility of generalization, the possibility of cause and effect, and the role of value. (Sarantakos, S. 2012) The essence of reality is double, molded and holistic due to the possibility of parents and peers having another opinion about the inactivity of practicum classes. Each student owns a complicated reason for their inactivity and the related variables are complicated enough affecting students’ interest in attending practicum class. The interaction between observers and objects (students, lecturers or instructors) are related each other. The study focused on the profile of students who were inactive attending practicum class at Department of Electronics, Faculty of Engineering, Universitas Negeri Surabaya, hence the possibility of generalization applied to the same context, time and condition.

Achievement in certain skill is able to affect that of other skills as well. Lecturers’ ability to perform practicum class is affected by student skills, attention, background, interests, talents, and etc. (Scharmer, C. O., & Senge, P. M. 2009). The wholeness is a sharpening state that is difficult to distinguish between cause and effect. The research problem was selected according to the researcher value. As the study was particularly related to value, qualitative naturalistic research was suitably selected as a research approach.

This study limits to the profile of students who are inactive or uninterested attending practicum class. The profiles include the interaction between lecturers and instructors, attitudes, motivations, attention, and cognitive knowledge of students. Therefore, the study sought to reveal the students' profiles especially on how their interaction, attitude, motivation, attention, and cognitive knowledge. From the results, lecturers and instructors get the feedback on understanding fainent students in practicum class, whether the inactivity was caused by students' characteristics or by their lack of interest. Thus, changes can be induced by improving aspects of practicum class to gain students' interests in practicum activities which in turn enhance the prospective teachers with high skills and knowledge.

2. Related literature

Vocational education aims to graduate students who meet the demands of work, expand the employment possibility, and motivate students in various forms of learning (Tynjälä, P., 2008, 3.2, 130-154.) In addition to its general educational goals, vocational education has also special purpose, that is providing students with knowledge and skills and simultaneously produce skilled workers meeting the needs of the community.

Compared to general education, vocational education oriented to the "work". Orienting to the work, Vocational High School as a vocational education institution has to have the same orientation.
Therefore Vocational school teachers should have knowledge and skills that can be obtained when they study in university while taking both theoretical and practical classes.

Learning is strongly influenced by the environmental system which influence each other, such as: learning objectives, teaching materials, teachers and students who have certain role in social relationships, as well as facilities and infrastructure (Keramati, A., Afshari-Mofrad, M., & Kamrani, A., 2011. 57.3, 1919-1929 ). Another opinion stated that factors affecting learning process are physiology, psychology, learning environments, and instruction (Siemens, G. (2014) Physiological factors include hearing, sight, other physical fitness (such as no malnutrition and etc.). This factor is possibly selected in university entrance exams for example by interview.

Psychological factors include intelligence or talent, motivation, attention, and thinking. Motivation is an internal power that encourages one to achieve goals. There are two types of motivation, an internal motivation which grows inside one's mind, and external motivation that arises from external stimuli (Barto, AG 2013,17-47). However, the most important motivation for educational psychology is an achievement (Ryan, RM, & Deci, EL 2000 25.1, 54-67).

With achievement as a motivation, one tends to spend all resources with success or failure as the only thought (Covington, M. V. (2000) 51.1, 171-200). A highly motivated person is likely to be successful, in contrast, one who is less motivated more likely fail. It means students with high motivation in practicum class are more serious in class performance and it leads to their class achievement.

Attention can be interpreted as concentration done consciously to the object or learning materials. The attention can be in the form of deliberate, spontaneous, intensive, central, and dispersed (Sklenicka, P., et al., 2009 129.4, 465-473). Deliberate attention is normally programmed or planned, spontaneous attention arises unexpectedly and usually lasts longer and can be more intensive than intentional attention.

Intensive attention normally emerges involving needs, passions, and interests (Halpern, J. 2001). Learning activities with intensive attention become more effective and efficient leading to higher achievement. Central attention occurs when the observed object demands precision which cannot be coupled with other activities (Wilson, M. 2002., 9.4, 625-636). Dispersed attention is needed when there are a number of objects required to be done simultaneously in line with the demands (Allen, D., 2015).

Thinking is a mental activity in the form of drawing ideas based on existing knowledge by considering cause and effect relationship (Arbnor, I., & Bjerke, B., 2008). According to thinking analysis, the thinking process consists of authenticity, criticism, and acceptance or rejection of the hypotheses. In non-symbolic problem solving, suggestions and criticisms of hypotheses are done together. If the problem solving is symbolic (reasoning), the hypotheses are different from the criticism. Suggestions are always denoted, whereas criticism can be represented (Langer, S. K. 2009). Suggestions and criticisms are symbolized by closed responses, such as sensations, fantasies, languages or small movements. In conclusion, thinking does not only employ brain but also the whole body.

Learning environment factors are from inside and outside campus including physical, social, and natural environments. These environments will impact learning outcomes (Dabbagh, N., & Kitsantas, A. 2012., 15.1, 3-8.). Positive learning environment enables students to improve learning outcomes, while negative learning environment hinders the learning process. Learning system includes curriculum, learning materials, and learning methods. The curriculum contributes to the learning strategies selection (Biggs, J. B. 2011). Therefore, the course position and role can be seen in the competence formation. Similarly, teaching materials and presentation methods are closely related to the success of learning process in an educational institution.
3. Research Method
This study was qualitative naturalistic approach and was conducted at the Department of Electrical Engineering workshop in Faculty of Engineering, Universitas Negeri Surabaya. Subjects studied were undergraduate students of Electrical Engineering Education Study Program.

Prior to data collection, the observation had been performed since the practicum class was started in order to make students unaware of being observed. After 3 meetings of practicum class, at the fourth meeting, data was collected by the observer because students were not anxious about the observers’ presence in which their responses were natural and genuine it was due to their assumption that observer was considered as teaching partner of the lecturer (Kisiel, J., 2005. 89.6), 936-955). Data were collected using participatory observation and interview by recording and noting all important situations happening during the practicum class, later when the class was over, data were transcribed and added with comments or responses of the observer (Rudestam, K. E., & Newton, R. R. 2014).

Data were analyzed directly after the recording was completed in order to minimize the shortcomings and would there be lack of data, later observation and interview were conducted to fill all the lack of data. Therefore, the analysis process conducted was analysis – observation – analysis – observation and so forth.

Respectively, analyses conducted were domain analysis to determine terms, references, as well as the semantic relationship. The taxonomic analysis was to categorize cultural patterns as well as similar semantics. The component analysis was to define culture categories (Onwuegbuzie, A. J., Leech, N. L., & Collins, K. M. 2012, 17.28, 1). Thematic analysis to determine the relationship between terms and how the domains were related to each other according to the whole cultural point of view. The analysis procedures were drawn as in Figure 1.

![Data Analysis Diagram](image)

**Figure 1. Data Analysis Diagram**

To validate the data, lengthening observation period, triangulation method, observation persistence, member checking, and detailed description were carried out.
4. Results and Discussion

The data obtained were transcribed into notes which described observation and interview results as well as comments or responses of the observer. According to the notes, a number of domains were concluded and five of them were selected to be analyzed, namely: interaction, cognitive knowledge, student attitudes, motivation, and attention. Those five domains, using taxonomic analysis, were organized as seen in Figure 2. Figure 2 shows domain terms as action, type, period/time, whom, reason, etc. The cognitive domain was only described by its score or value. The other three were described in similar ways, as to its action, time/period, whom, reason, and so forth.

| No | Terms                        | Action | Types | Period | Whom | Reason | Others | Scores |
|----|------------------------------|--------|-------|--------|------|--------|--------|--------|
| 1  | Interaction                  | ✓      | ✓     | ✓      | ✓    | ✓      | ✓      | ✓      |
| 2  | Cognitive knowledge          | ✓      | ✓     | ✓      | ✓    | ✓      | ✓      | ✓      |
| 3  | Students’ behavior           | ✓      | ✓     | ✓      | ✓    | ✓      | ✓      | ✓      |
| 4  | Motivation                   | ✓      | ✓     | ✓      | ✓    | ✓      | ✓      | ✓      |
| 5  | Attention/focus              | ✓      | ✓     | ✓      | ✓    | ✓      | ✓      | ✓      |

**Figure 2.** Summary of taxonomic and component analysis

The interaction in students who were inactive in practicum class was formed in one way communication (from lecturer to students) and it was not guaranteed to be well-accepted by the students. This condition showed how students listened to the lecture passively, carried out the task given passively, and had no intention to note the lesson (only copied from their peers). The reason was a number of students who attended the class, those students tended to talk and tease other classmates. Reports were not immediately given feedback.

Students who were inactive had different cognitive abilities, starting from low to high. Those with low cognitive were sluggish and uninterested to practice due to their incapability to perform in practicum class. Meanwhile, students with high cognitive ability tended to be ignorance and uninterested in practicing due to other causes as not because of their incapability performing in the practicum class.

The attitude of faineant students of practicum activity was very low. It was seen from their indifferent performance, bored face, as well as belittling the class. In addition to above reasons, many activities, long period of lecturing time before practicum class, as well as no assessment given for practicum class were other reasons causing students to be inactive in practicum class.

Intrinsic/internal motivation to attend practicum class at 14.00 especially for faineant students were quite low, seen by their late presences, joking or chatting during class, and only observing their classmates. The low motivation of faineant student was influenced by monotonous feedback and methods, lack of allowance, family's problems, and love-lives.

Low attention from students who were inactive at practicum class was showed by how they disregarded lecturer tasks and instructions, ignored the class, did nothing during the class and only copied from peers' notes, as well as did not cooperate with others or showed less cooperation. This low concern was due to no prior information of the class, boring as it was stated as textbook or theory, no discrepancy or challenge, and undetermined assessment.
In conclusion, students who were inactive in practicum class had low effective interaction, showed negative attitude to the practicum activities, had the quite low motivation, showed low attention on practicum activities, as well as had varied cognitive abilities (from low to high).

The study discovered that inactive students had low effective interactions. The effective interaction has a significant role on the effectiveness of the practicum, the more effective the interactions are, the more effective the practicum will be (Grol, R., & Grimshaw, J., 2003. 362.9391, 1225-1230). Involved parties in practicum class can communicate with each other to facilitate practicum activities. Therefore, the lecturer or the practicum instructor should be able to increase the effective interaction, especially between instructors and students, among students, students and laborants.

The emergence of the characteristics of inactive students should be discovered as soon as possible. When it is discovered, communicating with related students will intensively facilitate practicum activity. Hence, the inactive student should be given special attention and possibly to be achieved in a small group. Normally, one lecture should guide approximately 12-15 students in one class (Engstrom, C. M. 2008., 115, 5-19.), so supervising will be less difficult.

Negative attitudes of students to practicum class make students disinterested in practicum activities (Di Martino, P., & Zan, R., 2010. 13.1, 27-48). The negative attitude causes them avoid attending practicum class. In this case, laboratory managers and practicum instructors should be able to create a positive attitude of students by changing their negative attitude into a positive one.

Theory of change of attitudes, such as Contrasty Change Theory - Assimilation developed by Sherif and Hollands is possibly applied. This theory stated that the student's internal anchor is possibly changed by providing external anchors (Coetze, M., & Schreuder, D., 2008., 32.2, 45-65). If internal and external anchors are mutually aligned or mutually reinforced, those will be assimilated; whereas if those are in opposite, external anchors will minimize internal anchors close to the external anchors; this theory is called as contrast theory (Harrison, S. H., & Corley, K. G., 2011, 22.2, 391-412.).

Therefore students who have negative attitudes to practicum activities (= internal ankle) should be given external anchors, in the form of clues, explanations, or appeals about the importance of practicum class. When students are ensured, the negative attitude will be reduced or possibly disappeared and replaced by a positive attitude.

Inactive students with low motivation to practice possibly cause-related students less likely to succeed in the practicum class (Roberts, S. 2011, 35.2, 183-199). If the internal motivation (intrinsic motivation) of the student is low, the practicum instructor is required to motivate them (extrinsic/external motivation). Extrinsic motivation is generated by eliminating the causes of low motivation. Practicum managers can provide encouragement, especially encouragement-related activities to eliminate the cause of lazy students doing a practicum.

Another finding was that students who were inactive had low attention to practicum activities. Attention was also very important because without attention one was less interested in the related object. Therefore, students with no attention to practicum activities were definitely not interested in practicum class (Feisel, L. D., & Rosa, A. J. 2005., 94.1, 121-130). Due to this condition, lecturers or instructors should be able to gain students' attention to practicum activities. Several ways possibly done by lecturers to gain students' attention were by applying other practicum methods, proposing challenging activities, as well as considering students needs.

The cognitive ability of inactive students in practicum class ranged from low to high. Students who were in low or high cognitive possibly became inactive during the class. Thus, the cognitive abilities of students could not be used to determine the characteristics of inactive students.

The causes of inactive students in practicum class included the number of students attending class, less feedback, limited time, no worksheet, no assessment assumed, the number of other tasks given, monotonous method, socioeconomic crisis, students' love-life, boring activities, and no challenges. By eliminating those causes, students were expected to become active during practicum class. These students who had better teaching practicum skills and were ready to deliver their knowledge when becoming vocational school teachers.
If students who will be vocational school teachers after graduate are inactive at their practicum class, university's goal in producing skillful vocational school teachers is not achieved. Accordingly, practicum lecturers and instructors should give more attention to inactive students to eliminate the symptoms. Those symptoms of inactive students were: absence either stringing or reading meters, listening to instruction passively, chatting and joking to others, strolling in the class, underestimating the class, coming late, showing indifferent and ignorant look during practicum activities, taking note from peers, and working halfway. There are several ways that could be applied to cut the symptoms of inactivity, such as by providing reinforcement, creating effective interaction, and providing feedback.

5. Conclusion
Inactive students had a negative attitude towards the lab activities, low motivation, low effective interaction, and low attention to practicum activities. His cognitive abilities varied from low to high. By improving the causes of the aspects studied, students will possibly be active in their practicum class. Finally, it leads to a condition where vocational school teachers are more skillful in helping students to be more prepared for work.

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