Contribution of teacher’s teaching skills and students’ intrapersonal intelligence toward metacognitive awareness of students in state vocational school in Blitar

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Abstract. Vocational High School graduates who can study independently will become lifelong learners who are responsive to change so they can compete in the workforce of the revolutionary era 4.0. But the learning process at Vocational High School is still not paying attention to the development of high-level thinking skills of students. This is in line with the opinion of Mukhadis that the implementation of learning in the field of technology is still less encouraging which has an impact on the lack of development of individual abilities to develop high-level thinking skills, namely metacognition. Metacognitive awareness of Vocational students is still not suspected because of several aspects, that is internal and external aspects. Internal aspects are factors that influence students from themselves, one of them is intrapersonal intelligence. Then the external aspect is a factor that influences from outside the student's teaching skills. Given the importance of this metacognitive awareness, the authors conducted a study on the contribution of teacher teaching skills, intrapersonal intelligence to the metacognitive awareness of vocational students in computer network engineering study program in Blitar City. This study aims to determine how much the contribution of teacher teaching skills and intrapersonal intelligence of students to the metacognitive awareness of vocational students in computer engineering and network expertise packages in Blitar City. The type and analysis of data in this study are included in quantitative research. The number of samples used was 57 students in class X. Data collection techniques for variable teaching skills, intrapersonal intelligence and metacognitive awareness using questionnaires. Data analysis includes description and multiple regression. The results show as follows that, there is no significant contribution to partial teaching skills to the metacognitive consciousness; there is a significant contribution to the contribution of students' intrapersonal intelligence partially towards the students' metacognitive awareness of 44.22% and there is also a significant contributions to teacher teaching skills and intrapersonal intelligence of students to the students' metacognitive awareness of 52.8%.

Keyword: teaching skills, intrapersonal intelligence, metacognitive awareness, vocational high school.

1. Introduction
Problems in the field showed that graduates of the vocational high school (VHS) is still less encouraging in terms of obtaining a job. According to the BPS [1] VHS graduates many be open unemployment, i.e. in the year 2014 reach 813,776 soul or 11.24 percent of the total number of open unemployment in Indonesia namely 7.24 million. In 2015, the total number of open unemployment increased by 300
thousand inhabitants become 7.45 million inhabitants with the most penggangguran dominated by VHS grads of 9.05 percent.

According to the lecturer the University of North Sumatra, Siddik through Kompasiana [2] said that the large number of unemployed could not be released from the lack of absorption of the world of work and lack of competence of labour candidates. Workforce growth is not as fast as the number of Labor candidate brings up more day gap the wider. Likewise, the low competence of prospective workforce makes a lot of graduates of educational institutions are not able to be absorbed and meets the qualifications needed the business world and the world of work.

Mastery of the competencies expertise of a good computer network engineering study program is inseparable from the attainment of competencies at the base of a mature program. So with the achievement of basic competencies computer network engineering study program a good package and then the package of skills competence computer network engineering study program mastery will be good anyway. Computer assembly subject is one that is included in basic subject at computer network engineering study program. Furthermore, computer assembly subjects support computer technician work that is needed by the business / industry. Mastery of the basic competencies of the computer network engineering study program is still lacking due to several aspects, namely internal and external aspects. Internal aspects were the factor that affects the student's own self from one that is intelligence intrapersonal. Then the external aspect is a factor that influences student from outside teaching skills of teachers.

The reason the selection of population studies at VHS 1 and 2 cities of Blitar namely VHS which was believed to be a professional certification institution and have an A accreditation. Hardika [3] found that style of teaching educators now tend to be passive with viewing the PowerPoint reduces the immediacy and intimacy of the relationship of learners with educators. This shows the existence of gaps in teaching skills that educators can earn graduate students of VHS responsive with the world of work and teaching skills of educators at this time. Compulsory teaching skills possessed by educators so that goals and learning outcomes can be achieved as well as the learning process becomes effective [5]. On the process of learning in the VHS, the modalities of learners such as talents, interests and different intelligence less attention in planning for teacher learning. Reflection capability is very useful not only for pebelajar but also a worker can improve skills and Metacognition is key in lifelong learning (long-life learning). The ability of this reflection is part of intelligence sometimes intrapersonal.

VHS graduates can study independently then it would be a lifelong pebelajar responsive to changes so that it can compete in the world of work. But the process of learning in the VHS is still less attentive to the development of higher-order thinking abilities of students. This is in line with the opinion of the Mukhadis [5] that the implementation of learning in technology still less uplifting impact less development of the ability of the individual to develop the ability to think high level i.e. metacognition. In entering the era of revolution of the 4.0 industry demanded VHS students to be more skilled in using technology so that efficiency should also be applied then the ability to evaluate themselves, the ability of high-level thinking is important to be planted for VHS students.

2. Literature review

2.1. Teaching Skills

Teaching skills must be possessed by educators so that the learning objectives and results can be achieved and the learning process becomes effective [5]. Djamarah [6] explains that teaching skills are absolutely necessary for teachers. According to Usman [7] teaching skills are a series of behavioral patterns that are displayed by the teacher in learning activities. According to Sutopo [8] teaching skills and strategies are divided into three components, namely (1) planning; (2) the implementation of learning consisting of material delivery, technology utilization, group and individual distribution, strengthening learning, effectiveness of learning and the use of multi-strategies; and (3) assessment that is a strategy for assessing learning.
2.2. Intrapersonal intelligence
Intrapersonal intelligence is the ability to understand oneself and act on that understanding which includes awareness of moods, intentions, motivations, temperaments, desires, self-discipline and self-respecting abilities [9]. Bandarabbasi [10] describes the meaning of intrapersonal intelligence as follows "Intrapersonal Intelligence: it refers to ability to have an accurate picture of oneself and being aware of one's inner mood, intentions, temperaments and desires". Jasmine [11] explains that there are seven types of intelligence including intelligence in terms of the following: (1) linguistic; (2) mathematical logic; (3) spatial; (4) musicals; (5) bodily – kinesthetic; (6) interpersonal; (6) intrapersonal. Intrapersonal intelligence is intelligence that is reflected in a deep awareness of inner feelings. Based on some of the opinions above, it can be concluded that intrapersonal intelligence is the ability to recognize one's own emotions related to one's attitude towards something to achieve goals.

2.3. Metacognitive
Metacognitive is the ability in which an individual stand outside his head and tries to understand the way he thinks or understands the cognitive processes he does by involving the components of planning (self-planning), control (self-monitoring), and evaluation (self-evaluation) [12]. Furthermore Trianto [13] defines that metacognitive is an ability that relates to students' knowledge of their own thinking and their ability to use certain learning strategies appropriately. Metacognitive research is divided into two types, namely metacognitive awareness [14][15] and metacognitive skills [15][16][17]. The metacognitive awareness score is measured by the metacognitive awareness inventory instrument [18]. The Metacognitive Awareness Inventory (MAI) was developed by Schraw and Dennison in 1994 to assess metacognitive knowledge and metacognitive regulation.

Based on some of the opinions above, it can be concluded that metacognitive is a person's ability to manage himself in order to be able to carry out cognitive processes that involve several stages including planning, monitoring, controlling and evaluating to achieve the expected goals.

3. Methodology
The design of this study uses survey research methods in the analytical survey category with a quantitative approach.

3.1. Population and Samples
The population in this study were students of class X VHS 2018/2019 in Blitar City Vocational High School who had the same criteria, namely having computer network engineering study program and having accreditation A.

3.2. Research Instrument
The instrument used in this study was a questionnaire. Questionnaires were used to reveal teaching skills (24 items), intrapersonal intelligence (24 items), and student metacognitive awareness (27 items).

3.3. Data Collection Techniques:
Data were collected through questionnaires on all samples that had been determined in VHS 1 and 2 of Blitar City at class X computer network engineering study program. Questionnaires were used to collect data on the teaching skills of productive teachers in computer assembly subjects, student intrapersonal intelligence and metacognitive awareness of VHS students.

3.4. Data Analysis:
The data analysis technique used in this study is a description and multiple regression.

4. Results and Discussion
The results of this study are presented in the form of tables starting from Table 1. to Table 5. and their explanation.
Table 1. Validity & Reliability

| Variable                        | Validity     | Reliability |
|---------------------------------|--------------|-------------|
| Teaching Skills                 | 0.000 s.d 0.032 | 0.746       |
| Intrapersonal Intelligence      | 0.000 s.d 0.011 | 0.751       |
| Metacognitive Awareness         | 0.000 s.d 0.035 | 0.744       |

Table 1. shown that the validity of survey data values of the teaching skills, intrapersonal intelligence and metacognitive awareness are 0.000 s.d 0.032, 0.000 s.d 0.011, and 0.000 s.d 0.035 respectively. That’s means all survey data values are valid because all variables meet the limit value above 0 and is not a minus number. Table 1. also shown that reability of survey data values of the teaching skills, intrapersonal intelligence and metacognitive awareness is worth each 0.746, 0.751 and 0.744 respectively. That’s means all survey data values are reliable because all variables value are above 0. The conclusion is teaching skills, intrapersonal intelligence and metacognitive awareness survey data are valid and reliable.

Table 2. Variable Frequency Distribution of Teachers’ Teaching Skills

| No  | Categories | Interval | Frequency | Frequency (%) |
|-----|------------|----------|-----------|---------------|
| 1   | Very High  | 76 – 96  | 7         | 12.28%        |
| 2   | High       | 57 – 75  | 48        | 84.21%        |
| 3   | Medium     | 38 – 56  | 2         | 3.5%          |
| 4   | Low        | 19 – 37  | 0         | 0%            |
| 5   | Very Low   | 0 – 18   | 0         | 0%            |
|     | Amount of  |          | 57        | 100%          |

Table 2. shown that variable frequency distribution of teachers’ teaching skills have 5 categories, namely very high, high, medium, low and very low. The highest frequencies is in category of high with 84.21%. The other categories have 12.28%, 3.5%, 0% and 0% for very high, high, medium, low and very low respectively. That’s means teachers’ teaching skills of vocational high school majoring in computer engineering and networking in Blitar City is in the high category.

Table 3. Variable Frequency Distribution of Students’ Intrapersonal Intelligence

| No  | Category | Interval | Frequency | Frequency (%) |
|-----|----------|----------|-----------|---------------|
| 1   | Very High| 76 – 96  | 19        | 33.33%        |
| 2   | Height   | 57 – 75  | 37        | 64.91%        |
| 3   | Medium   | 38 – 56  | 1         | 1.754%        |
| 4   | Low      | 19 – 37  | 0         | 0%            |
| 5   | Very Low | 0 – 18   | 0         | 0%            |
|     | Amount of|          | 57        | 100%          |

Table 3. shown that variable frequency distribution of students’ intrapersonal intelligence have 5 categories, namely very high, high, medium, low and very low. The highest frequencies is in category of high with 64.91%. The other categories have 33.28%, 1.754%, 0% and 0% for very high, high, medium, low and very low respectively. That’s means students’ intrapersonal intelligence of vocational high school majoring in computer engineering and networking in Blitar City is in the high category.

Table 4. Variable Frequency Distribution of Students’ Metacognitive Awareness
Table 4. shown that variable frequency distribution of students’ metacognitive awareness have 5 categories, namely very high, high, medium, low and very low. The highest frequencies is in category of high with 80.70%. The other categories have 12.28%, 7.01%, 0% and 0% for medium, very high, low and very low respectively. That’s means students’ metacognitive awareness of vocational high school majoring in computer engineering and networking in Blitar City is in the high category.

Table 5. Data Distribution

| Category          | Teaching Skills | Intelligence Intrapersonal | Metacognitive Awareness |
|-------------------|-----------------|----------------------------|-------------------------|
| N                 | 57              | 57                         | 57                      |
| Valid             | 57              | 57                         | 57                      |
| Missing           | 0               | 0                          | 0                       |
| Mean              | 69.63           | 71.98                      | 75.74                   |
| Median            | 69              | 72                         | 76                      |
| Std. Deviation    | 5.608           | 7.249                      | 8.514                   |
| Minimum           | 55              | 49                         | 51                      |
| Maximum           | 84              | 90                         | 97                      |
| Sum               | 3969            | 4103                       | 4317                    |

Table 5. shown that data distribution is seen based on validity, mean, median, standard deviation, minimum, maximum, and sum. All survey data are valid because all of 57 survey data are filled in. Mean value of teaching skills, intelligence intrapersonal, metacognitive awareness are 69.63, 71.98 and 75.74 respectively. Median value of teaching skills, intelligence intrapersonal, metacognitive awareness are 69, 72 and 76 respectively. Standart deviation value of teaching skills, intelligence intrapersonal, metacognitive awareness are 5.608, 7.249 and 8.514 respectively. Minimum value of teaching skills, intelligence intrapersonal, metacognitive awareness are 55, 49 and 51 respectively. Maximum value of teaching skills, intelligence intrapersonal, metacognitive awareness are 84, 90 and 97 respectively. Sum value of teaching skills, intelligence intrapersonal, metacognitive awareness are 3969, 4103 and 4317 respectively.

The results of the correlation analysis between teachers’ teaching skills towards metacognitive awareness of VHS students in the computer network engineering study program in Blitar City is a weak correlation. This shows that there is no significant contribution partially in teaching skills towards the achievement of competency in computer assembly of vocational students in the computer network engineering study program in Blitar City. Murthado's research [19] explained that learning using metacognition and critical thinking strategies greatly helped students improve their ability to write arguments.

Furthermore, the Septiyana [20] study concluded that with the teacher giving the task of writing a journal as a recording of reflection shortly after the learning activities could improve students' metacognitive. The learning journal is a record of students' reflections during the learning process which contains material that has been understood, which has not been understood and which needs to be studied further in order to achieve learning goals. Journal of learning as a metacognitive thinking strategy.
The results of the Choudhury and Chowdhury [21] study show that there is a significant relationship between teaching competence and metacognitive awareness. Teachers should use a variety of strategies to increase students’ metacognitive awareness. The quality and efficiency of education depends on the quality of the teacher who really gives added value to students. The purpose of the education system is to prepare knowledge to students, but also teach them "learning how to learn" to organize thinking processes so that they can solve different problems and to develop competencies needed for future challenges.

Tosun and Senocak [22] found that problem-based learning is effective for developing students’ metacognitive awareness. Furthermore, Pucheu's research [23] concluded that: Metacognitive awareness is an adoption and application of proven educational initiatives. Teachers who successfully implement criterion referenced instruction transfers to their students. The metacognitive knowledge and skills of how to learn. In doing so, they increase the cognitive resources and skills necessary for performance achievement, but also for life-long learning.

The above statement can be interpreted that metacognitive awareness is very important to be adopted and proven its use in education. Successful teachers implement instructions that can transfer to students metacognitive knowledge and how to learn skills. So that the increase in human resources in the form of cognitive and skills is needed not only for achievement, but also for lifelong learning.

The results of the correlation analysis between students' intrapersonal intelligence on metacognitive awareness of vocational students in the computer network engineering study program in Blitar City are strong correlations. This shows that there is a partially significant contribution of students' intrapersonal intelligence to the metacognitive awareness of vocational students in the computer network engineering study program in Blitar City. According to Mayne [24] teaching and learning strategies are reflective practice through setting goals, reflective journals and discussions can help students to develop self-awareness and self-direction. Reflective ability is useful not only for students but also for workers because this ability is key to lifelong learning [25].

Intrapersonal intelligence helps individuals to make opinions and distinguish between their own thoughts that help in making decisions. This is useful for being able to access essential abilities such as knowing oneself, self-awareness, self-understanding, self-motivation and control of habits, emotions, and self-expression. Characteristics of students who have intrapersonal intelligence that is able to set realistic goals for themselves. The development of intrapersonal intelligence helps students to know themselves, so as to apply this knowledge to improve learning strategies based on their strengths [26].

Pearson [27] explains that intrapersonal intelligence is very useful in learning through self-reflection, participation in metacognitive and like working alone. High intrapersonal intelligence is demonstrated by the ability to reflect on the strengths and weaknesses [28]. Furthermore, As Visser's research, Ashton & Vernon [29] explains that there is a significant relationship between intrapersonal and metacognitive intelligence. So students who have high intrapersonal intelligence realize what they know and they don't know.

The results showed there is no significant contribution of partially teaching skills to students' metacognitive awareness. Then there is a significant contribution of partial learning skills to students' metacognitive awareness with the percentage 44.22%. Last, there is a significant contribution of teaching skills and intrapersonal intelligence simultaneously towards students' metacognitive awareness with the percentage 52.8%.

5. Conclusion
The result of research shown that there is no significant contribution between partially teaching skills to the metacognitive awareness of vocational high school students in Blitar City. Then there is a significant contribution between intrapersonal intelligence partially to the metacognitive awareness of students in the computer network engineering study program at Blitar City Vocational High Schools with the percentage 44.22%. There is a significant contribution between teaching skills and intrapersonal intelligence simultaneously to the metacognitive awareness of students in the computer network engineering study program at Blitar City Vocational High Schools with the percentage 52.8%.
6. Suggestion
The results of the study shown that the indicators on teacher teaching skills variables with the lowest average value on the skill indicators give reinforcement so that to overcome this there is a need for guidance for teachers to be able to reward students if there are students who are able to answer questions correctly give praise (right, good, great and right), if anyone who completes the task the best should give an additional pleasant task that is helping other friends, and if anyone has advanced in front of the class to complete the task should give applause.

The results of the study also shown that the indicators on intrapersonal intelligence variables of students with the lowest average value on the indicators are independent. To overcome this by giving guidance to students to be able to work on their own tasks, overcome their own difficulties, and can change the shortcomings of themselves into excess self.

Last, the results of the study shown that the indicators on the metacognitive awareness variables of students with the lowest average value on the evaluation skills indicator so that to overcome this there is a need for teacher training to improve self-evaluation skills by familiarizing students to make a summary after finishing learning, and the teacher evaluate students with regular quizzes or daily tests to find out how well students understand the material that has been delivered in class.

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