The Students' Creativity Level at the Technical Department of Politeknik Maritim Negeri Indonesia

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Abstract: There are many factors affecting the learning outcomes of education, one of which being creativity. The present research examined the students' creativity level at the technical department of Politeknik Maritim Negeri Indonesia. This descriptive research implemented the purposive sampling technique, involving 48 students as research subjects. A test consisting of 10 items to measure creativity was assigned to them. The data were analyzed using descriptive statistics and subsequently used to categorize the students based on their creativity level. The results revealed that the students had different creativity level (majorly high creativity in third semester students and low creativity in first semester students). Further details were elaborated and their relevance with teaching method selection was discussed. Future research should investigate how creativity interacts with certain teaching methods and moderates the learning outcomes.
Keywords: *education; creativity level; teaching method;*

1.   INTRODUCTION

It is a widely known fact that education has played a pivotal role in every country in order to achieve prosperity, which is by producing quality human resources. As a developing country, the Indonesian government has realized this urgency and has since attempted to improve the quality of education through various mechanisms. The efforts include allocating 20% of the state budget for education (*Article 31 Paragraph 4 of The 1945 Constitution*, n.d.)and continuously replacing the existing curriculum with a better one(*Permendikbudristek Number 56 of 2022*, n.d.). Therefore, it all comes down to the execution of said budget and curriculum.

On the field, a curriculum is heavily reflected in the teaching and learning process. A successful teaching and learning process helps achieve the objectives of the curriculum. However, there are many factors that affect the intended results. The delivery of teaching (Munyaradzi, 2016), the student condition and situation in learning (Boekaerts, 1996), and other supporting instruments for teaching (Smaldino et al., 2019) are some of the most influencing factors. It is by identifying, analyzing, and finding the best condition for every factor that we can ensure a successful teaching and learning process.

Of the three aforementioned factors, the students' condition for learning is the most rigid one. The teaching method can be replaced, the skill of teachers can be improved, and the learning media can be provided. However, the student condition cannot change easily. Each student is unique and comes with a different kind of culture, knowledge, and personality. By identifying these differences, appropriate teaching methods or media can be tailored to meet the specific needs of the students.

A specific trait of personality that has received increased attention lately is creativity. Creativity is defined as the ability of a person to make use of existing things to produce better things or simply create something entirely new in order to solve existing problems or challenges (Munandar, 1977; Dornyei, 2005). It is deemed that high creativity is a favorable personality trait with its other end of the spectrum (low creativity) seen as unfavorable. It is noteworthy that the high-low creativity relationship is different with other traits (such as introversion and extroversion) where both spectrums offer positive qualities.

A creative person can be observed as they tend to exhibit several defining aspects. Munandar (1977)elaborated on four aspects of creativity, which include flexibility, fluency, originality, and elaboration. Gregory (2013) has similarly identified three aspects of creativity, including flexibility, fluency, and originality. Both scientists share three aspects of creativity, with the latter leaving elaboration out as he deemed it to overlap with other aspects of creativity.

Nadiem Makarim, the current minister of education, culture, research, and technology of Indonesia has campaigned on the importance of nurturing creativity in Indonesian students. This is especially true for vocational education as it sets out to prepare students to be gainfully employed, self-employed, or provide employment for others, with the latter two requiring more creativity compared to the former. As an institution providing vocational education for its students, Politeknik Maritim Negeri Indonesia (Polimarin) must pay more attention to the creativity of its students. As there has been no previous research exploring the

psychological aspects of the students in Polimarin, this research attempted to kick start the discussion. Thus, this research sought to examine the creativity level of students at the technical department of Polimarin.

2.   METHOD

The subjects of this descriptive research were the students of the technical department in Polimarin during the 2021/2022 academic year. In selecting the subjects, the purposive sampling technique was used. The subjects consisted of two classes (30 people) of first semester students and one class (18 people) of third semester students. The fifth semester students were excluded as they were on the field practice program.

To collect the data, a test to measure student creativity levels was needed. There are several kinds of tests to measure creativity. The present research employed a verbal creativity test by adopting creativity aspects proposed by Munandar (1977)and Gregory (2013), which consisted of fluency, originality, flexibility, and elaboration. Both scientists developed instruments for measuring creativity in their respective versions. Instead of using the readily available test, the researcher decided to design his own items to better suit the students of Polimarin's maritime specialty. The designed test consisted of three sub-tests with 10 items, as presented in Table 1.

Table 1. Instrument for Measuring Creativity

Sub-test	Measured Aspect	Number of Item
Similar Characteristics	Fluency	3
Unusual Use	Flexibility, Originality	4
What If	Elaboration	3

The "similar characteristic" sub-test asked the students to name things that share the same characteristics mentioned. The "unusual use" sub-test required the students to name functions of a certain thing other than its original function. In the "what if" sub-test, the students were presented with a fictional scenario and asked to describe what will happen next if such scenario transpires. The following mechanisms were applied in scoring their answers:

- Every correct answer was worth 1 point and wrong answer was worth 0 point.
- Repeated or similar answers were scored once.
- A maximum of 10 points were given for each item, even if more than 10 correct answers were provided by the students.
- The students' total score ranged from 0-100.

To enhance the quality of the instrument, the researcher attempted to meet its validity and readability. The construct validity was met as the instrument was designed based on the creativity aspects proposed by experts. Furthermore, the instrument was written in Bahasa to satisfy its content validity (measuring only creativity and not English vocabulary).

After the validity criteria had been met, a round of readability test was conducted. The instrument was assigned to a group consisting of 15 students from another department. After completing the test, they were given a questionnaire in which they were asked to score the readability of instructions and items as well as the time allotted for each item on a 4-points Likert scale. The readability score was 3.47 out of 4.00, indicating that the test instructions and items were readable for students and the time allotment was sufficient for them to provide their answers.

3.   RESULTS AND DISCUSSION

Upon completion, the students' answers were scored by two raters (inter-rater) to ensure their reliability and subsequently classified into one of the creativity levels. The students' creativity score data are presented in Table 2 and Table 3.

Table 2. Creativity Score of First Semester Students

Creativity Level	Range	Number of Students (%)
High	71-100	5 (16.7)
Medium	31-70	9 (30)
Low	0-30	16 (53.3)

Table 3. Creativity Score of Third Semester Students

Creativity Level	Range	Number of Students (%)
High	71-100	9 (50)
Medium	31-70	5 (27.7)
Low	0-30	4 (22.3)

Overall, the creativity level of first semester students at the technical department of Polimarin was mostly in the low category. Low creativity students find it hard to come up with new ideas and rely heavily on what others tell them to do. This should be taken into consideration when choosing the most suitable teaching method for these students. Teacher-centered methods, such as the Direct Method (Ghufron, 2015) and Audio the Lingual Method (Herdawan, 2015) are suitable for these students as these methods move the spotlight away from the students, and demand heavy involvement and guidance from the teacher.

Half of the third semester students at the technical department in Polimarin fell into the high creativity category. These kind of students relish the opportunity to think and act based on their own knowledge and assumptions. A relatively free learning environment is more suitable for them compared to one dictated by or dominated by the teacher. To meet such a situation, student-centered teaching methods such as the Roleplay (Noviyanti, 2016) and the Schoology (Masyhudianti et al., 2018) are ideal to implement. These methods demand heavy involvement from the students, downgrading the teacher's role to that of facilitator.

Students with a medium creativity level are at an advantage compared to their high and low counterparts. These students can adapt to both kinds of teaching methods. Therefore, their number should not be heavily considered when selecting which teaching method should be used in a certain class.

The challenge is that classes in Polimarin were not made up of students with similar levels of creativity. Hence, applying either the teacher-centered or student-centered method leaves some students uncomfortable with the way the lessons are being delivered. To mitigate this circumstance, there are three potential solutions that can be implemented either individually or simultaneously: weekly altering teaching methods, pairing up or assigning groups of students from different creativity levels, or reassigning students to classes based on their creativity level.

The first option, altering teaching methods (between teacher-centered and student-centered), poses several benefits, both for the teacher and the students. Students will not become bored if the same method is used in every meeting. In addition, the teacher has the chance to practice various methods and see which one could boost the students' learning outcomes optimally.

The second option is done by assigning pairs or groups composed of students with differing creativity levels. This way, the students can help each other deal with the teaching method being implemented by their teacher. Indirectly, this option also promotes collaborative learning, which has been proven as an effective means for achieving better learning outcomes(Laal & Ghodsi, 2012; Laal & Laal, 2012; Nokes-Malach et al., 2015)

The third option, the most radical solution, involves reassigning students into classes based on their creativity level. This particular solution offers two advantages. First, this can resolve the dilemma experienced by the teacher when selecting what teaching method to use (either teacher-centered or student-centered). Second, the students feel comfortable with the way they are being taught and do not have to make compromises when an unfavorable teaching method is being used.

4. CONCLUSIONS

There are three conclusions that can be drawn based on the discussion: (1) First semester students at the technical department of Polimarin in the 2021/2022 academic years are mostly in the high creativity category, (2) third semester students at the technical department of Polimarin in the 2021/2022 academic years are mostly in the low creativity level category, (3) the teacher should consider the students' creativity level when selecting teaching methods.

The present research serves as the basis for conducting further research on investigating different personality traits, trying out different teaching methods in relation to certain personality traits, or developing new teaching methods that suit certain personality traits.

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