Testing the Level of Creativity in Teens Based on the Characteristics of Creativity and Verbal Creativity Tests

Zulmi Ramdani¹, Bagus Hary Prakoso², Silmi Amrullah³, and Lidwina Felisima Tae⁴

¹ Faculty of Psychology UIN Sunan Gunung Djati Bandung
² Center for Educational Assessment, Ministry of Education and Culture
³ Master Students of Universitas Pendidikan Indonesia (UPI) Bandung
⁴ University College London (UCL) United Kingdom
zulmiramdani94@gmail.com

Abstract. Creativity is an important aspect of building a good culture of education. With this character, each individual is given the opportunity to develop his potential of intelligence in an actual manner. Good creativity is shown by the learning outcomes that not only focus on improving cognitive abilities but also on the process of solving a problem either by using divergent or convergent thinking skills. This study was carried out using the quantitative description to obtain an overview and the extension of the condition or level of creativity that exists in Indonesian teenagers. The study was conducted using two instruments, namely the Creativity Character Scale consisting of 10 items and a set of Verbal Creativity Tests (TKV) consisting of 6 subtests. The total subjects involved in this study were 470 students who were divided into two groups in which one group got the character scale of creativity while the rest were given the Verbal Ability Test. The results of the study through the acquisition of creativity scores, either from the Creativity Character Scale or Verbal Creativity Tests, describe that there were still many students who have not optimized their creativity. This becomes a serious concern that can be anticipated early by providing information about the importance of creativity. Furthermore, by knowing this, there is a possibility to create a potential instrument that could be effectively and directly used to capturing the condition of one's creativity.

Keywords: Creativity, Creativity Scale, Verbal Creativity Test
INTRODUCTION
The development and the advancement of technology nowadays demands an individual to adapt well with the change in all of the life aspects including in the area of education (Hromcová & Agnese, 2018). An adaptive education is defined as a system that is able to collaborate every aspect of education with the engagement of the most updated technology (Hromcová & Agnese, 2018). One of the challenges being faced in terms of technology development is to what extent each individual be able to develop their potential and characteristics which fits with the rapid change of the world presently. The aspect that is being considered as the significant factor in answering the rapid change of the world is creativity.

Many prior research has been done about the problem of creativity in which creativity posits a crucial aspect especially in developing the success based on personal elements inside the school (Revilla & Rodríguez-Prado, 2018). Creativity is the responsibility of many people in which every element in education should positively and actively create the teaching and learning process which based on the power of creativity (Ramdani & Fahmi, 2014). Furthermore, creativity is an indicator that an individual is able to effectively collaborate the knowledge and the highest level of intelligence in accomplishing something (Delis et al., 2007). Currently, the usage of creativity as a character is needed in order to adapt to the development of globalisation that demands us to constantly think creatively (Hromcová & Agnese, 2018).

Creativity is something that is complicated, has many domains and appears in many aspects of human life (Lucas, 2016). This aspect is considered as the highest level of human intelligence because of its originality and uniqueness (Abdulla & Cramond, 2017). The ability of creativity is also used as the basic foundation that has a tendency towards divergent thinking and problem solving (Abdulla & Cramond, 2017). The creativity aspect also could be directly linked with one’s performance in learning (Zhou, Shen, Wang, Neber, & Johji, 2013).

In the context of education, the function of creativity is to develop and optimize the learners’ potencies and existence (Konstantinidou, Zisi, Katsarou, & Michalopoulou, 2015). Teacher and students should have the same awareness and vision about what they should do in which teachers should have the belief that students are the active learners while students see creativity as a positive content that should be developed effectively (Lucas, 2016). Moreover, the existence of the school principal and other educational elements in school is the complementary aspect to develop a school that based on creativity (Ramdani, 2018).

In fact, not every educational aspect mentioned above has good awareness about the importance of creativity (Ramdani, 2018). The prior research reveals that not every educational elements have considered the eminent aspect of creativity because there is a tendency to believe that creativity should be found only in the learners (Ramdani, 2018). Meanwhile, it is known that if creativity is regarded as the significant factor in life, then collaboration of every educational element to develop the creativity is prominent (Ramdani, 2018). This research aims to gain the description of creativity level in the current condition in the schools. This research used the validated set of the instrument so that creativity could be well measured.

METHOD
The objective of this research is to testing and gaining the description of creativity in teenagers in the schools. The quantitative research design used was statistical descriptive and Inference to produce the description about the criteria and the level of creativity of the subjects in this research (Heng, Wagner, Barnes, & Guarana, 2018). There were two stages in this research. The first stage was about testing the statistical description using the Values in Action Inventory Strengths (VIA-IS) which has been developed by Peterson and Seligman in 2004 (Ramdani & Fahmi, 2014). Meanwhile, the second stage was about testing the ability of verbal creativity using the Creativity Verbal Test developed by the group of Faculty of Psychology from Indonesian University (LPSF3 UI, 2011). The discussion below explains the subjects’ specification and instruments used in this research.

| Table 1. The Specification of the Instruments |
|---------------------------------------------|
| Stage | Instrument | Specification |
|-------|------------|---------------|
| 1     | Values in Action Inventory Strengths (VIA-IS) | There are 10 favourable items consisting of 5 scales from 1 to 5 (Likert Scale) |
| 2     | Creativity Verbal Test (TKV) | There are 6 sub-tests that consist of: the Beginning of Words, Re-arranging the Words, Forming the Sentences Consisted of 3 Words, the Same Traits, the Types of Advantages, and the Results. |

The Data Collection used the longitudinal way by handing out the scale and testing out the set of the instrument to about 470 teenagers aged 12 to 18.
RESULT AND DISCUSSION

A. The Result of Creativity Characteristic Scale

Table 2. The Description of Subjects based on Gender

| Gender | Frequency | Percentage |
|--------|-----------|------------|
| Boys   | 105   | 37.8%      |
| Girls  | 173   | 62.2%      |
| Total  | 278   | 100%       |

The subjects involved in this first stage was 278 subjects consisted of 105 boys and 173 girls that indicates that there were more girls than boys in this research.

Table 3. The Description of Subjects Based on Age

| Age     | Frequency | Percentage |
|---------|-----------|------------|
| 11-13 years old | 28 | 10.1% |
| 14-15 years old | 63 | 22.6% |
| 16-17 years old | 168 | 60.4% |
| 18-19 years old | 19 | 6.9% |
| Total    | 278   | 100%       |

The table of Description of Subjects Based on Age reveals the range of age of subjects in this research. The teenagers aged 16 to 17 became the majority of subjects involved in this research, while those with aged 18 to 19 became the fewest in this research. The percentage of the ratio was 60.4% for the highest and only 6.9% for the lowest. Thus, it can be concluded that subjects aged 16 to 17 were the most dominant age in this research.

Table 4. The Category of the Characteristic of Creativity

| Creativity | Frequency | (%) |
|------------|-----------|-----|
| High Creativity | 128 | 46 |
| Low Creativity  | 150  | 54  |
| Total          | 278   | 100 |

The information gained from table 3 above shows that in this first stage, the majority of teenagers was categorised in the level of low creativity (278), higher than those who categorised as having high creativity (128).

B. The Result of Creativity Verbal Test

The second stage was done by handing out a set of instrument that could measure the teenagers’ verbal intelligence by accomplishing 60-minutes test to finish the whole sub-test. The test was done classically because it was easier administratively and also effective and efficient in both time and financial (Marques-Costa, Almiro, & Simões, 2018).

Table 5 The Description based on Gender

| Gender | Frequency | Percentage |
|--------|-----------|------------|
| Boys   | 79   | 41.1%      |
| Girls  | 113  | 58.9%      |
| Total  | 192  | 100%       |

The total subjects in this second stage were 192 students consisted of 79 boys and 113 girls which mean that there were more girls than boys in this research.

Table 6. The Description based on Age

| Age     | Frequency | Percentage |
|---------|-----------|------------|
| 15-16 years old | 146 | 76% |
| 17-18 years old | 46 | 24% |
| Total    | 192   | 100%       |

The description in Table 6 explains the range of age of the subjects in this research. The teenagers aged 15 to 16 was the dominant subjects with the total percentage of 76%, while the rest was the teenagers aged 17 to 18 with the total percentage of 24%. In determining the level of creativity in this research, there was the using of CQ (Creative Quotient) or the intelligence of creativity by normalising the instrument in order to fit with the teens aged 10 to 18 (Munandar et al., 1985).

Table 7. The Category of Creative Intelligence

| CQ     | Frequency | % |
|--------|-----------|---|
| Below the Average | 7 | 3.6 |
| Average     | 59 | 30.7 |
| Above the Average | 56 | 29.2 |
| Superior     | 39 | 20.3 |
| Very Superior | 31 | 16.1 |
| Total        | 192 | 100 |

From table 7, it could be seen that in this research, the majority of subjects were in the Average Level with the highest total of the percentage of 30.7%. This was followed by the category of Above the Average (29.2%), Superior (20.3%), Very Superior (16.1%), and the latest was Below the Average with the total of 3.6%.
DIFFICULTY IN UNDERSTANDING AND EXPRESSING THE MEANING OF CREATIVITY. This is because the student might live in an unsupportive environment of environment they live in, where it is possible that the solutions towards the problem being solved (Japardi, Bookheimer, Knudsen, Ghalremani, & Bilder, 2018). This creativity is closely linked with divergent thinking that always provides variation in solving the problem. By doing this, an individual can exhibit their existence in their works and activities (Japardi et al., 2018).

Although creativity is not the only factor that determines student’s achievement in learning, at least it takes the role as the foundation step to developing one’s intellectual ability (Zabelina & Ganis, 2018). This aspect has a close link with the performance showed by students in school, yet not the only one that significant, thus there is a need to train the creativity in order to optimize the ability to think and work effectively (An, Song, & Carr, 2016). There should be an understanding that creativity is the product of environment and the potentiality of intelligence as one’s inheritance from his/her parents, therefore optimising the potency is prominent (Japardi et al., 2018). The result in this research about the scale of characteristic of creativity shows that the level of creativity in the subjects has not reached the satisfaction level. Thus, it could be concluded that there still the limitation in terms of students’ potentiality and their perception about creativity.

The reason why there were more students with low creativity could be explained with demography aspect, in which demography influences the consistency of student’s knowledge that they have been developing day by day. The subjects in this research were randomly chosen from suburb area in which when doing the prior research and the mapping, it was found that the subjects even had difficulty in understanding and expressing the meaning of creativity. This is because the difference of environment they live in, where it is possible that a student might live in an unsupportive environment that could support his/her creativity. This fact can be explained using some factors based on prior research. Firstly, genetically, the potential of creativity is gained due to his/her gene as the inheritance factor (de Manzano & Ullén, 2018). Secondly, the potential of intelligence could be developed because of the influence of environment where one lives and how he/she interacts with the environment that demands the creative activity (Hur, Jeong, & Piffer, 2014). It is understood that the significant contribution to one’s creativity is the genetic intelligence, but it is also important that how one interacts with the environment would establish how an individual uses his/her creativity to accomplish something like the way to use divergent thinking (Hur et al., 2014).

In terms of subjects in this research, it can be explained that majority of subjects involved in this research interacted with the condition and situation of school that is less active in supporting their students’ creativity, thus students were not triggered to develop their potentialities. Systematically, the collaboration amongst educational elements in school can be done to enhance students’ creativity in school (Ramdani, 2018). It should be noted that the creative environment should be consistently created from the early stage from the lowest level of school to the higher school level because it could maintain students’ creativity (Gajda, 2016). Furthermore, it should be taken into account that the school principal holds an essential role in supporting students’ creativity by providing supporting facilities to stimulate students’ creativity (Y. S. Chang, Lin, Chien, & Yen, 2018). Also, teachers’ role is eminent in helping students develop their creativity in which teachers could teach the students creative activities by using advanced technology where internet is the media to stimulate students’ creativity (Boysen, 2017). Teachers also could create such enjoyable learning in teaching process by giving the reward to the students’ product of creativity, therefore, students’ are motivated to expand their creativity (S. H. Chang, Wang, & Lee, 2016).

The second stage in this research also shows that there still the limitation in developing students’ creativity in school. Though the result of this research shows that the majority of students’ creativity were above the average, quantitatively, there still many students who scored below the average of their creativity. Thus, there should be more attention given in terms of students’ verbal ability or creative verbal in students.

The verbal creativity test is essential in giving the chance to students to express their ideas that are focused on the process of divergent thinking (Munandar et al., 1985). Besides the characteristic of creativity that is considered as the ability found in an individual, the verbal creativity test also demands a student to develop their creativity which has a link with the period or the mass of the healthy brain found in their body (Fink et al., 2014). An individual who has verbal intelligence is provided with the system of thinking and the condition of the brain filled with the good liquid of grey matter that has been developed since the pregnancy stage (Fink et al., 2014). This, of course, has a close link with the mother’s condition while the pregnancy period, for example in giving the food and nutrition to the child (Tarnoto & Purnamasari, 2009). The score of creativity gained by boys and girls also shows the discrepancy. This is consistent with the prior research which indicates that the difference of
gender also influences the intelligence and verbal ability (Fink & Neubauer, 2006).

The second testing of this research was influenced by many biases in its implementation, especially in relation to the condition of the subjects of this research and the testers of scoring (Murphy & Davidshofer, 1997). These biases might result in the errors while calculating the scoring or in optimising the subjects who accomplish the tests here. In this research, there is a difficulty in getting the perfect time to ask the subjects to do the test due to the packed schedule of the school programme. This makes some subjects did the test classically after the school programme where subjects might not in the best condition, because they might feel tired after school time. This might result in their performances when accomplishing the test (Cecil & Ph, 1981). Another problem faced in the testing time was about the tester and scorer that could contribute to the determination of the students’ category of intelligence. Some limitations such as the incompetence of the tester, the private problems that might faced by the subjects that influences the concentration during the test, or other personal problems that might occur while doing the test could possibly contribute to the error of the measurement in this second test (Spies & Plake, 2005).

CONCLUSION

This research gives the description of the samples about the current condition of the students’ creativity. It is suggested that there should be much more attention given to the creativity because based on the result of this research, there still limited optimization of ability and characteristic of creativity.

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