

The Effects of Emotions and Genders toward Creativity among Undergraduate Students of Universiti Pendidikan Sultan Idris

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Abstract

As Malaysia's national curriculum appeared to promote creative subjects instead of enhanced by itself, this study aimed to study the effect of emotions and genders toward creativity among undergraduate student in Universiti Pendidikan Sultan Idris (UPSI). This study was conducted through experimental method. This between-subject experimental study was conducted by watching a short video and complete a set of questionnaire to the participants. A total of 32 participants with equal gender were participated in the experiment through convenience sampling. Instruments used were the PANAS Questionnaire and Alternative Uses Task (AUT). Two types of videos to give intended effect of positive and negative emotions were used. Manipulation check was conducted before the actual study to test the instruments. Research hypotheses were tested by the independent T-test analyses. Results showed that there was no significant difference between both emotions and genders respectively toward creativity. Lastly, thorough discussions on the effect of emotions and genders among these variables toward creativity were presented in this paper. Some implication, limitation and recommendation for future study were discussed.

Keywords: Emotions, Genders, Creativity, Experimental, Undergraduate Student

Introduction

At the individual level, creativity is useful in solving the problems of daily life, while the social level serves to guide the development of science and technology (Aziz, 2018; Cotrunada, Naim & Sumardi, 2018). According to Welch and McPherson (2012), creativity is the human capacity processing imagination and invent new solutions for complex problems (Kupers, Van Dijk & Lehmann-Wermser, 2018). The thinking ability between both male and female are different that led to different effect on creativity (Piaw, 2013). Men and women also react differently in emotional perspectives. Therefore, every human being with different emotion and different gender have their own way and creativity to solve problems.

Rhodes (1961) developed 4Ps' of Creativity theory to explained creativity in four terms. The theory summarizes that personalities, environments, the steps and ideas play important role to improve creativity. It visualizes how emotions effect creativity in terms of

person, press, process and product (4Ps). As in this study, person is the gender of the participants, press is the stimulators that induced their emotions, while process is how they think, while product is the outcome of this experiment.

Based on a report of Adobe Study (2012), among 1000 college-students and full time employees in the United States, 78% of them yearn for more creative thinking and 85% agreed that it is significant to have creative thinking to solve problems. However, national curriculum in Malaysia seems to suppress creativity when it is supposed to encourage and enhance it (Abdullah, 2019). There is a lot of mixed finding whether positive or negative emotion, and male or female has an effect of creativity. Therefore, with two research objectives, this study aims to examine, (i) the effect of positive and negative emotions on creativity among undergraduate students and (ii) the effect of male and female on creativity among undergraduate students. At the end of this study, may students be benefited with new founding and knowledge that emotions also promote to increase creativity.

Literature Review

Original and useful is the main keys to rate the outcome of creativity as stated by Sternberg and Lubart (1999) in Sowden and Dawson (2011). The effect of mood on creative ideation (more solutions) is higher in positive affect and creative evaluation (more accuracy) is higher on negative affect. Past research also reveals that idea-evaluation process can be created with an affective arousing situations, thus effect people's evaluation of creativity with those emotions (Mastria et al., 2019).

Moreover, when mood increase, dopamine level increase, thus improves aspects of human creativity (Chermahini & Hommel, 2012). When using meta-analytic method (Pe & Tan, 2008), it shows that positive affect promotes higher creative performance and directly improve creativity. Positive and negative emotions are both beneficial for creativity in its own way such as innovative thinking and problem finding respectively (Langley, 2018). Meanwhile, individuals with depression (Chang & Chen, 2018) and high neuroticism (Leung et al., 2014), which are experiencing negative emotions can also effect and enhance creativity when they projected it to an art or a task. Therefore, it is predicted that:

H₀1: There is no significance difference between positive and negative emotion toward creativity.

H₁1: There is a significance difference between positive and negative emotion toward creativity.

Inconsistent findings were found in past studies on gender differences toward creativity where previous researchers used different instruments and found that male and female has no difference in creative perception (Naderi et al., 2009) and creative potential (Ariffin et al., 2011) but has different in creative thinking ability (Chua, 2013). Through technology advancement which using virtual learning method (Gunawan et al., 2018), female poses more on virtual creativity, while male is higher in figural creativity. Therefore, another hypothesis can be made which is:

H₀2: There is no significance difference between male and female toward creativity.

H₁2: There is a significance difference between male and female toward creativity.

Methods**Sample**

This study is a between-subject experimental design with a sample of undergraduate students of Universiti Pendidikan Sultan Idris ($n = 32$). The participants were in the range of 19 to 24 years old (mean age: 21.5 years) with equal number of gender. The participants were from Malay (90.6%), Chinese (6.3%) and Indians (3.1%). Students involved in this study are from Faculty of Human Development (90.6%) and Human Science (9.4%).

Measures

Three instruments were used to reach the objectives of this study. First, demographic information to collect data on participants' gender, age, ethnicity and faculty of department. Second, PANAS Mood Questionnaire by Watson et al. (1988) which have 10 items for positive affect (PA) and negative affect (NA) respectively. The reliability of PANAS scale is ranges from .86 to .90 for PA and .84 to .87 for NA.

Alternative Uses Task (AUT) is used to measure creativity with four components which are fluency, flexibility, originality and elaboration will be evaluated by listing all uses of paperclip in 3 minutes. The reliability and validity of the test are .92 and .83 respectively (Vosburg, 1998; Corpley, 2015).

Procedure

To begin the experiment, a randomized block design was assigned to split equal number of male and female into two more groups. The participants were given an informational sheet and consent form to get their permission and agreement to participate in the study which have different internal condition. Then, the participants in Group 1 were exposed to a sitcom short video, while Group 2 were exposed with a short fright and obnoxious video clip from short film. The first and second videos are 5-minutes long. Both groups were asked to fill in demographic information and rate their feeling before and after watching the video using PANAS Mood Questionnaire to measure their emotion. Next, they were asked to answer questions on Alternative Uses Task (AUT) within three minutes.

Manipulation Check

Before conducting the actual experiment, back-to-back translation and manipulation check were conducted. Manipulation check were conducted to check the effectiveness of inducing stimuli which in this study, two videos were used to induce positive and negative emotions of Group 1 and Group 2 respectively. Six items 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), taken from PANAS Mood Questionnaire were used which are interested, excited and enthusiastic for positive emotion and scared, afraid and nervous for negative emotion. Meanwhile, 85% of the respondents agreed that AUT tool genuinely test their creativity.

Result shows that both male and female participants agreed that positive video give positive effect ($M = 16.00$, $SD = 2.98$), and negative video give negative effect ($M = 15.00$, $SD = 2.31$). Considering the average score of each emotion for positive and negative videos, most of the respondents evaluated the videos they watched as 4 (neither agree nor disagree) to 6 (agree) of how they feel respectively for both videos. This serves as an indicator that the manipulation of video stimulus has been successful.

Result

Descriptive analysis will be analysed using demographic background. Independent T-test was applied to examine the effect of genders and emotions toward creativity. Statistical Package for Social Science programme (SPSS) version 23.0 was used to conduct all the statistical analysis.

Table 1 shows no significance differences between positive emotion ($M = 13.56$, $SD = 6.25$) and negative emotion ($M = 12.00$, $SD = 7.81$) condition; $t(30) = .625$, $p = .537$ on creativity at the 0.05 level. Thus, alternative hypothesis 1 was failed to be accepted. However, the mean score of creativity for positive emotion is significantly higher than the mean score of creativity for negative emotion.

Table 2 shows no significance difference between male ($M = 13.56$, $SD = 7.87$) and female ($M = 12.00$, $SD = 6.16$) on creativity. Thus, alternative hypothesis 2 was failed to be accepted, $t(30) = .625$, $p = .537$ with 0.05 level.

Table 1

Independent t-test of positive and negative emotion on creativity

| | <i>M</i> | <i>SD</i> | <i>T</i> | <i>Df</i> | Sig. | 95% Confidence Interval of the Difference | |
|------------------|----------|-----------|----------|-----------|------|---|-------|
| | | | | | | Lower | Upper |
| Positive Emotion | 13.56 | 6.25 | .625 | 30 | .537 | -3.54 | 6.67 |
| Negative Emotion | 12.00 | 7.81 | | | | -3.55 | 6.68 |

Table 2

Independent sample t-test between male and female on creativity

| | <i>M</i> | <i>SD</i> | <i>t</i> | <i>Df</i> | Sig. | 95% Confidence Interval of the Difference | |
|--------|----------|-----------|----------|-----------|------|---|-------|
| | | | | | | Lower | Upper |
| Male | 13.56 | 7.87 | .625 | 30 | .537 | -3.543 | 6.668 |
| Female | 12.00 | 6.16 | | | | -3.555 | 6.680 |

Additionally, Figure 1 shows that both male and female have higher mean of creativity on positive emotion than negative emotion. The chart also shows that male is more creative than female on both positive and negative emotions.

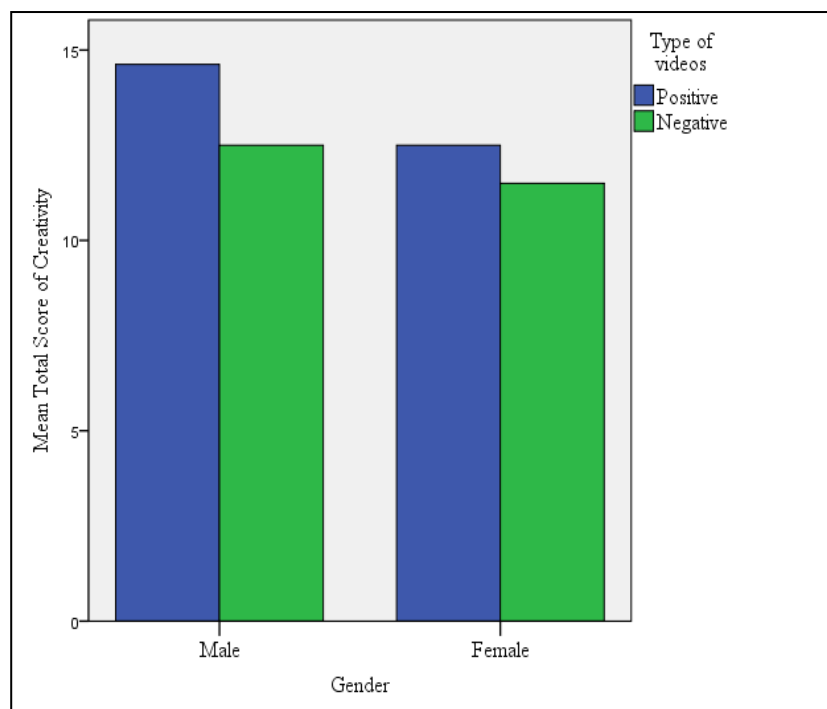


Figure 1. Bar chart of emotion and gender on the mean of creativity

Discussion

The components of AUT instrument that measure creativity based on fluency, originality, flexibility or categorization and elaboration shows that participants are easier to score at fluency than other three components within three minutes which really puts them under time pressure.

Past study shows and supports that an outcome of task with a time pressure generates more ideas (Shalsabila, Putri, Hosen, Ernas, Hasibuan & Pebriani, 2018). Next, eight categories were found from the response. The more categories, the higher their creativity. However, originality and elaboration are the most least to score. These four components of AUT tools are the product outcome of creativity based on the 4Ps' Creativity Theory.

The first objective of this study was to examined the effect of emotions toward creativity. As shown in the result proving the hypothesis that there is no significance difference between positive emotion and negative emotion toward creativity, thus it proves that creativity can be affected with both emotions. Furthermore, it was supported by previous researches that positive emotion promotes creative performance and increase creativity (Pe & Tan, 2008) and a study of neuroticism (negative emotion) can improve creativity by Leung et. al (2014).

The second objective of this study was to examined the effect of genders toward creativity. Several research of past studies concluded that there is a significance difference between male and female toward creativity, but the result of present study shows otherwise. Two points to be taken for this insignificance result which are the medium or instrument type used to measure creativity and the used of videos as external stimulator to manipulate the emotion of participants and measure their creativity.

According to the theory of 4Ps' Creativity, the interaction between human and the environment effect the creativity or the outcome and product of the idea. The process to generate the idea was occurred when there is a learning process through the experiment. Therefore, the results of this experiment were supported by both previous studies and theory. This concludes that student can be benefited creatively when connect more with the environment and interact with everyday object around us to improve our thinking skill and generate more ideas.

Conclusion

There are several inferences that could be derived from the result of this study. First, students can consider that some stimuli that give positive emotions is very helpful to increase creativity. As much as positive emotion could increase creativity, negative emotion also improves creativity. Furthermore, this study also give implication to student that male and female have no difference on creativity thus, they have to stabilize their emotion to have better creative thinking and solve problems. Besides, creativity can be increased by identifying the four aspects of creativity which can be applied to any organization as the four main factors are involvedly interconnected to each other.

In carrying out the experiment, some issues were discovered. Firstly, finding and dealing with the participants as this study used convenience sampling. Next, it is difficult to find the same number of population among Malay, Indians and Chinese students with participation with other nine faculties as the experiment only conducted at one setting. The sample size in this study also was quite small. All of these limitations might affect the results of this study.

Some suggestions for future research were suggested to make sure it will be conducted in excellent procedure and get more accurate result. Firstly, the location of the experiment can be done in different setting but with the same condition as it also can test the theory of 4Ps' Creativity in press term to show whether the environment or condition really effect the product of creativity. Besides, increase the population of the researcher's sample and obtaining the data from different university in various states of Malaysia to generalize the data. Besides, it can also test the theory of 4Ps' Creativity that person with different background such as gender, age, and field, have different creativity.

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