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Students' Creative Potential in Higher Educational Institutions: A Case Study in Malaysian Public Universities

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ABSTRACT

The term "creativity" refers to a phenomenon whereby a person creates something new that has some kind of value for other people. This study aims to examine the creative potentiality among both undergraduate and postgraduate students in higher educational institutions. To this end, a questionnaire survey was stratified randomly administered to 490 students in four Malaysian public universities namely University of Malaya (UM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM) and Universiti Teknologi Malaysia (UTM). The required primary data was collected within two months from October until November 2011. The main findings of the study showed that, firstly, most of the students stated that universities attempt to improve creative potential among students and, secondly, the role of knowledge sharing, creative environment and technology environment, curriculum of the study, team work and level of rock logic are very effective in improving creative potential. Thirdly, the finding demonstrated that the level of creative potential is satisfactory in these four Malaysian public universities. It is important for the universities to maintain focusing on creativity and creative potential and try to further increase the creative potential for improving the self-importance.

Key words: Creativity, Creative Potential, Environment, Public University

INTRODUCTION

The world has been changed during these several decades and the process of globalization is regarded as a revolution so that organizations and institutions need to have competitive advantages to survive in this intensive market. In such circumstances, creativity can have a critical role for any organizations. Many researchers insisted that creativity is a complex phenomenon that does not have clear and unique definition, however, Torrance (the father of creativity) indicated that creativity is regarded as "a process of becoming sensitive to a problem, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making

guesses, or formulating hypothesis about these deficiencies; testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results" (Baker, Rudd, & Pomeroy, 2001) .

Many researchers believe that creativity is one of the most complex phenomena and involves the collaboration of different components (see Gardner 1983; (Nichol, 2007); Sternberg, 2001; (Kleiman, 2008; Lubart, Pacteau, Jacquet, & Caroff, 2010) (Amabile, 1996) (Matud, Rodríguez, & Grande, 2007). Wallace (1986) stated that "there is no universal agreement on what creativity actually is" (P. 68). Sternberg (2001) argued that definitions of creativity differ, but they have in common their emphasis on people's ability to produce products that are novel and in high quality

(Munteanu, Costea, & Jinaru, 2010). Gardner (1999) believed that creativity has a main role in people's life when they can solve problems, create products, or raise issues in a domain that is firstly novel but finally accepted in cultural setting. His views seem to support the idea that creativity can take different forms in different domains. Amabile (Amabile, 1996) developed environmental stimulants and categorized them into 8 factors: (1) Freedom: freedom in deciding what to do or how to accomplish the task; a sense of control over one's own work and ideas, (2) Good project management: having a good communication skills, protect the team from outside distractions and interference, set a clear directions, (3) Sufficient resources: access to necessary resources, (4) Encouragement: creating an atmosphere free of threatening evaluation, (5) Sufficient time: time to think creatively, explore different perspectives, (6) Challenge: a sense of challenge, (7) Pressure: a sense of urgency that is internally generated from competition, and (8) Various Organizational Characteristics: considering new ideas, an atmosphere where creativity is prized.

Amabile (Amabile, 1996) also referred to some of the environmental obstacles for creativity. They included constraint (lack of freedom in deciding what to do or how to accomplish the task; a lack of sense of control over one's own ideas), organizational disinterest (a lack of organizational support and interest), poor project management (inability to set the clear directions), evaluation (inappropriate or inequitable evaluation and feedback system; unrealistic expectations), insufficient resources (lack of facilities), time pressure (insufficient time to think creatively), and competition (interpersonal competition within the organization, fostering a self–defensive attitude).

According to Torrance (1962) and Torrance (1990), the memory-oriented educational strategies make lots of challenges for creative education. He emphasized the importance of changing from traditional education to creative programs through appropriate educational strategies (Hosseini & Watt, 2010). The revolution of passive education to creative education needs different changes from different aspects. According to Hosseini (2011) the main principles of such changes are as the following:

 1) Providing the university students with the motivation

 2) Emphasizing learners' involvements in teaching

 3) Attending the practical and functional strategies in teaching

 4) Considering the collective learning in teaching

 5) Encouraging the research and attending the research in the education

 6) Providing the opportunity for thinking, analyzing, criticizing and solving the problems

 7) Offering opportunity for creative thinking

There are some problems and obstacles in order to identify and polish potential of creativity in any higher institutions or universities (Ramachandran, Chong, & Ismail, 2011) .These obstacles need to be overcome. In this research, we will investigate both undergraduate and postgraduate students in four Malaysian public universities namely UM, UKM, UPM and UTM to figure out how to deal with the challenges to improve their creativity. The following challenges can be mentioned in this research:

a) Lack of appropriate environment for creative thinking

b) Lack of New Technology and Sufficient Facilities for Stimulating Creative Potential

c) Lack of Training Programs to Encourage Creative Potential

The general purpose of the study was to examine the creative potential among both undergraduate and postgraduate students in higher educational institutions. The specific objectives of the study are as the following:

•To evaluate the educational environment in four Malaysian public universities namely UM, UKM, UPM, and UTM to figure out how appropriate the environment is and how to improve creative potential among the students,

•To survey the availability of new technology, necessary tools and sufficient facilities in these four universities to stimulate creative potential,

•To propose training programs for Malaysian public universities in order to improve creative potential among the students,

•To identify students' backgrounds in Malaysian public universities and examine their role in developing creative potential among the students.

Based on the above research objectives, the following research questions were posed:

1) Do Malaysian public universities have the conducive factors that can increase the level of creative potential among the students?

2) Do new technologies and sufficient facilities in Malaysian public universities form a necessary tool for stimulating creative potential?

3) Do students' backgrounds in Malaysian public universities play a significant role in developing creative potential among the students?

RESEARCH HYPOTHESIS

The following hypotheses were also tested in this study:

H1: The provided environment in Malaysian public universities or institutions is suitable enough to increase the creative potential among the students in such universities or institutions.

H2: The provided new technologies in Malaysian public universities or institutions are positively contributing to the increase in the level of creative potential among the students in such universities or institutions.

H3: The provided training programs in Malaysian public universities or institutions have contributed to increase the level of creative thinking and creative ideas among the students in such universities or institutions.

H4: The students' backgrounds in Malaysian public universities or institutions have contributed to the increase in the level of creative potential among the students in such universities or institutions.

METHODOLOGY

The creative potential in four Malaysian public universities was studied within two months from October until November 2011. The research design was a cross-sectional survey and aimed to determine creative potential among both undergraduate and postgraduate students in four Malaysian public universities. In total, 490 respondents participated in this study but just 460 of the questionnaires were effectively

accepted. The research is a descriptive study so that socio demographic information is taken as a variable of creative potential beside the other seven indicators namely creative environment, technology environment, curriculum of studies, students' attitude, teamwork, knowledge sharing and level of logic. The survey questionnaire consisted of four sections. The first section dealt with the socio demographic information of the participants in order to determine their background information.

The socio demographic information was related to respondent's age, gender, racial background, current level of education, field and year of study, citizenship and the name of the university in which they were studying. The second section consisted of the items to evaluate creative potential by considering effective factors such as creative environment which was answered by two yes/no questions about related training programs and seminars which are provided by the respective universities.

In the third section, the creative potential was tested by giving 23 questions about 10 independent variables such as creative environment, technological environment, curriculum of the studies, students' attitudes, teamwork activities, knowledge sharing level, and the level of rock logic. The last section includes three open-ended questions regarding the participants' suggestions for improving the level of creative potential inside the universities and the ways for evaluating creative potential and creativity. To achieve the aim of the study, a questionnaire survey was stratified randomly administered to 490 students in four Malaysian public universities namely UM, UKM, UPM and UTM. The required primary data was collected within two months from October until November 2011. As the study was descriptive, frequency, mean, cross tabulation, regression and multi regression were used for data analysis. SPSS software was used to analyze the required data.

Two sets of variables namely dependent and independent variables were used to conduct the current study. The dependent variable was creative potential among the undergraduate and postgraduate students in Malaysian public universities. The independent variables included creative environment, technological environment, and curriculum of the studies, students' attitudes, and level of rock logic, teachers' attitudes, age, gender, teamwork, and knowledge sharing level.

FINDING

Table 1 shows the statistical data of the participants' socio-demographic information. The highest mean and median was for field of study meaning that the current research had covered a wide range of distribution and different fields of studies. On the other hand, the lowest mean and median was for citizenship because most of the participants were local Malaysian students. Furthermore, the variance indicates that in the field of studies and the number of universities, there were more varieties and wider distributions; however, there was just one aspect in citizenship and gender. For instance, in citizenship, there were more local Malay students in comparison with other races. Moreover, the number of female participants was more than male participants.

Table1.Statistical data of the participants' socio-demographic information

		Gender	Age	Racial Background	Current level of education	Field of study	Year of study	Citizenship	University
N	Valid	452	457	450	422	436	439	454	457
	Missing	8	3	10	38	24	21	6	3
	Mean	1.53	1.99	2.09	1.60	3.04	2.00	1.32	2.38
	Median	2.00	2.00	1.00	1.00	3.00	2.00	1.00	2.00
	Mode	2	2	1	1	1	1	1	1
	Std. Dev	0.500	0.677	1.316	0.738	1.837	1.056	0.468	1.108
	Variance	0.250	0.458	1.732	0.545	3.373	1.114	0.219	1.228
%	25	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	2.00	2.00	1.00	1.00	3.00	2.00	1.00	2.00
	75	2.00	2.00	4.00	2.00	5.00	3.00	2.00	3.00

Table 2. Model1[b]

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.668[a]	0.446	0.424	0.680

a. Predictor: (constant), (b).Coefficient,

Table2. provides R^2 that the coefficient of multiple determinations is 0.446; therefore, about 44.6% of the variation in the students' attitudes is explained by other variables including creative environment, technology environment, curriculum of the studies, teamwork activities, knowledge sharing, students' backgrounds, and the level of rock logic. The regression equation appears to be useful for making predictions since the value of R is almost near to 1.

Table 3. ANOVA[b] (F = 20.483, p-value < 0.001)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	132.450	14	9.461	20.483	0.000[a]
	Residual	164.434	356	0.462		
	Total	296.884	370			

a. predictor: (constant)) b. Dependent variable

Since p-value < 0.001≤ 0.05, the null hypothesis will be rejected. At the α = 0.05 level of significance, there exists enough evidence to conclude that at least one of the predictors is useful for predicting creative potential so that the following first three hypotheses will be accepted:

H1: The provided environment in Malaysian public universities or institutions is suitable enough to increase the creative potential among the students in such universities or institutions.

H2: The provided new technologies in Malaysian public universities or institutions are positively contributing to the increase in the level of creative potential among the students in such universities or institutions.

H3: The provided training programs in Malaysian public universities or institutions have contributed to increase the level of creative thinking and creative ideas among the students in such universities or institutions.

According to Munteanu, Costea and Jinaru (2010), creativity training programs had significant effects on creative performance, and especially on divergent thinking. Torrance (1983) explained that males and females perform similarly at the same levels of designed tests. He claimed that girls are largely influenced by their environment and also in comparing with boys, the girls in the age of 13 had higher verbal creative ability than with boys at the same age.

DISCUSSION AND CONCLUSION

In this study, the creative potential in four Malaysian public universities namely UM, UKM, UPM and UTM was measured by using a questionnaire survey. For the measuring purpose, seven factors including socio-demographic, creative environment, technology environment, curriculum of the studies, students' attitudes, teamwork activities, knowledge sharing, and level of rock logic were measured.

Table 4. Model Summary 2

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.635ᵃ	0.403	0.394	0.711

(a) Predictor : (constant))

The findings showed that there were no correlations between creative potential and all socio- demographic factors such as gender, university and teamwork activities. On the other hand, the findings indicated that there were very strong correlations between creative potential and creative environment, technology environment, knowledge sharing and curriculum of the studies. It was also concluded that knowledge sharing has the highest effect on creative potential among the students, and teamwork activities and level of logic have the lowest effects. Creative environment, technology environment and curriculum of the studies have the same effect. After evaluating creative potential in four Malaysian public universities, it was found out that the creative potential by itself and all seven factors of creative environment, technology environment, curriculum of the studies, students' attitudes, knowledge sharing, teamwork activities and level of rock logic are in suitable circumstances.

Moreover, universities try to encourage students for being more creative and they attempt to provide enough facilities to improve students' creativity. Although the results of the study support our hypotheses, we need to keep in mind that creative potential needs to be given more attention by the universities especially towards the female students. This study recommends that universities need to adopt the most appropriate strategies that can improve students' creative potential. They can provide special training programs to improve students' creativity. They can utilize up-to-date teaching methods instead of traditional methods and make their classes more students-centered. Furthermore, they can try to make a balance between male and female students' attention and give more opportunities to both genders to improve their creative potential. They can also have special clubs or workshops on creativity for the students. Universities need to give constant attention to new technologies as a tool that can accelerate creativity and creative potential. The findings of this study are based upon the data obtained from both undergraduate and graduate students in four Malaysian public universities namely UM, UKM, UPM and UTM; therefore, there existed some challenges and limitations. The first limitation was that the study was conducted within two months so that there is a need to do longitudinal studies regarding creativity and creative potential. The second limitation was that foreign students did not give good cooperation to fill up the survey questionnaires. The third limitation was that this study just examined creative potential in four Malaysian public universities so this study can be replicated with a wider range of public and private universities. Furthermore, future studies should account for other variables such as student's personality, classroom atmosphere and E –Learning.

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