

TRANSFORMATION IN MALAYSIAN HIGHER EDUCATION: STUDENTS' UNDERSTANDING OF CREATIVITY IN SOCIAL SCIENCES

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ABSTRACT

Malaysia is undergoing a transformation plan from an industrial-based to a knowledge-based economy in an effort to become a high-income nation by the year 2020. The fact that knowledge is foregrounded means that at the center of the transformation is education, and higher education, inevitably, has to, hand in hand, work with the government policy. In this new transformation plan, higher education in Malaysia has to promote creative and innovative minds. Nonetheless, there exists a gap between the administrative policies at Malaysian public universities and students' own understanding of what creativity is all about. This gap is wider especially in the social sciences since the term innovation is often associated with the hard or pure science. This paper, using qualitative approach, analyzes students' descriptions of creativity in three focus group discussions – male only, male and female and female only groups. The aim is to provide data that can be used by the university with regards to students' understanding of creativity in social sciences. This hopefully will help young social scientists to start thinking about being innovative.

Keywords: Transformation Plan, Creativity, Higher Education, Knowledge-based Economy, Social Sciences

INTRODUCTION

Transformation in Malaysian higher education is part of the strategy in the 11th Malaysia plan (2016-2020) to ensure inclusivity set in international standards and agenda as outlined by the Sustainable Development Goals (SDG) 2030. In December 2012, the Ministry of Higher Education launched a New Education Blueprint to spearhead education towards Vision 2020 and preparing for the 21st century global demands. This narrative of educational evolution finds its latest expression in the National Transformation 2050 or better known as TN50. At the heart of this transformation plan is the people.

As people become the center of the educational plan, that is, by foregrounding knowledge-based economy, inclusivity and equity, understanding what is being done at the higher education institutions is still vital and relevant. According to Grapragasem et al (2014: 87), "a well-designed higher education curriculum should include creativity, innovation, leadership and entrepreneurship". This shows that the

understanding of creativity and what it means to the students in higher education is pivotal in ensuring the success of these plans and strategies.

Malaysia is undergoing a transformation plan from an industrial-based to a knowledge-based economy in an effort to become a high-income nation by the year 2020. The fact that knowledge is foregrounded means that at the center of the transformation is education, and higher education, inevitably, has to, hand in hand, work with the government policy. In this new transformation plan, higher education in Malaysia has to promote creative and innovative minds. Nonetheless, there exists a gap between the administrative policies at Malaysian public universities and students' own understanding of what creativity is all about. This gap is wider especially in the social sciences since the term innovation is often associated with the hard or pure science.

Therefore, the objective of this paper is to illuminate students' understanding of creativity. Using qualitative approach, this paper analyzes students' descriptions of creativity in three focus group discussions – male only, male and female and female only groups. The aim of this paper is to provide data that can be used by the university in promoting creativity across different paradigms. The data will be particularly useful in understanding creativity in the social science context. Furthermore, this hopefully will help young social scientists to start thinking about being creative and innovative.

LITERATURE REVIEW

The right and left brain functions

Human's fascination with the brain is as old as recorded history. Historical evidence has proven that the brain has been one of the important concerns during the Egyptian civilization. Greek philosophers also explore the uniqueness of human brain by trying to differentiate human from the animal. Later, French philosopher such as Rene Descartes' famous formula *Cogito ergo sum* (I think therefore I am) (Mansfield, 2000, p. 14), foregrounds human subjectivity as the center of the universe. Later theories on subjectivity such as the ones by Sigmund Freud, Jacques Lacan, Julia Kristeva, Michel Foucault, Judith Butler and even the postmodern theorists of anti-subjectivity such as Gilles Deleuze and Felix Guattari have, to a certain extent, acknowledged the power of the brain in understanding human self and reality, or the lack of it.

The different theorizations of the human brain are reflected by the changing trend of research into the functions of the human brain itself. According to Christoph von der Malsburg, there are two highly experimented theories of the brain: the Conventional Brain theory, which includes Localization Theory and The Correlation Theory of Brain Function, which modifies the Conventional Theory (1981). Further, theories such as The Split-Brain Theory by Marc Dax and The Triune Brain Theory by Paul Maclean are controversial, but they set an example of how the human brain has been perceived in hard science. Indeed, earlier studies of the brain are mostly done for medical purposes, including for therapy. As an example, in 1961, Roger Sperry who is an American Psychologist won the Nobel Prize for medicine for his contribution to the treatment of epilepsy (Yunos, Yusoff and Mohamad Said, 2012: 6) by working on the different hemispheres of the brain.

Roger Sperry's contribution to the treatment of epilepsy relies on the understanding of the binary opposition of brain functions. This traditional view of the brain function has been commonly debated especially with regards to the belief that the two hemispheres of the brain - left manages the critical, while the right manages the creative functions - are mutually exclusive. The more recent theory of the brain focuses on trying to collapse such binary. For instance, Ned Hermann introduces a model of the brain technology known as Hermann Brain Dominance Instrument or HBDI (Yunos, Yusoff and Mohamad Said, 2012:10). The theory postulates that there are four quadrants of a brain – top left, bottom left, top right and bottom right. Hence, Yunos et al (ibid.) suggests that for a person to maximize the brainpower, he or she needs to train all the four quadrants.

Meanwhile, according to Cooper (2016), there are three areas in our brain that are used for creative thinking; namely the Attentional Control Network, The Imagination Network and the Attentional Flexibility Network. The Attentional Control Network is the area which helps us with laser focus on a particular task. This is the region of the brain that we activate when we need to concentrate on complicated problems or pay attention to a task like reading or listening to a talk. The Imagination Network is; on the other hand, a network that focuses on imagining future scenarios and remembering things that happened in the past. This network is able to assist us to construct mental images when we are engaged in these activities. The last area is the Attentional Flexibility Network where it has the important role of monitoring what is going on around us, besides what is happening inside our brains. This network also has the function of switching between the Imagination Network and Attentional Control Network.

Despite new theorizations of brain functions, what has been agreed is that brain activities are observable, both in medical or scientific experimentations as well as in social activities and experiences. By the same token, even though the left and right hemispheres of the brain are no longer theorized as mutually exclusive, the common understanding is that the specific function or ability dominated by each hemisphere of the brain can be trained and polished. This means that an individual can now be trained to utilize and master not only one side of the hemisphere of the brain but both of them. This results in our understanding that one can be both critical and creative at the same time if one's brain is fully trained.

Creativity in Malaysian public university

Creativity has been a major part of education discourse worldwide; indeed, its position has been rejuvenated in the context of globalization and new economic situations. Lee (2005) charts the evolution of higher education in Malaysia for education for elites to education for global competition. With the emphasis on Knowledge-based economy, creativity is once again taking center stage. For instance, the Malaysian Government Transformation Plan (GTP) puts emphasis on the need for a new public service culture that foregrounds performance at the core of its public service. Rather than offering a fixed definition of creativity, this section will explore some contemporary discussions on creativity and then locate it within the innovative efforts by the Malaysian Ministry of Higher Education.

In the West, the traditional meaning of creativity is originally associated with the divine creation. Hence, creativity is etymologically derivative of the word creation itself. Negus and Pickering (2004:2) indeed argue that this association finds further

expression in the light of “new humanist emphasis” during modern time, culminating in the transfer of emphasis from the divine to the mundane creation. Essentially, this transfer also means that the understanding of creativity as merely God’s ability has shifted within secular paradigm to include lived experience of mere mortals. In effect, creativity is roughly seen as the ability to produce and oftentimes is linked to art and craft.

For that reason, contemporary scholars in creativity such as Gauntlett (2011) prefer to use the term creativity in the context of “everyday creativity”, foregrounding the idea that creativity is now seen as a social process. This is a move away from the more traditional conception of creativity especially as advocated by Mihaly Csikszentmihalyi that apotheosizes high-impact creativity (in Gauntlett, 2011:14-15). Nonetheless, as Gauntlett follows Csikszentmihalyi’s effort to find the social meaning of creativity, it can be said that the more contemporary trend in creativity study attempts to look at creativity as a process and a network of human experience. This is a far cry from the traditional conception that puts a lot of emphasis on the notion of creativity as an aesthetic expression, linking it to the notion of taste, which inevitably harks back to “one’s class, cultural background, education, and other aspects of identity” (Sturken & Cartwright, 2009:56).

The need to foreground creativity in Malaysia started formally around the year 2000. In 2004, the Ministry of Education introduced *Bestari* School (Intelligent School) that focused on the use of Information Communication Technology (ICT) both in teaching and learning as well as in the administration of the schools (www.moe.edu.my/btp/). This becomes a template for further innovative projects within the ministry. Then it is taken up by the Ministry of Higher Education, Malaysia, who undeniably plays a crucial role in facilitating and expediting Malaysian Government Transformation Plan (GTP), especially now it has completed the second phase or better known as GTP2.0 and moving towards TN50.

Many public universities in Malaysia have incorporated creative and critical thinking courses in their syllabus. In Universiti Sains Malaysia, the only Apex university in Malaysia, a course called Thinking Skill (*Teknik Berfikir*) has been introduced to students to teach them on the different ways of thinking, including creative thinking. In Universiti Kebangsaan Malaysia, a few courses on creative and critical thinking courses have been offered by Pusat Citra university that provides services for the whole of the university regardless of the faculty. Creative thinking is a crucial element of these courses that try to inculcate creativity in students’ daily activities. These courses are abetting GTP in the sense that they encourage students to think beyond seeking employment in the public sector only.

The knowledge-based economy

It is important to study the relations between creativity and the knowledge-based economy. There are various interpretations to the understanding of the knowledge-based economy. The varied definitions provide a problem with measuring the implementation and success of this new concept. The Organisation for Economic Council Development (1996, 7) defined it as “economies which are directly based on the production, distribution and use of knowledge and information”. This general information covers too wide of an area. A specific framework of understanding is required as different countries around the world may have their own interpretation of what knowledge-based economy is.

Powell and Snellman (2004) define knowledge economy as “production and services based on knowledge intensive activities that contribute to an accelerated pace of technological and scientific advance as well as equally rapid obsolescence” (201). The focus on the intellectual capabilities far outweighs the need for natural resources. There is a stronger need for involvements and improvements in every stage of the production process, from research and development all the way to customer service. Powell and Snellman (2004) emphasize the importance of measuring knowledge-based economy. They state that there are two clear divisions of the knowledge economy. First is the stock of knowledge and secondly, the focus on activities such as research and development, training, educational reform and others. It is important to understand how these two elements relate with one another and to what extent are they affecting the outcome of the other.

Kefala states that “a knowledge of economy is one where organizations and people acquire, create, disseminate and use knowledge more effectively for greater economic and social development” (2010, 160). She states that the focus of the economy changes from natural resources to the development of human capital that is creative, innovative and competitive. Human capital is the mover of the economy. Knowledge creates value and becomes an important essence to the progress of the country. Developing countries like Malaysia are required to plan and strategize the focus of the country. To realize this vision it requires major transformations in various institutions and industries.

The Knowledge-based Economy Master Plan of Malaysia defines knowledge-based economy as “an economy in which knowledge, creativity and innovation play[s] an ever-increasing and important role in generating and sustaining growth” (2013:3). It also states that a high percentage of the Gross Domestic Product comes from the knowledge-based industries such as science and technology, education and financial services. Among the characteristics of a knowledge-based economy include higher spending on research and development, increased number of university and higher education graduates, higher literacy rate, higher penetration of ICT and greater use of the Internet. Some of the reasons why Malaysia needs to adapt a knowledge-based economy are because there has been an increase in foreign competition, Malaysia’s competitiveness level has dropped, there is a need to find new sources towards growth and development and the need to fully utilize productivity.

Shapira et al (2006) state that the Malaysian economy has itself transformed from being an agricultural and mining economy to an industrialized economy in the 1980s. The transformation has stimulated the Malaysian economy and categorized Malaysia as one of the new rising Asian economies. Today, Malaysia is further transforming itself to remain competitive and towards further growth, focusing on the knowledge-based economy. With the positive move towards knowledge-based, the government has launched various programs of development in various industries such as science and technology, human resources and education sectors. With the focus on science and technology, various steps were taken to enhance human resources to prepare knowledge workers in this field. The education sector has also prepared students to be more focused towards the discipline and thus there has been an increase in intake for engineering, technical and science courses.

The establishment of Multimedia Super Corridor (MSC) Malaysia is among the pioneer move by the government towards a knowledge-based economy. MSC is established to attract foreign technology-based corporations to invest in Malaysia and groom local companies. It is a gateway to the IT industry in Malaysia. Organizations that set up their businesses within the MSC Malaysia area are given incentives,

benefits and privileges by the government of Malaysia in the form of a bill of guarantees. Among the content of the bill of guarantees include the provision of a world-class physical and information structures, ensuring no censorship of the Internet, providing competitive financial incentives and tax allowances and allowing unrestricted employment of local and foreign knowledge workers. This will create a dynamic scenario towards the development of science and technology and eventually a knowledge-based economy.

Though Malaysia looks well prepared to transform into a knowledge-based economy, there are still problems with the implementation. A study by Islam and Cheng (2008) indicates that there is a need to increase the number of graduates at the universities. Currently, the high level academic institutions are not producing enough knowledge workers to meet the demand especially from the area of science and technology. Fortunately, there has been an increase in collaborative work between universities and industries with the Ministry of Education as the mediator to produce a workforce that is able to perform. There should be more focus towards creative thinking and industry-related programs. Rahmah et al (2008) suggest that there should be a strong emphasis on lifelong learning. Workers should be encouraged to attend more trainings and further their studies. Employers should also provide a good working environment to motivate their staff to become good knowledge workers.

All the programs and infrastructures developed by the government have actually been focusing towards transforming Malaysia into a developed nation. Part of being a developed nation is creating a knowledge-based economy. There has been a strong emphasis on human capital and the need to build a new generation that is creative, innovative, knowledgeable and able to compete as a global player. The education sector has become one of the key players and among the significant contributors towards realizing this vision.

METHOD

This paper uses data from a qualitative research. This section explains the sample, procedure and a brief analysis of data. The data from the focus group discussion is arranged thematically.

Sample

There are 41 respondents involved in this study consisting of 10 males and 31 females. They are second year undergraduate students taking Media Global course, which is a compulsory subject in their field of study. These respondents are from the School of Media and Communication Studies, Universiti Kebangsaan Malaysia. The age range of the respondents is 20 to 24 years old. They come from different ethnic backgrounds namely Malay, Chinese, Indian and others.

Procedure:

First, a short test was conducted on these respondents to identify their tendencies, which is either creative or critical. The test was mainly to identify their left and right brain tendencies. There were five questions to gauge each side of the brain, and the test was administered in the classroom for an hour. The test questions were selected

from a book entitled *Lateral Thinking* (2011). Then, test results were tabulated to identify respondents' tendencies.

The second stage of the research involved a series of workshops, to be precise, a-three day workshop. The first workshop was conducted to introduce respondents to creative advertising as well as to guide them in forming a mock company and discuss their projects in small groups. A lecture was given with the objective to ensure respondents' understanding of different forms of advertising, to enable respondents to be able to explain a few functions of advertising in the global media and to enable the respondents to create the mission and vision of a company.

In the second workshop, a lecture on language and advertisement was delivered. In addition, a discussion on cross-cultural considerations was also incorporated before the respondents started preparing their advertisements. Then they were divided into small groups and required to construct an advertisement and a brand tagline using the input given earlier. The objectives of this workshop were to ensure that the respondents understand the need to use accurate language, and to use it creatively. They were also expected to be able to include the cultural aspect in advertising. The final aim was for respondents to produce an advertisement using accurate language.

The final workshop was on media production and technology. The aim of this workshop was to guide respondents on how to use technical facilities for the presentation of their advertisement. Eventually the respondents had to present their innovation, that is, their own product, their advertising strategies and their advertisement.

In addition to the test and workshops, respondents were also required to be involved in focus-group discussions to gather input from them about their understanding of creativity. The respondents were grouped into 'all boys group', 'all girls group' and 'a mixed group'. There were between 5-8 respondents in each group. The setting was casual discussion sessions to ensure that respondents were comfortable and free to express their opinion. Each focus group had a moderator who asked questions and monitored the discussion flow. Some of the questions asked were the respondents' understanding of the terms 'creativity' and 'critical', their definitions of the terms, their understanding of the differences between the two terms, their knowledge whether creativity can be taught or not, their opinions whether Malaysians are creative in general, and their suggestions on how to teach the future generation to be creative. The moderators were the researchers in this group themselves.

Each discussion lasted for approximately one hour and it was recorded to ensure none of the contribution by the respondents was left out. Then the data was gathered and analyzed. Only pertinent and relevant data gathered from the focus group discussions was discussed in this paper.

FINDINGS AND DISCUSSION

The data gathered from the research is presented as the following:

1. Lateral thinking test scores

2. Focus-group discussion

Table 1 Results of the lateral thinking test scores

<i>MALE</i>		<i>FEMALE</i>		<i>Overall (Pass)</i>	
<i>Left Brain</i>	<i>Right Brain</i>	<i>Left Brain</i>	<i>Right Brain</i>	<i>Male</i>	<i>Female</i>
10 %	100 %	30%	74%	3% (3 out of 10 respondents)	29% (9 out of 31 respondents)

The passing mark for this test is 50%. Overall, three out of ten (3/10) male respondents passed the lateral thinking test. This means the respondents had scores of 50% or more. Thus, the percentage of male respondents who passed the test was 30%. However, the number of female respondents who passed the lateral thinking test was nine out of 31. Therefore, the percentage of female respondents who had passed was 29%. All the ten male respondents passed the right brain test (100%) while the number of female respondents who passed the test was 23 out of 31 respondents.

This contributed to the percentage of 74%. However, only one out of ten male respondents passed the left brain test (10%). Interestingly, only one female student passed the test as well. Thus, the percentage of female student who passed the left brain test was 3.2%.

Both male and female respondents scored higher for the right brain test compared to the left brain test: which is 100% compared to 10% for male respondents and 74.2% compared to 3.2% for female respondents. In sum, this test reveals that the respondents are more critical than creative.

Focus-group discussion

Parameter of Creativity

In the Focus Group Discussion, the respondents mentioned that they had encountered the terms ‘creativity’ or ‘innovation’ from the mass media like newspapers, television and the Internet. One of the respondents said that he came across the word after watching a youth program on television in which the participants of the program were encouraged to be creative and innovative. In relation to the Internet, the word creativity often appeared when they linked products on promotions, such as laptops and gadgets.

Apart from the media, the respondents stated that the word creativity had been a buzzword in classes at the university. Indeed, a few respondents mentioned that creativity was a commonly used word in their CESMED class. CESMED is a Centre of Excellence in UKM that combines education, entrepreneurship and the development of small and medium enterprises. A course has been introduced by the centre and it has been made compulsory for all university students to educate these young minds to become entrepreneurs. Other than a course in CESMED, the respondents also indicated that they had learned the word ‘creativity’ in their Media Global course. One student mentioned that he had seen the word appearing many times in community service announcements. Another one said that the word was often heard in the Prime Minister’s speech that always promotes creativity and

innovation. In conclusion, the word creativity was not alien to the respondents and they had come across the word frequently in their daily lives.

There were many responses given by the respondents when asked to define the meaning of 'creativity'. Some of the definitions were 'extraordinary imagination', 'we do something that is different from other people, like a product', 'use something already available to produce something new', 'a thinking where we think out of the box', 'something unique that we do, different from others', 'creativity is like our ability to do something out of the box', 'something extraordinary that we do', 'to improve what we already have', 'form an idea from something different', 'an element no others can think about that we do', 'something that we can do better than others', 'our ability to process an idea into something extraordinary', 'creativity is doing something different from others' and 'creativity is our creative to do something'. All the definitions provided by the respondents match the definition of 'creativity' given by MacMillan English Dictionary (2002), which is 'involving a lot of imagination and new ideas'.

Creative Activities

During the focus group discussions, the respondents were also asked to share some of the activities that they considered required creative thinking. One student explained that by joining a music band, one was exposed to creative environment. Another student mentioned that after joining a photography class, he was allowed to explore his creativity in taking good photographs. Furthermore, another student thought that he was creative as he always spent some time to plan an attack in his favourite sports, which was football. Another student mentioned that his involvement in theatre was an avenue for him to be creative. He confidently said that he became creative after he had immersed himself in his acting roles. To him, people involved in performance arts are always creative.

The respondents claimed that they were also involved in creative activities in their classes at the university. In the course entitled Broadcasting Journalism, respondents were given the opportunity to show their creativity in making short films. Another subject was Media Global whereby the respondents had to act and sing during their class presentations. These had provided them the chance to show their creativity. One student mentioned that she was involved in an activity where she had to promote and publicize the activity. She was forced to think creatively to do the task.

Some respondents suggest that psychomotor activities should be introduced in classes as these will train respondents' mind to be more creative and balanced. According to the respondents, through reading activities, respondents could also train their left and right brain to be creative. In short, the observation that can be made through this focus group discussion is that all these respondents have high self-confidence and trust in their own judgment and thus, can be considered as creative thinkers. However this observation is contradictory to what the test result has revealed in Table 1.

The respondents were also asked whether they had been given enough space and freedom to be creative in Malaysia. All respondents of the FGD seemed to agree that the freedom to be creative was provided and available for them in Malaysia. One example given was in the film industry whereby the film producers were allowed to produce films freely, though subject to certain restrictions on images of violence, sex and horror. For instance, the respondents claimed that there had been uncensored

depictions of ghosts in the Malay films and these kinds of films had gained popularity in the industry. Another student gave an example of creativity in the field of education. To him, Malaysian respondents, be it at the school or university level were required to be creative in doing their assignments or projects. He believed that freedom to access the Internet to look for sources in completing their tasks also required creativity. However, this group of respondents thought that Malaysians in general can be overly creative. An example given was that of the notorious Namewee, a Malaysian student studying overseas who had offended many Malaysians when he changed the lyrics and melody of the national Anthem, *Negaraku*. They strongly believe that there is a need to consider ethical issues even though they are given the freedom to be creative.

Learning and Teaching Creativity

Can creativity be taught? This is the next question posed during the focus-group discussions. One student started the conversation by saying 'creativity cannot be taught as it follows what is in one's mind'. A student said that she was very happy with most of the things taught in class when she was young but none of her teachers taught her how to be creative.

The others are against her idea by saying that creativity can be taught, although not directly. One reason given is they have already been given the freedom to be creative since they were at the elementary level. According to one student, 'creativity comes automatically when something is taught to them'. The student cited an example that was, when respondents were asked to draw a picture of a cow in their art classes during primary school, each student would draw the animal differently, depending on one's creativity.

Nevertheless, most of the respondents felt that academic subjects on creativity or innovation should be expanded in schools and universities as being creative was useful for them. Being creative, according to them, would also help to provide more exposure and increase their confidence level. For them, the skill of being creative is a life-long learning skill; hence it should be made a compulsory subject for all respondents. However, the respondents felt that the modules especially at the university level should be made more interesting, practical, friendly and flexible. Another student believed that Malaysians in general should be more creative and the government should produce creative citizens in all aspects of life to represent them better and to compete internationally. Therefore it is important to nurture young children with creative skills. If the children are given an early exposure to creative activities, they can expand this skill and apply it when they join a workplace.

In summary, most respondents (97.5%) believe that creativity can be taught or learned directly or indirectly. Some people may be born with a more creative tendency than others, but some may have to learn to be creative. Whether it is in writing, music, art or language, the skill of being creative can be acquired and practiced and will flourish if given the opportunity and the right environment.

Experiencing Creativity

Another question asked during the focus group discussions concerns the respondents own reflection of their creative tendencies. The respondents were asked if they consider themselves as being creative or critical. There were 39% of the respondents involved in the focus group discussions who felt that they were creative while the

other 61% thought they were more critical than creative. Those who thought they were creative reasoned out that they were more inclined towards arts and imagination. One student claimed that his thinking was more abstract and subjective than that of most of his friends'. That is why he thought that he was creative. Some respondents, however regarded themselves as being critical. One student claimed that he liked to challenge his mind whenever he thinks. This was especially so when negative thoughts disturbed him. He would then try to counter the negative thoughts by trying to think positively.

In short it can be said that some respondents have certain ideas about their mental tendencies. Their reasons were based on how they perceived life and how they overcame challenges. Despite that the word creativity was common in their life, most of them thought that they were more critical than creative. Creativity, as the respondents observe was something they could learn and experience in daily lives and not limited to classroom setting only.

CONCLUSION

Creativity is central in Malaysian's government effort to foreground knowledge in its pursue of global competitiveness. Several transformation plans have been conducted to ensure that the education sector is not left behind in churning out creative individuals who can contribute towards the knowledge-based economy. This study, importantly, reveals that the term creativity is not an alien concept among the subjects. Most respondents also believed that creativity can be taught and learned.

Our data reveals that the respondents are more critical than creative. This is very interesting as the correlation made between the test results with respondents' perception of themselves reflects this similarity. In terms of the application of this research result, courses offered on creativity should understand the different parameters of creativity while incorporating critical skills.

REFERENCES

- Anonymous. (2011). *Lateral Thinking*. Arcturus Publishing Limited, London
- Christoph von der Malsburg, (1981). *The Correlation Theory of Brain Function*. Springer.
- Cooper Gauntlett, D. (2011). *Making is Connecting*. Cambridge, UK: Polity
- Grapragasem, S., Krishnan, A. & Azlin Norhaini Mansor (2014). Current Trends in Malaysian Higher Education and the Effect on Education Policy and Practice: An Overview. *International Journal of Higher Education*, 3 (1), 85-93
- Islam, M & Cheng, E. (2008). The Readiness of Higher Education Institutions (HEIs) towards Knowledge-based Economy in Malaysia. *International Review of Business Research Papers*, 4(2), 103-115

- Knowledge-Based Economy Master Plan*. www.epu.gov.my, accessed on 14 March 2013
- Kefela, G. (2010). Knowledge-based Economy and Society has Become a Vital Commodity to Countries. *International NGO Journal*, 5(7), 160-166
- Lee, M. (2005). Global Trends, National Policies and Institutional Responses: Restructuring Higher Education in Malaysia. *Educational Research for Policy and Practice*. 31-46. <http://dx.doi.org/10.1007/s10671-004-6034-y>
- MacMillan English Dictionary for Advanced Learners (2002). International Student Edition.
- Mansfield, N. (2000). *Subjectivity: Theories of the Self from Freud to Haraway*. New South Wales: Allen & Unwin.
- National Higher Education Strategic Plan (NHESP)*.
<http://www.mohe.gov.my/portal/en/info/psptn.html>, accessed on 17 March 2013
- Negus, K & Pickering, M. (2004). *Creativity, Communication and Cultural Value*. London: Sage Publication
- Nor Fatimah Che Sulaiman, Suriyani Muhamad & Nur Azura Sanusi (2012). Innovative Capacity, Human Capital and its Contribution to Economic Development in Malaysia. *World Journal of Social Sciences*, 2(6), 218-230
- Organisation for Economic Co-operation and Development (1996)*.
<http://www.oecd.org/science/sci-tech/1913021.pdf>, accessed on 17 March 2013.
- Powell, W., & Snellman, K. (2004). The Knowledge Economy. *Annual Review Sociology*, 30, 199-220
- Rahmah Ismail, Abd Hair Awang & Liew Chei Siang (2008). Determinants of Workers' Competitiveness in Malaysian Information and Communication Technology Sector. *The Journal of Global Business Management*, 4(2), 104-112
- Shapira, P., Youtie, J., Yogeessvaran, K., & Jaafar, Z. (2006). Knowledge Economy Measurement: Methods, Results and Insights from the Malaysian Knowledge Content Study. *Research Policy*, 35(10), 1522-1537
- Sturken, M. & Cartwright, L. (2009). *Practices of Looking: An Introduction to Visual Culture*. Oxford: Oxford U.P.
- The Official Multimedia Super Corridor website*. <http://www.mscomalaysia.my>., accessed on 18 March 2013.

The Official Pemandu website. <http://www.pemandu.gov.my/> , accessed on 18 March 2013

Von der Malsburg, C. (1981). *Internal Report 81-2*. Department of Neurobiology, Max-Planck-Institute for Biophysical Chemistry. Göttingen: Germany. (Cogprints.org/1380/1/vdM_Correlation.Pdf), accessed on 26 March, 2013)

Yunos, Nasaruddin, Yussof, Abdul Salam & Mohamad Said, Mohamad Mohsin. 2012. *Menjana Pemikiran Kreatif & Kritis*. Kuala Lumpur: Utusan Publications & Distributors Sdn. Bhd.

<https://blog.bufferapp.com/how-to-produce-more-great-ideas-according-to-science>, accessed on 22 March, 2016 (Cooper, B. B.)

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