

A Study on the Relationship between Creativity and Innovation in Teaching and Learning Methods towards Students Academic Performance at Private Higher Education Institution, Malaysia

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Abstract

Education is an engine for growth and progress for any society and nation. Many challenges faced by 21st century education despite the implementation of many teaching and learning approaches. In the pre- technology education context, most teachers use teacher - centered learning method. There are many studies which shows that traditional method no more relevant to the current younger generations and many higher Education Institution moving forward by applying creativity and innovation in their teaching and learning activities. This paper attempts to investigate the relationship between creativity and innovation in teaching and learning activities towards students academic performance in private higher education institutions. Information has been collected through surveys, depth interviews, observations with teachers or educators and together with secondary data (library research) were analyzed using SPSS. The studies found that creative and innovative teaching methods makes a particular concept clear to the students, students develop interest to know exactly the concept, creates long lasting memory / correlation of a concept and there is positive relationship with creativity, innovation with student academic performance using various teaching methods. Through this study, the reasearcher have proposed few ways which could be used applied by teachers / educators in private higher education institutions in effort to educate students using student centered learning instead of traditional teaching method to ensure students' improve in academic performnce .

Introduction

Education is an engine for the growth and progress for any society and nation. Many challenges faced by 21st century education despite the implementation of many teaching and learning approaches. We can see that the profile of our learners has changed. Chen, 2010 described that digital natives weaned on video games and Wed 2.0, and have been described as "matching through our schools, carrying a transformational change in their pockets in the form of powerful multimedia handheld devices". The 21st century, according to Pink (2005), will be dominated by a different way of knowing, being and doing, and right – brain capacities will come increasingly to the core. In the pre-technology education context, most teachers use

teacher – centered learning method. At the same time, there are many studies which show that traditional method no more relevant to the current younger generations.

Recent educational changes in various countries have associated pedagogical innovations with cross-curricular competencies, such as social and communicative skills, meta-cognitive skills, reasoning and creative thinking (Kohler, Boissonnade & Giglio, 2015). In order to meet the current expectations educators therefore need to depart from ideas and pedagogies of yesterday and become bold advocates to develop the sorts of leaning dispositions needed for our learners and their work future (Kwek, S.H, 2011).

Nowadays, many higher education institutions was moving forward by applying creativity and innovation in their teaching and learning activities. Creativity is the ability to make or bring to existence something new, whether a new solution to a problem, a new method or device or a new artistic object or form (Olatoye, Akintunde and Ogunsanya, 2010). Creativity and innovation can create design thinking which is an approach to learning that focuses on developing students creative, confidence through hand-on projects that focus on empathy, promoting a bias toward action, encouraging indention and fostering active problem- solving skills and competencies. Thus, through the implementation of creative and innovation in the teaching and learning curriculum, educators can help students to develop a skill set that includes ideas generally not fostered within traditional setting and at the same time can improve their academic performance.

Therefore, this study attempts to investigate the relationship between creativity and innovation towards student’s academic performance in private higher education institutions. In addition, via this study the researchers have proposed few ways which could be used by teachers / educators in private higher education institutions in effort to educate students using leaning centered approach instead of traditional teaching method.

Creativity and Innovation in Education

Creativity is an ability to make or bring to existence something new, whether a new solution to a problem, a new method or device or a new artistic object or form (Olatoye, Akintunde & Ogunsanya, 2010). According to Pennick, 1992 creativity is a process of becoming sensitive to problems, disharmonies, as well as identifying, searching for solutions, making guesses or formulation of hypothesis, and possibly modifying and restating them, and experimenting to find results and finally communicating the results.

Runco (2007), creativity is a uniquely human trait that reflects our ability to adapt to changing circumstances, and our effective cognitive abilities to combine and improve upon idea to which we are exposed.

Besides that, creativity also produces actionable ideas, new concepts, new designs and new opportunities while innovation adds values to the new products (Olatoye, Akintunde &

Ogunsanya, 2010). Adding to this point, Akinboye, 2003 said that without creativity, a person is not to access the fullness of information and resources available but is locked up in old habits, structures, patterns, concepts and perceptions. As the society becomes more complex, there is a gradual increase in the awareness that yesterday's methods do not effectively solve contemporary problems of the society (Akinboye, 1955 in Olatoye etc 2010) and this is why innovation and creativity are needed in nearly all the facets of the society.

Creativity also refers to a psychological process, related to play, imagination, fantasy, feelings and emotions, meaning making and the use of symbols (Vygotsky, 1925/1971; Joh-Steiner et al., 2010).

Innovation can be defined as new ideas, products or practices by an individual or group within a specific social system (Rogers & Shoemaker, 1971 cited by Kohler, Boissonnade & Giglio, 2015). Creativity in curriculum is a carefully planned, thematic approach to teaching and learning designed to support student's natural curiosity and stimulate their creativity. The curriculum is students or learners centered and have an emphasis on skills. Besides that, creative teaching means "teaching using imaginative approaches to make leaning more interesting, exciting and effective. This is a necessary part of all good teaching".

In education, it seems student creativity varies from country to country. Palaniappan (2009), he has compared creativity levels of Malaysian and American students. He reported that American students are significantly superior to their Malaysian counterparts in general creativity as well as in its components, namely fluency, flexibility, originality and elaboration (Olatoye, Akintunde & Ogunsanya, 2010). In addition, creative activities lead to innovation while creativity is the art of producing new ideas, approach or action, innovation is the process of both generating and applying such creative ideas and converting them into novel, useful and viable products, services and business practices. Besides that, according to Trilling and Faded (2009), to be an effective in this new paradigm requires a move from teacher instruction requires a move from teacher-directed to student – centered learning, from direct teacher instruction to interactive exchange with and among students, from teaching context knowledge to equipping students with the relevant skills, and from teaching basic contents to problem solving processes (Kivunja, C.2014). It calls for a move away from time- slotted schedules to completion of tasks on – demand, from teaching that applies a one-size-fits-all approach to all students to one that provides personalized scaffolding for learners, from competitive learning to collaborative learning, from classroom tied contexts to foot-loose global learning networks, from textbook-based data to web-based sources, from summative to formative assessment of students' performance, and from learning at school to learning throughout life (Kivinja,2014).

According to Tulbure (2012), effective teaching requires flexibility, creativity and responsibility in order to provide an instructional environment able to respond to the learner's individual needs (Fayombo, 2015) and the attainment of good academic achievement and educational outcomes (Fayombo, 2015). Moreover, he also mentioned that most students learn best when

the style of presentation is aligned with their preferred leaning style and it is important for teacher to understand the students' styles. By doing this, teachers many gain insights into ways of making academic information more accessible to diverse groups of learners and an increased awareness of individual learning styles can help educators import new information in a memorable way (Brady, 2013 cited by Fayombo, 2015).

Besides that, former US President Bill Clinton said the knowledge-based economy is "science and technology as fuel, innovation as power" (Je Lee, 2011). Creativity is the creative flame of innovation and the creativity education has become the essence of future education (Je Lee, 2011). In nutshell, when challenged by global competition, innovation is an assurance to enhance competitiveness and creativity / innovation can be greatly cultivated through education (Je Lee, 2011).

In addition, Jan 2002, Taiwan's Ministry of Education published The White Paper on Creativity Education with a 'nation of creativity' as a vision. With this, it defined the role of creativity in educational reform as making an all-out effort to promote creativity education as the focus of educational reform in the future. Therefore, to enable students to be creative, teaching must be innovative and creative so as to improve the learner's innovative capability.

Bruce, R (1989), leaning occurs in the interaction between the learners and the learning environment; when the appropriate strategies and skills are applied to technology use, making it a favorable tool for teaching , then better teaching effectiveness can be developed. Apart from that, Wu (2002), also pointed out that teaching innovation (during the teaching process) is when teachers use multi-faceted and likely teaching methods, and diversified and rich content to stimulate student' inner interest in learning, thus, developing positive student attitudes toward proactive learning and enhancing students' learning ability.

Hereby, teaching innovation and creativity can be separated into two secondary dimensions and their operational definitions can be explained as follows:

- (a) Innovation of teaching methods: means teachers using new and meaningful methods, for example, the application of cloud technology, conducting online education, or the use of an electronic whiteboard to solve teaching problems and being whiteboard to solve teaching problems and being.
- (b) Innovation of course design: means to implement innovative course design that inspires students to integrate knowledge with a practical, flexible innovative ability, enabling them to make a more substantial contribution to the relevant areas in the future.

According to Chen 2010), teaching innovation means teachers having creativity and showing vivid and likely teaching method to make students interested in learning, thus enhancing the teaching effectiveness (Je Lee, 2011).

There are several reasons for teaching innovation for students.

1. Developing student capabilities for independent analysis, thinking and judgment;
2. Stimulating student interest and motivation for learning;
3. Tapping student potential in creativity and problem solving; and
4. Enhancing students' learning ability

Whereas the purposes of teaching innovation for teachers are:

1. Enhancing teaching quality and effectiveness;
2. Having rich and diverse teaching content and methods;
3. Having a diversified student assessment; and
4. Achieving educational goals and ideas,
(Wu, C.S.2002, Chiu, C.W.2000; Chang, C.C.2008).

Research Objective

The purpose of this article is to investigate the relationship between creativity and innovation in teaching methods has connection with student's academic performance. Discussion also focuses to identify the implications of creativity and innovation in teaching methods or approach at tertiary education level. This study is also trying to make an attempt to recommend way how teachers can apply the creativity method and curriculum.

Research Questions

Following are the research question for this study:

1. What is the relationship between creativity and innovation in teaching method with students' academic performance / achievements?
2. What are the contributions of creativity and innovation in curriculum and teaching method to the students and for the nation?
3. What are the ways or action can be taken or implement in order to incorporate the elements of creativity and innovation in curriculum and teaching method in private universities.

Method of Research

Sampling Methods

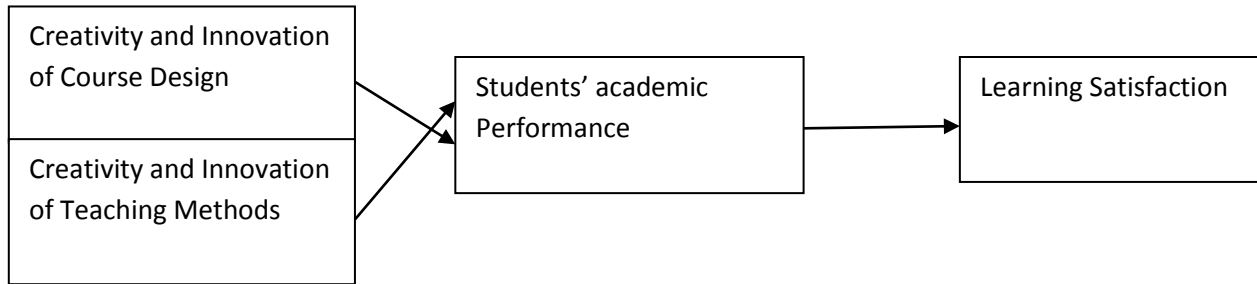
This study used convenience sampling to target educators at tertiary level in a private colleges and universities around the Klang Valley namely AMU, CUCMS, UTAR, UNITAR and UCSI. About 50 sets of questionnaires distributed as a pilot test. Revisions were made accordingly based on feedback received from the pilot test group. Upon improvement, post tests were then conducted. Three hundred (300) sets of questionnaires were formally handed out using several methods like face to face, via email and social media. There were 235 valid samples, and thus sample recovery rate was 78.33%.

Apart from questionnaires, other methods such as interview, observations also been used to get teachers and students' opinion on curriculum and teaching methods in private education institutions. Besides, researcher also obtained information from secondary data such as library research and journal articles.

Focus on Study

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Source: Research framework adopted from Je Lee, 2011

Questionnaire Design

The questionnaire design for the study included each observable dimension and the breakdown measurement method has applied. A Likert 5-point Scale Method was adopted for the measurement of the questionnaire. A five (5) to one (1) score was given according to the extent of agreement and disagreement. Five points indicates extremely agreed and one point indicates extremely disagreed. The higher the score, the higher the degree of agreement and vice versa. There were two latent variables, innovation of curriculum design and teaching methods. The questionnaire was adopted and improved from Catharine, 2013. Dependent variable is students' academic performance.

There were a few questions for each observable / explicit variable in the survey. The data collected from investigation were then processed, and the original data files were established. For the questionnaire data were analyzed using SPSS.

Table 1: Respondents Distribution by Institution

Institution	Lecturer	Student	Total
AMU	30	30	60
CUCMS	30	30	60
UTAR	30	33	60
UNITAR	30	30	60
UCSI	30	30	60
			300

Creativity and Innovation towards student Academic Performance

Creativity and innovation are becoming important for the development of the 21st century knowledge society. Education is seen as central in fostering creative and innovative skills. Therefore, creativity and innovation should incorporated in curriculum design and teaching

methods. Moreover, creativity in education has move to do with the process than with the product and focuses therefore on the development of thinking and cognitive skills.

There are many studies found that there is positive relationship between creativity in curriculum design and teaching method with students' academic performance at private higher learning institutions. Clemson University in the United States is an example of university putting creativity into practice by developing an online Creative Thinking Program (CTP) and as a result the university can see the differences among their students. Even the university received student's comments on positive side. Student's claimed that they can have their own way of doing things (Louca, Despina, Simona & Elmos, 2014).

This news supported also by this study. Based on research conducted among 200 lecturers from 5 private universities in the Klang Valley, they agreed that creativity and innovation in the curriculum design and teaching methods can contribute towards student's academic performance. Traditional educational approaches have resulted in a mismatch between what is taught to the students and what industry need. Thus, many institutions are moving towards problem based leaning as a solution to producing graduates who are creative; think critically and analytically (Damodhara & Rengarajan).

Table 2: Relationship between Students' Level of Creativity and Innovation

Variable	N	Mean	Std.Dev	Std.Error	df	r	p
Creativity	235	112.428	3.695	0.6239	233	-0.004	0.354
Innovation	235	111.159	8.267	0.5496			

Research found that the teachers are key figures in constructing a creative climate, but they need support from both policy makers and institutions. Basically, curriculum and assessment are the main aspects to be addressed in order to allow creativity and innovation in the class room. Far an example, curriculum should undergo a skillful and thorough development, giving importance to every subject, taking creativity into consideration and defining it coherently throughout the curriculum, allowing freedom and time for discovery, and taking learner's interest into account (Ferrari, Cachia, and Punie, 2009).

In creativity and innovation teaching students are able to practically engage individually or in groups. According Mr Soorianarayanan (Senior Lecturer) at one of the private university in Cheras said that creativity and innovation integration in curriculum and teaching method will

help students more work harder than the teacher and meantime they will be more motivated and interested in what they are doing compared to conventional method of teaching.

Another senior lecturer from USCI also shared his view. He also mentioned that creativity and innovation in teaching method as well as in curriculum will make students able to explain and enthuse about what they doing; also they can explaining with new ideas and processes.

However, not only student will be more independent and motivated, even teachers/ educators roles changed. Educators now must acting as facilitators where more empowering and enabling young people. They also exploring and start leaning with young people and most important thing is they (teachers) actively listening to students. By doing this, there will be changes in student's academic performance day by day.

From the survey, researcher found that students' agreed to the certain extend that their academic performance improved in certain subjects which their lecturers used more creativity and innovation compared to other subjects with the same conventional method of teaching.

Many students said that their academic result improved due to the teachers teaching method. According to them, they are motivated even most of the activities were hard but once they have worked out what to do, they found it quite easy. New techniques in teaching help them to find and solve problem around them. Problem solving skill is not only useful in teaching and learning, also very useful in daily life.

Apart from that, creativity in teaching methods also helped to improved social skills including teamwork and communication. Class activities such as group discussion, presentation and so for that will help students improve their oral communication and this will help them to obtain good marks and grades. In addition, students also can gain self confident by doing this type of activities.

In addition, case study as a teaching method help students gain the skills of teamwork, independent modeling of the solution, independent reasoning and defending their opinion. This method involves ambiguity in the solution and choosing the most appropriate one. Thus, the result is not only knowledge but also professional skills and well- formed personality and set of values (Yakovleva,N.C, Yakovleva,E.X.,2014). This literature supported by majority lecturers who participated in this research study. Meantime, the teachers who have participated in this study believed that teaching and learning in higher education is a shared process, with responsibilities on both student and teacher to contribute to their academic success. According to them, the best teaching helps the students to question their preconceptions, and motivates them to learn.

Teachers also agreed to the point that by using creativity in curriculum design and innovative teaching students are motivated and they are willing to show their commitment in their studies. Creativity and innovation give students more freedom and opportunities for them to

select their learning mode and need to adapt the Adult Learning Principles of Knowles' in higher education institution.

Researcher also identified through study that learner-centered approach such as practice based model have been encouraging and the students' interest and understanding in innovation practice has clearly accelerated when measured by formal and informal course feedback after each course completion (Montonen & Eriksson, 2013). The findings show that students' achieved outstanding result in the courses where creativity and innovation took place.

Conclusion and Recommendation

The findings of this study revealed that students learn differently and they also prefer different teaching methods. The responsibility is on the teacher to use creativity and innovation in their daily teaching including using videos, role play, games, discussion, group work and glossary activities. Thus, it is necessary for the teachers to discover their learners' distinctive behaviors at the beginning of the academic session so as to be able to utilize the teaching methods that will match the varieties of the students learning styles for good academic achievement.

There are few ways to teachers to develop their creativity in the classroom. Firstly, they should become knowledgeable teachers where they can develop through books, training courses, online courses, online resources, and university programmes. Also, they can connect with other teacher from other institution using blogs, Facebook and twitter. They also can join a teacher's association and attend talks and workshops live or online where they can exchange ideas.

Besides that, teachers should become a collector of teaching ideas from several of resources. They can use these ideas out when the right opportunity presents itself. Teachers also encourage sharing their learning with others. They can offer to lead a session and then share their thoughts.

Apart from this, teachers should remove the blocks the creative thinking. No-one can claim that every person has the same skills and abilities as everyone else, but all people have the potential to be creative. Thus, teacher should always think out of box to help their students learn more effectively and efficiently.

In a nutshell, Ministry of Higher Education, higher education provider and teachers should work together incorporate the creativity and innovation in curriculum design teaching methods in order to improve students' academic performance.

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