

## A Review: Formation of Character Creative Students by Sternberg Theory

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### **Abstract**

Creativity is an ability to see things from a new perspective and the ability to find and solve a problem in a different way, which has never been attempted before and unusual. It connects the physical and mental experience of the original, unique and different. Along with the increasingly challenging era of globalization and technological development is booming, students who have a sense of creativity are needed in our society today. The study systematically reviews is to study the factors that have been identified are intelligence, knowledge, styles of thinking, personality, motivation and the environment. These factors are based on the theory of creativity Sternberg. It is important for parents, teachers and school authorities to determine the factors that contribute to the character of the students' creativity.

**Keywords:** Creativity; motivation; intelligence; student character; personality;

### **Introduction**

Creativity can be found or seen in all areas work, discipline, and professional career (Hope, 2010). This field has been studied by researchers and has growing from time to time. Innovation and product ideas creative have been the subject of many books, courses universities, professional associations, government and recent education has also been trying to innovate in this field (Egan, 2005). Creativity can be defined as an ability to think and acts which are not common because it is based on logic 'Assessment' (judgmental) (Azhar, Sanitha & Esa, 2003). Creativity is also an ability to see things from a new perspective and the ability to find and solve a problem in a different way, which has never been attempted before and extraordinary (Trivedi & Bhargava, 2010). It is connecting mental and physical experience of the original, unique and different. According to the world's greatest inventor, Dr. Yoshiro Yakamatsu, to become a creative country, organization creative and individual creative culture must be nurtured since the school days, in addition to the extensive emphasis on university level (Azhar et al. 2003).

In the era of globalization are increasingly demanding, our country should be more sensitive to the process of technological development is booming and challenging. Thus, the system education must accept the challenge because as we see the development of a technology start with society and society is always linked directly with the educational system. Basic education is important how the quality of human developed and nourished human qualities. It was agreed that thinkers and creative students who are indispensable in our society and also to the interests of the country in the future (Partnership for 21st Century Learning, 2004).

Based on this situation, it can be said the formal education system that will establish a creative community. This can be seen through Malaysia's education system, which has undergone innovation in line with changes occurring in globalization country and also abroad. Innovation happens in curriculum is drafting School Curriculum (KBSR) in 1982. In 1993, after almost ten years of implementation, Curriculum for Primary Schools has reviewed and enhanced its quality and changed its name to Integrated Primary School Curriculum which emphasizes the students' creative thinking and also 3M basic skills of writing, reading and counting (Mohsin & Nasruddin, 2008). Now, Curriculum Standard Primary School (KSSR) was introduced and adding mastery in the skills 3M to become 4M reasoning skills. KSSR also has elements the added value of creativity and innovation, entrepreneurship and information and communication technology (Ministry of Education Malaysia, 2012).

Through changes in the curriculum, the goal is to produce human capital that can be addressing current and future challenges. To produce competitive human capital, creativity element and innovation should be implemented beginning at the school level namely to nurture a culture of creativity and innovation in among students. Therefore, success in the field of Education is very important for children, especially the teenagers. Academic achievement will be a benchmark in the highly competitive world nowadays and it also a benchmark for a more secure future in education (Trivedi & Bhargava, 2010). Education can provide a significant impact to the overall the success of an individual. For example, in the field of quality education will affect employment opportunities and also an impact on the economic status individual (Yu & Patterson, 2010).

According to Mishra & Henriksen (2012) in an article entitled 'Rethinking Technology & Creativity in the 21<sup>st</sup> Century: On Being In-Disciplined 'state of education in now more oriented action in which creativity and thought it was with great creative minds. Think Creative is a structure that is open and guided the involving various specific cognitive skills such as realize something, shape, abstract, play and also synthesize. These skills provide opportunities human creatively to transfer information from one domain to another domain solve problems or even build a unique look to see something in a new way. This is especially relevant in context of educational technology as well as technology enable individuals to develop these skills to be great and creative way. Furthermore, the creativity of the students is very important in the face of technological development and innovation booming now.

### **Problem Statement**

Creativity is the result of self-confidence; In general the high levels of trust will make an individual better quality of life, family and also society. Creativity will also produce ideas and concepts, inventions and opportunities new, while innovation will add value to a new product or idea that (Ijaz et al. 2014).

The importance of creativity in the development of society and the country has long been recognized. Mohsin and Nasaruddin (2008) in his article entitled 'The role of teachers in fostering creativity of students' creativity has expressed interest noticed by all groups of leaders, members business, scientists, historians, educators and psychologists that creativity is needed for survival of people in the country, especially in the era globalization in which the changes, challenges and competition are and will continue to happen. The rapid development taking place in technology and communication have an impact the way of life of the population. Malaysia's population is now has adopted a more sophisticated way of life and therefore their needs to training and education and creativity also increased because they need a lot of guidance to adapt to developments.

The study by Trivedi and Bhargava (2010) to 240 secondary school students in the city of Jodhpur found Smart teenage student who got good marks in all testing Creativity granted compared with the adolescents are less intelligent. It shows students which has a low IQ less creative.

Studies by Ijaz et al. (2014) to 235 students' colleges in Pakistan in search of how to improve academic performance of college students found influence emotional intelligence and creativity to improve achievement student's academic. Therefore creativity, intelligence and emotional are very important for students because it affects their academic achievement.

Many schools and universities have changed the curriculum focuses on teaching and learning creative. But these changes involve only the elite school and also certain parts in certain countries (Zhu & Zhang, 2015). This indicates that teaching and creative learning is focused in the area or certain environments.

Studies by Denise (2014) California, in reviewing teachers' perception of creativity students and students' perceptions of their creativity, found that students do not put themselves as a creative. And, teachers categorize students as they students who do not achieve the level of creativity in the test Creative self-efficacy were conducted on them in Mathematics and Science. The study by Webb & Rule (2013) in Portugal also on the perception of teachers about creativity colleagues and students have found only 30% of teachers said their colleagues as a creative and only 41% of teachers said their students as a creative person. This means that less than 50% of teachers and students who are creative in the study.

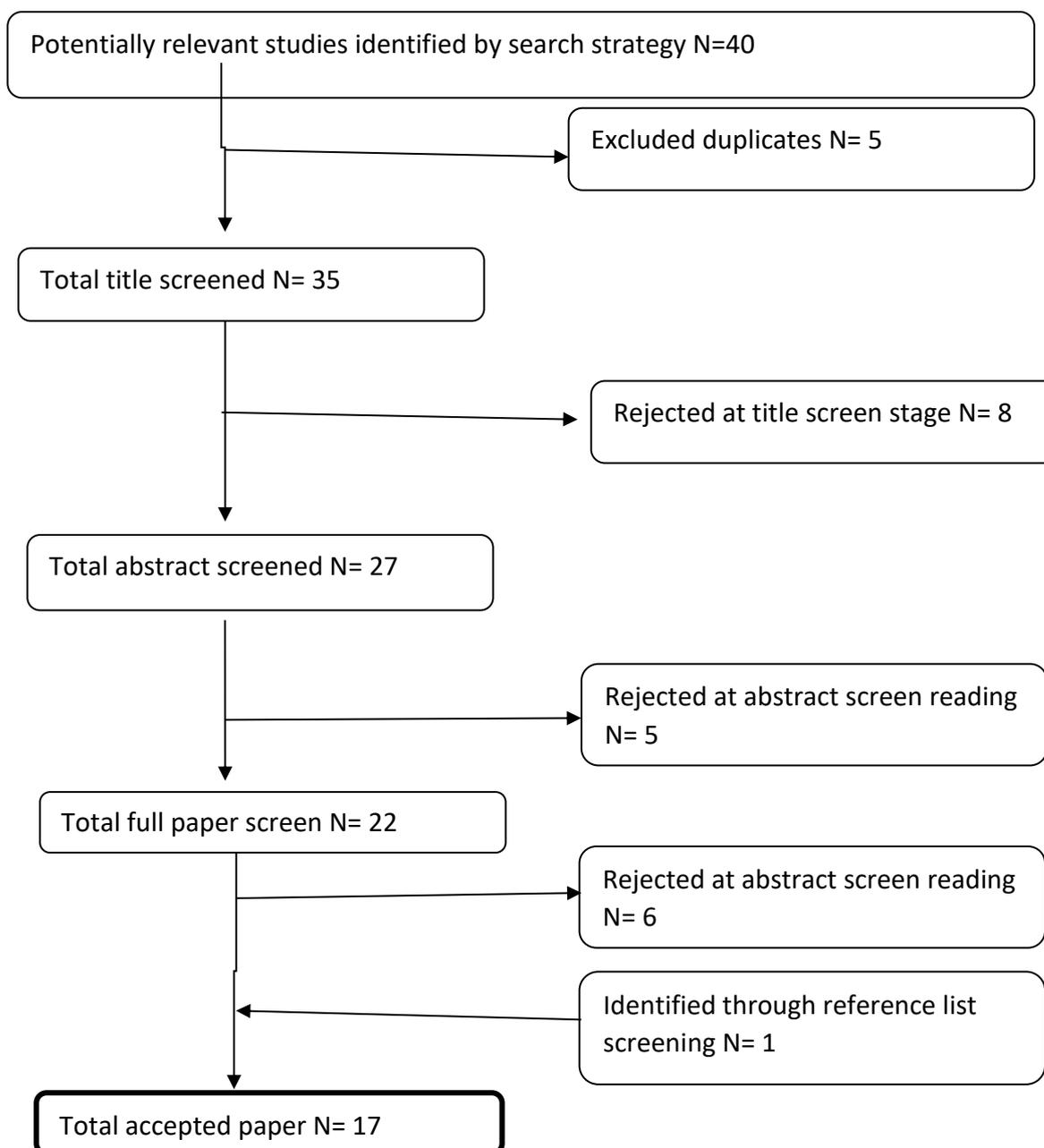
A study conducted by Habibollah, Rohani, Aizan, Jamaluddin & Kumar (2010) against Iranian students in the University of Malaya to test relations aspects of creativity and academic achievement found male students are more likely to initiative and students women are more prone to environmental sensitivity and creativity correlated with academic achievement. The study used an instrument 'What Kind Of Person Are You?' and 'Something about Myself'.

### **3.0 Objective**

There are four objectives of this study: -

- (1) Identify the theory of creativity with the establishment students' creative character.
- (2) Identify the research methods study prior to the formation of student character creative.
- (3) Identify the topic of creativity which is always investigated.

## Methodology



The study employs a systematic review study (Systematic review). A systematic review is a process for identify all the reliable evidence about clinical problems. It usually involves several steps: 1) think of questions that can be answered, 2) identify a searchable database, 3) develop a search strategy clearly, 4) selecting titles, abstracts and manuscripts by clear selection criteria, and 5) to observe the data in appropriate format. In this systematic review studies, the main focus of the study is to obtain information the creativity of students published in the journal search electronics such as ProQuest, SAGE Publications and Google Scholar. The search focused on the production of the journal in 2005 - 2016 alone. There are 40 articles in the search but only 17 are used to meet the research topic conducted. But other articles used for support the ongoing research topic. Keywords searched is 'environment', 'motivation', 'knowledge', 'intelligence' and 'Personality' in connection with 'creativity'.

Data were collected through the articles obtained divided thematically. The first theme is of the methods used to carry out studies related to the character formation of students creative according to Sternberg's theory. Analysis of the frequency and justification for choice of method is made for the theme this second

The second theme is to evaluate the articles according to the study of the title character formation of students creative according to Sternberg's theory. These topics are categorized to seven, namely: 1) creativity and resourcefulness, 2) creativity and knowledge, 3) creativity and style of thinking, 4) creativity and personality, 5) creativity and motivation and 6) creativity and environment. Analysis for The second theme is made to see the focus of study, years, and author and journal type publications.

## **5.0 Result**

### **5.1 Theories of Creativity and relations with formation of Character Creative Students**

Sternberg creativity theory states that there are six variables contributing to the ingenuity of individual creativity, knowledge, thinking styles, personality, motivation and environment. Amabile theory also emphasizes three components in such the main building of the expertise of creative individuals, creative thinking skills, and motivation. What it is focused here common motivation aspect noted by Sternberg (2006) in shaping the character of the student creative.

Intelligence, knowledge and thinking styles associated because it is the individual cognitive intelligence. This will establish a high IQ. According to Russo (2009), individuals who have a high IQ level capable of thinking for originality, fluency, smoothness and decomposition. In his study of 37 students using experimental methods have found that students whose IQ high have a high figure compared authenticity simple student but the study found that IQ does not relate meeting with creativity.

A study by Trivedi and Bhargava (2010) of 240 secondary school students found that consists of bright students have creativity higher than students who are less intelligent because they are more motivated. The results showed that adolescent girls are smart and better in fluency, flexibility, originality and have a resilient nature and love to take out while smart boy are more over to fluency, flexibility, showcase originality in a matter of cause and effect. Studies by Ijaz et al. (2014) looking for relationship intelligence / Emotional intelligence and creativity of academic achievement 235 college students in Pakistan found that both factors it affects their academic performance The.

According to Sternberg (2006), knowledge is the field the move someone forward. Knowledge will favorable to creative individuals to identify ideas that are original and new. Knowledge can help someone and it also may restrict the creativity of someone. In some cases, it may limit the development of new ideas and encourages individuals to think for static and rigid.

Style of thinking is a thinking individual converge. Often questioned matters conventional and flexible environment and external input (Sternberg, 2006). Refers to a style of thinking the ability of individuals to use their advantages have. There is a relationship between the individual thinking style and individual creativity factor. The findings showed 13 styles thinking individuals closely associated with the intelligence and individual knowledge to improve their

creativity. The study also showed that six factors that shape creative students character yields 75.3% on the creativity students. This study was conducted on 917 university students China (Zhu & Zhang, 2012).

Personality also is a person who is open to criticism; aware of the risks and the willingness of a person received a boost faces (Sternberg, 2006). Studies by Prabhu, Sutton & Sauser (2008) to 124 Students University in Los Angeles found that individual personality (Experience and self-esteem) is closely related to individual creativity. The study by Sung and Choi (2013) also found that extrinsic motivation has a relationship positive and creative person. Extrovert nature and has also experienced a positive relationship with individual creativity. The analysis also showed that the relationship among the positive experience and creativity is stronger if the individual has a high extrinsic motivation. Nature receives also affect individual creativity if the individual has a low extrinsic motivation.

Review by Denise (2014) on seven teachers and 15 school students in Connecticut found that teachers categorize classroom environment that is full of activities, involvement of teachers, the education system and classrooms will affect a student creativity. This study only focuses in the classroom environment that will affect students' creativity. For those teens play a role in improving academic achievement teens, this statement was supported by Yu and Patterson (2010) in their journals about 'Examining Adolescent Academic Achievement: A Cross Cultural Review 'to identifying the impact of family, peers and teachers to academic achievement motivation in adolescents. This research shows that parents are able to work with community resources and increasing expectations and involvement teacher to student activities, with the intrinsic motivation and academic performance will also increase. Trivedi and Bhargava (2010) also support the family said also plays an important role in shaping creative thinking of students. Most teenagers can through his youth with successful outcomes of guidance family. These factors strengthen environmental factors such as schools, teachers, parents, peers, society affect students' creative thinking

In the theory of creativity Sung & Choi (2013) noted three components, the main building of the expertise of creative individuals, creative thinking skills and motivation. Expertise refers to a field that is owned by an individual. Each individual has expertise in the field of makes them different from other. Creative thinking skills will determine how an individual is confronted with something question. Motivation also is a boost internal and external to stimulate more people to work hard and not afraid of difficulties and want change.

Rizal and Rehan study (2010) on factors motivate the creativity of teachers in Johor Bahru found the intrinsic motivation to contribute to creativity of teachers with a mean value of 3.71, followed by extrinsic factors 3.69 and environmental factors with a mean value of 3.63. Intrinsic motivation means inner drive to do the job because the task itself that causes it to feel good and satisfied. Extrinsic motivation is the willingness do the job because of external rewards or any of its do not want to be punished. The study involved 46 teachers using survey.

## **5. 2 Previous study About Creativity**

Research methods are often used in studies of the formation of character creativity. A total of 17 studies (85%) identified using the methods in this study of 20 titles study surveyed. The

rules are also other studies widely used in studies of creativity are studies meta-analysis and experimental research study (see Table 1).

Table 1:  
Frequency of studies related to creativity

Method	Percentage	Number
Survey	82%	14
Systematic Reviews	12%	2
Quasi-Experimental	6%	1
Total	100%	17

### 5.2.1 Survey Method

Survey is a method of research is not experiment which is often used in various fields. The study by Sung and Choi (2013) involving 304 students Business Studies in North America University has using a hypothetical observation using longitudinal data. This study uses the questionnaire 7-point Likert scale and the data collected in two stages namely the 8th week and the 12th week of the semester them. This study was conducted to investigate the relationship among the Big Five Personality and creativity and also the impact the tendency of individuals to generate creativity.

Liu, Lin Jian and Liou (2012) using the methodology of the study questionnaire and interview face to face in the study motivation and learning strategy in support creative environment for students. The study involved 28 university students in northern Taiwan following the field Media. A total of 35 questions used to test Likert motivation and learning strategy in support creative environment where the respondents are required make creative assignments. Respondents were also required to make multimedia video as an assignment in the middle of the semester and make creative website based multimedia the video as a final assignment. Interview face is controlled based on the satisfaction of respondents in generate the creative web site. A total of 8 journals in this meta-analysis study were being used in this research methods review.

### 5.2.2 Systematic Reviews

A systematic review is a process to identify all credible evidence. The study by Yu & Patterson (2010) in finding a relationship between creativity groups in the formation of knowledge includes understanding of the theory and methodology. A total of 66 references spotlight searched the literature focusing 1) formation theory creativity of the individual to the group; 2) understand creativity in groups and the establishment of knowledge; 3) group creative learning methodologies.

### 5.2.3 Quasi-Experimental

Quasi-experimental studies are commonly used to assess the effectiveness of a program when respondents do not can be distributed randomly. In the study Chan (2011) using pre and post tests on two groups of students postgraduates pursuing specific outlook during their studies.

### 5.3 Identify Topics Creativity

#### 5.3.1 Creativity and Intelligence

Table 2 shows that there are three relevant journals with creativity and ingenuity. There are also studies that have more than one main focus of the study.

Table 2:  
Creativity and Intelligence

Number	Title	Journal	Author	Year	Focus
1	A comparative study of creativity and cognitive problem solving strategies of high-IQ and average students	Gifted child quarterly	Russo	2009	Intelligence
2	Self-perceived creativity, Family Hardiness and Emotional Intelligence of Chinese Gifted students in Hong Kong	Journal of Secondary Gifted Education	Chan	2011	environment and intelligence emotion
3	Role of intelligence and creativity in the academic achievement of students	Journal of Physical and Social Sciences	Ijaz, Tahseen, Zulfiqar & Muhammad Iqbal	2014	intelligence and achievement academic

#### 5.3.2 Creativity and Knowledge

Table 3 shows there are 4 journals related to creativity and knowledge. There are also studies that have more than one main focus of the study.

Table 3  
Creativity and knowledge

Number	Title	Journal	Author	Year	Focus
1	Relation of Creativity and Educational Achievement in Adolescence	Journal of Psychology	Trivedi & Bhargava	2010	achievement academic
2	Relationship between creativity and academic achievement: A study of gender differences	Journal of American Sciences	Habibollah, Rohani, Tengku 2012 Aizan, Jamaluddin & Kumar.	2011	achievement academic
3	Second Graders' Recycled Item Products Demonstrate Life cycle content knowledge and creativity skills	Journal of Creative Education	Webb & Rule	2013	Knowledge

4	Role of intelligence and creativity in the academic achievement of students	Journal of Physical and Social Sciences	Ijaz, Tahseen, Zulfiqar & Muhammad Iqba	2014	Intelligence and achievement academic
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### 5.3.3 Creativity and Thinking Style

Table 4 shows only one journal related to creativity and thinking styles.

Table 4

Creativity and thinking style

Number	Title	Journal	Author	Year	Focus
1	Thinking styles and conceptions of creativity among university students	Journal of Experimental Education Psychology	Zhu & Zhang	2015	Thinking style

### 5.3.4 Creativity and Personality

Table 5 shows that there are three relevant journals with creativity and personality. There are also studies that have more than one main focus of the study.

Table 5

Creativity and personality

Number	Title	Journal	Author	Year	Focus
1	Birth order, sibling constellation, creativity and personality dimensions of adolescents	Journal of Study Psychology	Szobiova	2008	personality and environment
2	Creativity and certain personality traits: Understanding the mediating effect of intrinsic motivation	Creativity Research Journal	Prabhu, Sutter & Sauser	2008	personality and motivation
3	Do Big Five factors affect individual creativity? The moderating role of extrinsic motivation	Journal of Social Behavior and Personality	Sung & Choi	2013	personality and motivation

### 5.3.5 Creativity and Motivation

Table 6 shows that there are four journals related to creativity and motivation. There are also studies that have more than one main focus of the study.

Table 6  
creativity and motivation

Number	Title	Journal	Author	Year	Focus
1	Creativity and certain personality traits: Understanding the mediating effect of intrinsic motivation	Creativity Research Journal	Prabhu,Sutter & Sauser	2008	Personality and motivation
2	Do Big Five factors affect individual creativity? The moderating role of extrinsic motivation	Journal of Social Behavior and Personality	Sung & Choi	2013	Personality and motivation
3	Examining Adolescent Academic Achievement: A cross cultural review	The Family journal: Counselling and Therapy for Couples and Families	Yu & Patterson	2010	Environment and motivation
4	The dynamics of Motivation and Learning Strategy in a Creativity supporting Learning Environment in Higher Education	Journal of Educational Technology	Liu,Lin,Jian & Liou	2014	Environment and motivation

### 5.3.6 Creativity and Environment

Table 7 shows that there are three journals related to creativity and the environment. There are also studies that have more than one main focus of the study

Table 7  
Creativity and the environment

Number	Title	Journal	Author	Year	Focus
1	Teacher and student perceptions of creativity in the classroom environment	Journal of Roeper Review Institute	Denise	2014	Environment
2	Self-perceived creativity, Family Hardiness and Emotional Intelligence of Chinese Gifted students in Hong Kong	Journal of Secondary Gifted Education	Chan	2011	Family, emotional intelligence and creativity

3	Birth order, sibling constellation, creativity and personality dimensions of adolescents	Journal of Study Psychology	Szobiova	2008	Environment and personality
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### Conclusion

Creativity theory Sternberg (2006) and also creative components has highlighted main domain in the formation of a creative character individual. Both of these theories emphasize the motivation factor as one of the drivers to individual creativity. This research is expected to give exposure to students in particular to identify factors which can shape up the character of their creativity. At the same time, parents, teachers and school authorities need.

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### References

- Chan, D. W. 2005. Self-Perceived Creativity, Family Hardiness, and Emotional Intelligence of Chinese Gifted Students in Hong Kong. *Journal of Secondary Gifted Education*. 16(2/3): 47–56.
- Denise, D. S. 2014. Teachers and student Perceptions of Creativity in the Classroom Environment. *Roeper Review*. 22(3): 148–153.
- Egan, T. M. 2005. Factors Influencing Individual Creativity in the Workplace: An Examination of Quantitative Empirical Research. *Advance in Developing Human Resources*. 7(2): 160–181.
- Habibollah Naderi, Rohani Abdullah, H.Tengku Aizan, Jamaluddin Shahrir & Kumar, V. (2010). Relationship between creativity and academic achievement: A study of gender differences. *Journal of American Sciences*. 6(1): 181–190.
- Hope, S. 2010. Creativity, Content and Policy. *Arts Education Policy Review*. 111: 39–47.
- Ijaz Ahmad, Tahseen Mehmood, Zulfiqar Ali & Muhammad Iqbal. 2014. Role of Intelligence and

Creativity in the Academic Achievement of Students. *International Journal of Physical and Social Sciences*. 2(7): 1–10.

Kementerian Pelajaran Malaysia. 2012. Kurikulum Standard Sekolah Rendah.

<http://www.moe.gov.my/>

Liu, Z. F., Lin, C. H., Jian, P. H. & Liou, P. Y. 2012. The Dynamics of Motivation and Learning Strategy in a Creativity-Supporting Learning Environment in Higher Education. *Turkish Online Journal of Educational Technology*. 11(1): 172–180.

Mishra, P., Henriksen, D. & Deep-Play Research Group. 2012. On Being In-Disciplined: Rethinking Technology & Creativity in the 21st Century. *Tech Trends*. 56(6).

Mohamad Mohsin Mohamad Said & Nasruddin Yunos. 2008. Halangan-Halangan Kepada Usaha

Memupuk Kreativiti di Kalangan Pelajar. *Jurnal Pengajian Umum*. 7(1): 41–51.

Mohd Azhar Abd Hamid, Sanitah Mohd Yusof, Esa Khalid & Othman A.Kassim, (2003). Kreativiti,

Invensyen dan Inovasi: Suatu cadangan matapelajaran pada peringkat sekolah menengah. Diakses dari [http://eprints.utm.my/2284/1/kurikulum\\_kreativiti.pdf](http://eprints.utm.my/2284/1/kurikulum_kreativiti.pdf)

Mohd Rizal & Rehan Mohd Taha. 2010. Tinjauan Terhadap Faktor-Faktor yang Memberi Motivasi kepada Kreativiti Guru dalam Pengajaran Mata Pelajaran Kemahiran Hidup di Enam Buah Sekolah Menengah Kebangsaan Daerah Johor Bahru. Skudai: Universiti Teknologi Malaysia.

Partnership for 21st Century Skills. 2004. Skill Framework. <http://www.21stcenturyskills.org>

Prabhu, V., Sutton, C. & Sauser, W. 2008. Creativity and Certain Personality

Traits: Understanding the Mediating Effect of Intrinsic Motivation. *Creativity Research Journal*. 20(1): 53–66.

Russo, C. F. 2004. A Comparative Study of Creativity and Cognitive Problem Solving Strategies of

High-IQ and Average Students. *Gifted Child Quarterly*. 48(3): 179–190

Sternberg, R. J. 2006. The Nature of Creativity. *Creativity Research Journal*. 18(1): 87–98.

Trivedi, K. & Bhargava, R. 2010. Relation of Creativity and Education Achievement in Adolescence. *Journal of Psychology*. 1(2): 85–89.

Webb, A. N & Rule, A. C. 2012. Second Graders' Recycled/Craft Item Products Demonstrate Life

Cycle Content Knowledge and Creativity Skills. *Journal of Creative Education*. 3(4): 479–485.

Y.Sung & J. N. Choi. 2009. Do Big Five Personality Factors Affect Individual Creativity? The Moderating Role of Extrinsic Motivation. *Journal Social Behavior and Personality*. 37(7): 941–956.

Yu, F. & Patterson, D. 2010. Examining Adolescent Academic Achievement: A Cross-Cultural Review. *The Family Journal: Counselling and Therapy for Couples and Families*. 18(3): 324–327.

Zhu, C. & Zhang, L. F. 2012. Thinking Styles and Conceptions of Creativity Among University Students. *An International Journal of Experimental Educational Psychology*. 31(3): 361–375.