Schools Pupils' Perceptions of Factors Impacting on their Creativity Development in Ghana

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Abstract

This study examines the pupils' perceptions of factors likely to impact on their creativity development in public and private primary schools in Asokwa Sub-Metro Authority, in the Ashanti Region of Ghana. Questionnaires were administered to the pupils to examine their attitudes, beliefs, and current school and classroom environments. Pupils were found to possess accurate concepts regarding what constitutes creativity and revealed conflicts with the school and classroom environments. The paradox between public and private schools pupils' reported support for creativity enrichment and virtual lack of related classroom practice and inadequate school infrastructure is explored as a result of multiple misconceptions and contributing variables. Results tested at the 0.05 level of significance indicated that significant difference existed in the pupils` perception of detail bases on (i) school type; (ii) age; while no significant difference existed in the perception of details of pupils based on school class and gender. Implications are discussed, as well as possible limitations and directions for future research. Further studies would need to be conducted to investigate the conditions under which perception of creativity development in children would be enhanced alongside their academic achievement.

Keywords: Creativity, creative teaching, learning environment, pupils' perception.

1. Introduction

Creativity has been a topic of considerable interest and research since J. P. Guilford's (1950) presidential address to the American Psychology Association (Treffinger, 1977). Countless studies have since been undertaken which either focused exclusively on creativity or creativity development in relation to other cognitive, social, and personal factors. Most of these studies have sought to determine factors that improve creativity development. The implications of these relationships for education are apparent since creativity skill, concepts, and content are the acknowledged goals of the education process (Tudor, 2008). Although creativity has been subjected to many different definitions, they are positive and complimentary.

One category of theories on creativity that is practical and helps us to understand the roots of creativity and suggest how to design environments so that the creative potentials of children will be fulfilled is the category on developmental theories (Kozbelt et al., 2010). Also important to the theories are the persons, place and the potential aspects of creativity of the individual. Central to cultivating and nurturing creativity is the supportive environment within which creativity is constructed (Peterson, 2001). Cole, Sugioka, & Lynch, (1999) acknowledge the importance of providing creative learning opportunities in the regular school and classroom.

This study intends to look into the creativity development provided by the private and public basic education and the level of pupils' perceptions of creativity in the basic education in Ghana. This research study addressed the shortfall in the literature describing the classroom practice of creative arts education as an umbrella term and identifying innovative practices that meet the needs of teachers and pupils, allowing recommendations and suggestions for further interrogations.

2. Literature

Various studies have confirmed the importance of creativity in human existence and how it impacts on our well-being and development (Lubart & Georgsdottir, 2004; Tudor, 2008; Kaufman and Beghetto, 2009). It has been established that all humans are born with some measure of creative potential (Lowenfeld and Brittain, 1987) and this exists in continuum; from very low levels in non-creative individuals to very high levels (eminent cases of creativity such as Confucius, Dostoyevski, Einstein, Freud, Ghandi, etc.) (Lubart & Georgsdottir, 2004). Contributing to what creativity is, Sternberg (2006) posits that "creativity is a habit" – a routine response that is expressed in human actions. He continued to say that it is an attitude toward life. He further suggests three essentials required to cultivate creativity: firstly, opportunities to engage in it; secondly, encouragement to avail one's self to these opportunities and thirdly, rewards when people respond to such encouragement and think and

behave creatively. Tudor (2008) adds that individuals should therefore have the opportunity and encouragement to dynamically engage in (creative arts), not just in education but throughout life to stimulate and nurture their creative potential. Lowenfeld and Brittain (1987), contributing to how to foster creativity development, postulated that creativity does not just happen, but part of the learning process. They further posit that creativity is more related to thinking abilities and attitude development. Research around creative culture and general climate has led to the identification of three necessary areas on which creative production occurs: intelligence, motivation and suitable environment (Baer and Kaufman, 2006; Lubart & Georgsdottir, 2004).

The learning environment is a place and setting where learning occurs, and the nature of learning environment can have a positive or negative impact on the learning process (Kerka, 1999; Yu-Min et al, 2001). According to Sternberg (2006), the ideal environment will allow students the time to think, act and learn. It is believed that learners gain experience by interacting with the environment (Teachnology, 2008; Dewey, 1959). The classroom environment is basically constructed to unite pupils and their teachers in the pursuit to learn and achieve the goal of the community (Thompson and Wheeler, 2008: 34). A classroom environment can be effective if it allows students and teachers to collaborate (Akrofi, 1978); and encourage thoughtful reflection on experiences and support collaborative construction of knowledge not competition among learners for recognition. The environment must be designed to reflect the educational context being used and provide adequate resources to help foster students' creativity (Kaufman and Beghetto, 2009).

To foster creativity within an institution, Amabile et al (1996) postulates that, three pillars are fundamental organizational motivation to innovate, availability of resources and management practices. Tsai (1982) as cited in Yu-Min et al (2001) similarly provided yet another categorization. Where the teaching-learning environment was considered in three thematic areas: material, teaching and social environment, the contents were similar to Thompson's and Wheeler's proposition; which considers the creative environment to include physical, intellectual and emotional aspects. Although these earlier studies had varying considerations, the converging point is "safe and secure" learning environment. Contributing to needs of creative learning environment, Torrance and Goff (1990) suggest that creativity can be fostered if the work climate is right in the following areas: challenge and involvement, freedom, trust/openness, idea time, playfulness/humor, conflict resolution, idea support, debates, and risk taking.

Sternberg and Grigorenko (2004) contend that creative learning environment is the physical, social, and cultural environment in which creativity is nurtured and creative activity occurs. The family, the school and societal spaces are the three most important environments where the child has the opportunity to develop his or her creative potential (Lubart & Georgsdottir, 2004; Sharma, 2004; Kaufman and Beghetto, 2009). The family and the school may provide different learning opportunities the common denominator in both spaces is "safe and secure" learning environment. A creative environment is one where people feel comfortable in expressing their ideas and where constructive support is provided in the development and analysis of those ideas (Thompson and Wheeler, 2008).

This study is premised on Thompson's and Wheeler's proposition, their detail categorization of the environment included the following:

- Physical environment: solid (set) structure and movable fixtures.
- Intellectual environment: standards, expectations, objectives, learning strategies and assessment.
- Emotional environment: feeling of safety, support, respect, management, discipline, motivation and culture.

Some specific characteristics of the physical environment require specific action by the learner; the learning environment must be designed to motivate students (Thompson and Wheeler, 2008). It must be rich and complex, reflecting the essential properties of what learners have to learn (Zualkernan, 2004; Schneider, 1995; Thompson and Wheeler, 2008). Poon Teng Fatt (2000) suggest diversity in the classroom setting through changing the physical environment, the learning tools, and class discussion. It is suggested that through unique experiences, unique cognitions will be encouraged.

Thompson and Wheeler (2008) identify the physical environment as "another teacher" which motivates learners and enhances learning. Studies about students' academic achievement in building condition conclude that the quality of the physical environment significantly affects student's achievement. The lack of resources and equipment also slows down learning activities (Collins, 2005). Other researchers have acknowledged that student achievement slags in shabby school buildings' (Scholastic, 2009; Ferman, 1999; Hutchinson, 2003; Thompson and Wheeler, 2008). Learners in a supportive environment have high level of self efficiency, self-motivation and use learning as a primary transformation force (Scardamalia and Bereiter, 2005). Some researchers argue that "it is easier to enhance creativity by changing conditions in the environment than by trying to make people think more creatively" (Czikszentmihalyi, 1996). The physical structures and features of the art-studio is the first psychological setting the artists have to adjust with. The success of artistic/design productivity will depend on this environment.

To be successful in developing the creative abilities of pupils, it is important to establish a supportive learning environment. Kaufman and Beghetto (2009) reckon that educators must establish educational and motivational environment to foster development and expression of student creativity. According to Yuen-Yeen and Watkins (1994), studies have shown that, students always tend to prefer a friendlier atmosphere, where students and teacher collaborate to provide a greater variety of interesting but challenging activities, which promote the deeper, more achievement-oriented approach to learning for students. Sternberg (2006) and Lubart and Georgsdottir (2004) have found that when the teacher role model creativity it becomes useful in creative development in school. Most importantly, the teacher is the guardian for learning in the classroom environment. Thompson and Wheeler (2008) again suggest a shift in paradigm of the teacher's role from "authority and purveyor of knowledge to a facilitator require a new and different classroom setup that encourages class discussion, banter and wit will be encouraged along with the sharing of ideas and experiences".

Thompson and Wheeler (2008) concede that class size can affect the collaboration between learners and facilitators, since large class size hinders the possibilities of facilitators to address each learner's physical, psychological and emotional needs. Such an environment can be created by, helping people turn their uninformed ideas into reality by giving encouragement and suggestions and by asking helpful questions, a situation in which pupils are encouraged to work harder and entertain mistakes. Consequently, Goleman and Kaufman (1992) reckon that "in creative problem solving, a mistake is an experiment to learn from valuable information about what to try next". This also builds a creative environment.

Although creative individuals are essential, creativity might be greatly enhanced by generating a culture that supports the creative process. The educational environment is the most important determiner in every educational setup. It provides the platform for effective curriculum design and a vital effective learning strategy, as observed in recent years (Abraham et al, 2008). Kaufman and Beghetto (2009) note that policies, practices and procedures in schools and classroom downplay the development of creativity in students, thereby producing graduates that are unable to stand up to the needs and challenges of the competitive global economies. Tudor (2009) concludes his study by arguing that facilitating creativity in learners can most readily be achieved when teachers are creatively self-aware and learners are knowingly engaged in a proactive manner with investigating 'potentialities' via the production of future-oriented modes of learning. Kerka (1999) summarizes conditions in school and work environments that are creativity "killers" to include working under surveillance; restricting choices; working for inappropriate extrinsic rewards; fearing failure, judgment, or appearing foolish; having to find the "right answer"; being evaluated; working under time pressure; and unhealthy competition. Fisher and Williams (2004) note that situations where teachers provide defensive teaching characterized by little active input and the outcomes are "controlled and prescribed" could block the child's creativity development. According to Michael Steven (1968) the environmental factors do not only affect the pupil but also the teacher. He says, the factors that mainly affect the teacher's view of the situation could be summarized as the ability of the teacher; his personality; the opportunity that the particular environment presents in terms of space and material; his past experiences when faced with similar situations and how he is able to learn from them; his degree of training in the first place and the element of success that he desires the activity to have, in terms of whether it conforms to a preconceived idea of the situation.

The present study has not been to settle, or really even enter into, the debate about the generality of creative learning environment. We have instead taken a preliminary look at some perceptions of creative learning environment and creative development to see what suggestions they might give regarding how different variables affect pupils' creative development.

2.1 Rationale for the study
The rationale is based on the fact that public opinion seemed to favour performances of private school pupils as against public school pupils and private schools are better resourced than public schools. This study was therefore set out to discover if this could be true in the case of perception of factors impacting on pupils' creativity development.

2.2 Hypotheses
The following hypotheses were raised in this study.
i. There is no significant difference in the creativity development perception scores of public and private primary school pupils.
ii. There is no statistical significant difference in the creativity development perception scores of male and female pupils in public and private primary schools.
iii. There is no statistical difference in the pupils' creativity development perceptions based on class and age.

3. Methodology

The research design employed is descriptive survey, as the study is geared toward discovering the level of the pupils' perception of their creativity development was employed. Six basic schools were selected. These were Ayeduasi R/C primary, Weweso M/A Primary, Ayigya L/A Primary, Kings International, KNUST Primary and St. Louis Jubilee School. The schools are situated within the Asokwa Sub-Metro Authority, a low socio-economic community, in the Ashanti Region of Ghana. Pupils` perception of creativity development forms the dependent variable while the school types, gender and aged class form the independent variables of this study.

3.1 Participants and sampling procedure
The accessible population for this study consisted of primary five and six pupils of all public and private primary schools in Asokwa Sub-Metro Authority, in the Ashanti Region of Ghana. The sample for this study consists of 392 pupils selected from three private and three public schools in Asokwa Sub-Metro Authority. The sample was selected through a stratified random sampling technique due to the demographical variables of the study such as age, class, gender and school.

The subjects drawn from the two types of schools, share some common attributes; all Ghanaian children who belong to the same socio-economic strata. They all live within Kumasi Metropolis and having almost the same family environment, living style and dietary habits, but different school environments. By this it was assumed that students of the two samples belonged to the same population and could be regarded as comparable. However, no empirical data were available to compare their intellectual capacities. The participants were subjected to a calm classroom situation and the researchers read out instruction on the perceptual questionnaire for adequate understanding of the pupils. Participation was purely voluntary.

3.2 Instrument
A 33-item questionnaire was developed for this study. The items contained in the questionnaire were sectioned into five categories: demographic information, creativity, parent support, teacher support and the school environment. The categories and the number of items contained in each of them (creativity, parental and teachers support, as well as school environment) embedded in the general topic and therefore used to compose the items in the questionnaire. On each item subject is required to check and report one of the five response choices that describes his or her behaviour the best. The internal consistency coefficients for five scales have been assessed in terms of alpha coefficients and were found to be ranging from .65 to .70. The construct validity of scales was established through factor analysis and found to be satisfactory. Scoring of these activities provides scores for four basic dimensions of creativity development namely, parent influence, teacher influence, school environment, and creativity. The testing sessions were conducted in classroom settings. The questionnaire was administered to a group of 35-55 subjects in respective classes. The test responses were scored and coded.

3.3 Pilot Instrument
A pilot study was conducted to review the questionnaire. The instrument was delivered to twenty pupils at random. All the pupils involved in the pilot were selected from upper primary schools. Instructions were given, orally and written, to review the statements and the overall format of the instrument. Modifications were made, based on their feedback, to clarify the wording of a few related items. The extent of the importance of each item was rated via two-points; where 'YES' means affirmation to the statement and 'NO' means disaffirmation or objection to the statement. The data were analyzed using independent t-test and ANOVA.

Three other research assistants were employed and the test was administered during the morning hours of the same day within the same geographical location. The mean age of the subjects was 11.97 years with an age range of 9 to 17 and standard deviation of 1.476.

3.4 Data analysis
The data obtained from the instrument were analyzed using SPSS 16.0 for Windows. Subjects were first categorized into (1) type of school and (2) gender. Independent t-test and multiple regression statistical procedures were used to test the null hypothesis. Results were tested for significance at the 0.05 level of confidence.

4. Results
(Table 1)

Hypothesis 1:
The result in Table 2 showed that a significant difference existed in the pupil's perception of creativity development in public and private schools. Private school pupils differ significantly from their counterparts in

public schools in their level of perception of creativity development (*t cal* = 7.586) *t-crit* = 1.960; *df* = 328; *p* = <0.05). Thus, the null hypothesis earlier stated is rejected.
(Table 2)

Hypothesis 2:
The results in Table 3 indicated that there is a significant difference in the pupils` perception of creativity development based on age (*F*(8,383) = 2.239; *p* < .05. The results also indicated that no significant difference in the pupils` perception of creativity development based on class (*F*(1,390) = 1.147; *p* > .05). The hypothesis of no significant difference in the scores of pupils` perception of creativity development based on age was by this finding rejected, while the hypothesis of no significant difference in the scores of pupils` perception of creativity development based on class was by this finding retained. The findings imply that pupils` perception of creativity development is influenced by their age and not class.
(Table 3)

Hypothesis 3:
The t-test analysis in Table 4 showed no significant gender difference in the pupils` perception of creativity development between private and public schools. Going through the mean scores of male and female pupils in public and private schools showed that male students' perception of creativity development is higher than that of their female counterparts. Consequently, the null hypothesis was retained.
(Table 4)

5. Discussion
The findings of this study showed that the private primary schools are contributing significantly to educational development in Ghana. Results from Table 1 show that pupils' from private primary schools reported significant difference in their perception of creativity development over public primary school pupils. This support the popular assertion that privately owned primary schools are well resourced (Bello, 2009) in terms of infrastructure, academic facilities, instructional materials, better teacher-student relation and above all congenial school environment that support creativity development.
Notable among the contributing factors that private schools have an edge over public primary schools could be attributed to the academic user fee and other charges levied on the pupils, this provide adequate financial resource that allows for the provision of essential facilities and materials needed for smooth implementation of academic programme. Another contributor will be the role of parents in school management; in situations since there are frequent interactions between educators and parents on pupils' performance and provision of better school facilities. These two factors are not essential in the running of public schools; which depends solely on state sponsorship and parents from very low socio-economic strata. This finding seemed to discredit the standard of education in public primary schools. This is consistent with the result of Lowenfield and Brittain's study (1987), where it was suggested that public schools discourage creative thinking, since it is not high on most teachers' objectives. Although the study was clear on it objectives, it exposed that the higher perception score of the private school pupils was not as a result of more qualified teachers in the private schools but as a result of recruitment of specialized teachers for the creative arts and better supervision from the school proprietors. It is worth noting that private schools in Ghana are operated as a profit-making educational venture; hence the school supervisors pay serious attention at supervision and teacher conduct.
Results of this study also showed that the null hypothesis which stated that there will be no significant difference between the perceptions of pupils based on age in creativity development was rejected. This implied that younger pupils perceived the contribution of learning environment to creativity development differently from their older colleagues. The younger pupils perceived that learning environment contribute to creativity development higher than how the older kids perceived it. These results are also consistent with Lowenfield and Brittain (1987), where studies have identified the leveling-off periods creativity activities in older pupils due to pressure to conform by teachers, parents and peers. Another interesting result worth noting is the hypothesis of no significant difference in the scores of pupils` perception of creativity development based on class which was retained. Statistics showed that while 90% (177) of the pupils in private school were within the accepted age for the classes compared to only 42% (84) of the pupils in public school, however, the analysis of variance of pupils` perception of creativity development based on class leveled off.
The result obtained for hypotheses three showed that there was no significant difference between the perception scores of male and female pupils on the perception of creativity development based on school type. This means that the pupils' gender differences have no effect on their perceptions of creativity development. Suggesting that being a male or female child does not dictate the level of creativity and if there be any difference in the level of creative performance, gender is not the likely cause. This result corroborates with the research findings of Baer

and Kaufman (2006) that project the superiority of male children over females ones or vice versa in creativity performances. The lack of sex influence on the scores of perceptual test in this study could be due to societal and school influences; since the pupils are not separated from each other on the bases of gender differences during the learning situation, the two sexes could therefore exhibit perceptual performance with little or no difference. Also the fact that both sexes learn in the same school environment (mixed school system); which may be motivating or non- motivating. Another salient point is gender discrimination which existed in the past, no longer control the thinking and attitudes of most Ghanaian adults, thereby providing equal school and career opportunities for the children's future. This has one way or another allows for equal treatment and experience of both sexes by the parents or guardians and teachers both in school and home.

6. Conclusion

This paper investigated the factors that pupils perceived as detrimental or instrumental to their creative development. The study of these factors of perception can prove to be very useful to basic school teachers in as far identifying the myths and fallacies that students come with into the learning environment. This can give function and a more effective structure to creativity development. The results suggest that biases do exist in these settings and dispelling the negative attitudes then becomes of central importance to the teacher. The results also suggest that the perceptions of creativity are gender equitable. This was surprising because the study suggests that visual art is perceived as requisite to creative development, but traditionally, females shied away from the more technical subjects. The study also establishes that the perception of the role of adequate infrastructure in creative arts learning is underestimated. This could be due to the view that creative art is a non-scoring subject in Basic Education Certificate Examination; hence it was unwise to invest in providing appropriate facility and materials. This undermines the preparation of the pupils to be critical thinkers and problem-solvers along the education path and in real life situations when they of age. The situation culminates in the perceived uncertainty of employment prospects.

The findings cannot be considered fully generalized since the control of social factors was somewhat inadequate. For more generalized findings, more large scale studies with control of age, gender, familial, and socio-cultural variables are required. On the basis of present finding, it is suggested to the management of the public schools to look forward for the strategies required for the cultivation and nurturing of creativity and creative thinking among their pupils, so that they can be brought at par with the students of private schools.

References

Abraham, R., Ramnarayan, K., Vinod, P. & Sharmila Torke, S. (2008). Students' perceptions of learning environment in an Indian medical school. *BMC Medical Education*, 8(20). Retrieved August 13, 2010 from http:// www.biomedcentral.com/1472-6920/8/20.

Akrofi, K. A. (1978). *School organization in modern Africa*. Tema: Ghana Publishing Corporation.

Amabile, T. M., Conti, R., Coon H., Lazenby, J. & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 35 (5).

Baer, J. & Kaufman, J. C. (2008). Gender Differences in Creativity. *Journal of Creative Behavior,* 42 (2) / Second Quarter 2008.

Bello, A. A. (2009). Perception of details in private and public Schools: the role of demographic variable. *Contemporary Humanities*, 3, September 2009.

Cole, D. G., Sugioka, H.L., & Yamagata-Lynch, L.C. (1999). Supportive Classroom Environments for Creativity in Higher Education. *The Journal of Creative Behaviour*, 33 (4): [Fourth Quarter] Buffalo: The Creative Education Foundation.

Collins, Stella (2005). Train the trainer: Create an impact using the physical environment. [Internet-25.07.2011]http://www.stellarlearning.co.uk/cms/images/downloads/Getting_the_physical_environment_right.pdf.

Csikszentmihalyi, M. (1996). *Creativity: Flow and the Psychology of Discovery and Invention*. New York: HarperCollins.

Dewey, John (1959). Art as experience. United states of America: Penguin Press.   [Internet-05.05.2010]http://books.google.com.gh/books?id=aAbqAGo5MwwC&pg=PP3&source=gbs_selected_pages&cad=3#v=onepage&q&f=false.

Ferman, Terrie (1999). Thinking creatively about new learning environment. Creating New learning environments for higher education, 9 (3) [Internet-20.07.2011] www. Thinking creatively about new learning environment   (NLEs) 1. Htm.

Fisher, R. & Williams, M. (2004). Unlocking Creativity: Teaching Across the Curriculum. London: David Fulton Publishers Ltd.

Goleman, D. & Kaufman, P. (1992). The art of creativity. [Internet-14.04.2011]http://www.psychologytoday.com/articles/199203/the-art-creativity?page=2 .

Hutchinson, L. (2003). Educational environment. ABC of learning and teaching, 326. Retrieved July 27, 2011 from http://journal.dogus.edu.tr/13026739/2004/cilt5/sayi1/M0__0101.pdf.

Kaufman, J. C. & Beghetto, R. A. (2009). Creativity in schools: A rapidly developing area of positive psychology. In Furlong, M. J. (eds.), *Handbook of positive psychology in schools*. New York: Routledge.

Kerka, S. (1999). Creativity in Adulthood. Retrieved October 13, 2011 from http://www.ericdigests.org/1999-4/creativity.htm.

Kozbelt, A., Beghetto, R. A. & Runco, M. A. (2010). Theories of creativity. In Kaufman, J. C and Sternberg, R. J. (eds.), *The Cambridge Handbook of Creativity*. New York: Cambridge University Press.

Lowenfeld, V. & Brittain, W. L. (1987). *Creative and mental growth* (8th ed). Prentice Hall.

Lubart, T. I. & Georgsdottir, A. (2004). Creativity: Developmental and cross-cultural issues. In S. Lau, ann Hui, & gyc Ng, (Eds.), *Creativity: When East meets West. Singapore*. World Scientific Publishing Company.

Peterson, R. E. (2001). Establishing the Creative Environment in Technology Education: Creativity Doesn't Just Happen by Chance; the Prepared Environment Nourished It. *The Technology Teacher*, 61 2001.

Poon Teng Fatt, J. (2000). Fostering creativity in education. Education Summer 2000, 120(4).

Scardamalia, M. & Bereiter, C. (2005). Does education for the knowledge   age need a new science? *European Journal of School Psychology*, 3(1), 21–40.

Schneider, K. D. (1995). The learning and teaching environment. A list apart magazine, ISSN: 1534-0295. Retrieved July 25, 2011 from www.alistapart.com/stories/alternate/test.html.

Scholastic Inc. (2009). Classroom Organization: T he Physical Environment. Developing Foundations for Early Childhood Success. [Internet-25.07.2011] www.Classroom Organization the Physical Environment Scholastic_com.htm.

Sharma, R. (2004). Emotional intelligence and creativity of school students. *Gifted Child Quarterly*. Sternberg 2003.

Schneider, K. D. (1995). The learning and teaching environment. A list apart magazine. Retrieved August 21, 2010 from http:// www.alistapart.com/stories/alternate/test.html.

Scholastic Inc. (2009). Classroom Organization: T he Physical Environment. Developing Foundations for Early Childhood Success. Retrieved September 13, 2010 from   http://www. Classroom Organization the Physical Environment Scholastic_com.htm.

Sternberg, R. J. (2006). Creativity is a habit (Commentary). *Education Week*, 47.

Sternberg, R. J. & Grigorenko, E. (2004). Why we need to explore development in its cultural context. Merrill-Palmer Quarterly, 50 (3), 369-386

Steveni, M. (1968). *Art and Education*. London: B. T. Batsford Ltd.

Teachnology (1998). Learning environment. Retrieved July 25, 2011 from http://www.teach nology.com/glossary/terms/l/.

Thompson, N. E., & Wheeler, J. P. (2008). Learning Environment: Creating and Implementing a Safe, Supportive Learning Environment. *Journal of Family and Consumer Sciences Education*, 26(National Teacher Standards 2), 33-43.

Torrance, E. P. & Goff, K. (1990). Fostering Academic Creativity in Gifted Students. ERIC EC Digest #E484. ERIC Clearinghouse on Disabilities and Gifted Education, CEC

Treffinger, D. (1977). Introduction to Creativity and Giftedness: Three Decades of Inquiry and Development (Publication details not available).

Tudor, R. (2008). "The Pedagogy of Creativity: Understanding higher order capability development in design and arts education". Proceedings of the 4th International Barcelona Conference on Higher Education, 4. Higher education, arts and creativity. Barcelona: GUNI. Retrieved August 23, 2011 from http://www.guni-rmies.net.

Yuen-Yee, G. C. & Watkins, D. (1994). Classroom environment and approaches to learning: an investigation of the actual and preferred perceptions of Hong Kong secondary students. *Instructional Science*, 22 (3), 233-246.

Yu-Min C., Hsiao-Hui Y., Chy-Ling K. & Hung-Wen C. (2001). A Study On The Teaching Environment Perception For College Students, International Conference on Engineering Education, Oslo, Norway, Aug. 6 - 10, 1-6.

Zualkernan, I. A. (2004). Knowledge platform: Towards a framework for developing authentic constructivist learning environments in semantically rich domains. Retrieved May 5, 2011 from http://www.izualkernan/ausharjah/constructivist semantically rich   domain. pdf.

Table 1: Demographic Table (N=250)

	Variable	Freq.	%
1	School & Gender:(1) Public school- Male	93	23.7
	Female	103	26.3
	(2) Private school- Male	102	26.0
	Female	94	24.0
2	Class and age: (1) Primary 5- 9 years	1	0.26
	10 years	43	11.0
	11 years	55	14.0
	12 years	19	4.8
	13 years	16	4.1
	14 years	9	2.3
	15 years	7	1.8
	(2) Primary 6- 9 years	0	0.0
	10 years	10	2.6
	11 years	71	18.1
	12 years	63	16.1
	13 years	53	13.5
	14 years	27	6.9
	15 years	11	2.8
	16 years	5	1.3
	17 years	2	0.5

Table 2: A t-test comparison of perception of creativity development of pupils in public
and private owned schools

N=250

Variables	N	X	SD	df	t-obs	t-crit	P	Remark
Public	196	56.56	4.886	328	-7.586	1.96	<.05	Sig
Private	196	59.68	3.074					

Table 3: Analysis of variance of pupils` perception of creativity development based on age
and class

Variables		SS	df	MS	F	Sig
Age	Between Groups	333.145	8	41.643	2.239	.024
	Within Groups	7122.220	383	18.596		
	Total	7455.365	391			
Class	Between Groups	21.853	1	21.853	1.147	.285
	Within Groups	7433.512	390	19.060		
	Total	7455.365	391			

Table 4: T-test comparison of pupils` perceptions of creativity development based on gender and school type.

	Variables	N	X	SD	df	t-obs	t-crit	P	Remark
Public	Male	93	57.05	4.087	194	1.358	1.98	>.176	Not sig.
	Female	103	56.11	5.490					
Private	Male	102	59.54	3.196	194	0.684	1.98	>.495	Not sig.
	Female	94	59.84	2.945					