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INFLUENCE OF TEACHING METHODS ON COMPETENCE OF FASHION AND DESIGN STUDENTS

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Abstract

Purpose: The purpose of this research was to assess the influence of teaching methods on competence of fashion and design students.

Methodology: A qualitative textual evaluation method was used in this research. Textual analysis consists of review and interpretation of scripts and articles and their inferential context. The research involved literature search and paper review of information on silk fashion growth. The study adopted a desktop literature review method (desk study).

Results: The study recognized poor students approach to learning creativity; specifically, the non-application of analytical, conceptual and synthesical skills in solving problems. It is expedient to re-iterate that tutors are foremost in the education sector and they make the most difference in knowledge acquisition. Tutors should therefore continuously improve on their professional knowledge and practice by exploring creative applications and nurturing students' creativity at every opportunity. It is widely believed that tutors who vary their instruction possess more professional expertise and produce more learning in their students than do tutors who use the same approach to meet all their learning goals.

Unique contribution to theory, practice and policy: The study recommend that lecturers should not solely direct their teaching towards attainment of good examination results. Student should be assisted by their lecturers to take up work placements relevant to their programmes of study to enable them to acquire additional competency skills from experts in the industry.

Keywords: *teaching methods, fashion and design, learning creativity, professional expertise*

INTRODUCTION

Today, many of the internationally acclaimed fashion designers create original products using inspiration from various historical and contemporary sources. Majority of the apparel designers develop new products of various types in accordance with the trends set by the leading international designers (Abrami et al., 2008). Style is one of the most important aspects in garment design. Fashion design involves the designer thinking of a garment, sketching it and then sewing it together. There are three techniques that are core to the realization of the design concept and finally construction of the garment design. These are: the flat pattern making, draping design and CAD technique (Kaindi et al., 2016). According to Sarpong, Howard and Amankwah (2012), the

one fervent wish of modern students of dress design and pattern making is to translate their designs into finished garments as speedily as possible. This desire is further fuelled by the fashion design industry with large turnover of styles every year. The prospective fashion designer must be artistically creative and understand technical aspects of design. Fashion design is highly competitive and the more prepared the aspiring designers are, the more easily they will broaden their opportunities. Abrami et al., (2008) posits that draping is done by cutting and shaping the muslin or garment fabric on a dress form to create a pattern. The designer sees the proportions and lines of the design exactly as they will look on a human-like figure (body form). Draping is ideal for soft flowing designs. The method is mainly used for producing couture dresses and evening wear. In flat pattern design, however, basic patterns of bodices, sleeves, pants or skirts are draped or drafted. The flat pattern method uses angles, rulers and curves to change existing board patterns. Computer-aided design systems have small graphic patterns that are manipulated on the computer screen by the pattern maker. The use of geometry drivers makes infinite number of changes to the shapes and sizes of the patterns. The large quantity of styles produced in the fashion industry demands from today's designer and pattern cutter a great degree of versatility and knowledge of pattern making (Sinha, 2002). Sternberg (2006) observes that fashion design students feel that the training they receive in apparel CAD does not adequately prepare them to undertake CAD-related jobs in the apparel industry. Amankwah (2007) notes that pattern making, draping design and CAD techniques are critical to the fashion designer's concept that is being made into a garment. Each of these techniques serves the purpose of creating a style pattern that can be used to construct the designer's concept. It is important to remember that without using one of these techniques, it is almost impossible for a new fashion design concept to be made into a wearable garment. Abrami et al., (2008) notes that a good pattern maker must learn how to drape a pattern on a dress form, draft perfect flat patterns and create patterns by computer. This is because their first job placement maybe as a sample cutter or pattern grader.

Studies have shown that many fashion design graduates of the Technical Universities were finding it difficult to establish their own fashion design businesses or secure jobs with the garment industry largely due to creative skills gaps. cursory observation and discussion with some fashion design professionals in the Western Region revealed the lack of creativity in the fashion graduates. Creativity is a talent that almost everyone has to some degree but the extent to which it is developed makes a lot of the difference. The ability to recognize and creatively exploit opportunities has become an essential skill (Florida, 2002). Of course, it takes hard work, creativity and true passion for fabulous designers to achieve success as fashion designers (Lauren, 2007). To be successful in the dress-making industry, it is very critical for the students of fashion to have adequate and appropriate training in all facets of the industry with greater focus on acquiring dexterity in idea and inspirations development techniques, critical thinking and creative design skills. In the ever changing world of the fashion industry, creative skills are imperative (Karpova, Marcketti & Barker, 2009). The highly competitive nature of the fashion industry requires that students of fashion are trained to become life-long learners who can think critically and solve problems. The sophisticated tastes of consumers have compelled many fashion institutions to re-design their curricula to focus on subjects like critical thinking, problem solving and fashion marketing to adequately prepare students for the competitive fashion market. It is imperative for fashion

designers and students of fashion to be creative and original in their designs to become successful in their professions; having the ability to use imagination to make original patterns and outfits

Concept of creativity

There are many definitions of creativity as there are researchers in this field. The range of scholarly interests in creativity includes a multitude of definitions and approaches involving several disciplines: psychology, cognitive science, education, philosophy, sociology etc. Guilford (1950) defined creativity exclusively as a mental process. Sternberg (2006) indicated that creativity overlaps with intelligence, cognitive style and personality or motivation. He added that intellectual dimension of creativity deals with problem finding and problem definition. Boden (1994) defines creativity as producing something that is novel or different. He also said in order for this new idea to be interesting it needs to be intelligible and easily understood. Court (1998) presented another definition stating that the ability of human intelligence helps individuals to use their imagination to produce original ideas and solutions. To be a successful fashion designer, one needs broad talents including artistic and creative skills. A designer should be able to visualize an outfit before sketching a single stitch, possess a range of style and have the ability to constantly dream up fashion ideas. The problem solving process should be kept democratic and keep the students' energy level high by keeping them engaged and alert by watching the size of the group. Ballie (2003) says it is better to have a group size that does not exceed three people. Students should be made to solve problems that mean something to them.

Creative process

Theories that focus on the creative process aim to understand the nature of the mental mechanisms that occur when a person is engaged in creative thinking or creative activity. All creative professionals have different workflows and systems leading to successful end point but the general sequence of processes is usually the same ranging from three (3) to seven (7) stages. Being able to develop a valuable and unique idea is the most important activity in the fashion design process. How do you keep ideas flowing? How do you create a wealth of ideas to choose from? How do you make sure that you generate a fascinating idea that will hit the headlines or stand out from the rest? Some people like to wait for inspiration to strike whilst most professionals use a generic formula or model to produce ideas. One such model is the Wallas' five stage formula. Wallas (1926), presented one of the first models of the creative process. In the Wallas stage model, creative insights and illuminations may be explained by a process which consists of 5 stages:

- Preparation- preparatory work on a problem that focuses on the individual's mind and explores the problems' dimensions.
- Incubation - where the problem is internalized into the unconscious mind and nothing appears externally to be happening.
- Intimation - the creative person gets the 'feeling' that a solution is on its way.
- Illumination or Insight - this is where the creative idea bursts forth from its preconscious processing into conscious awareness.
- Verification- where the idea is consciously verified, elaborated and then applied.

Creativity is an essential element of problems (Mumford et al, 1991) and of critical thinking (Abrami, 2008). We all solve problems on daily basis in academia, at work, church and in our day to day lives. Problem- solving has been defined in several ways. One simple yet meaningful definition describes a problem as a need which must be met (Ritz et al 1986). This need could come from agriculture, sanitation, fashion or health. How important is problem solving in creativity? Few would argue that teaching problem solving is unimportant in any field. Problem solving is a higher level of thinking skill. We need to be able to evaluate data or information, break them down into key components, consider various ways of approaching and resolving them in the most appropriate way. Problems can also be opportunities: they allow you to see things differently and to do things in a different way and perhaps to make a fresh start. There are many creative problem solving (CPS) models ranging from four to eight stages. Some of these models have already been examined under the creative process. The process of critical thinking requires a complex combination of elements that include cognitive flexibility, memory control and analogical thinking, enabling the mind to free- range and analogize as well as to focus and test. It allows individuals to gain a more complex understanding of information they encounter and provide good decision-making and problem solving in real world applications (Butler, 2002). Facoine (2011, p.26) says it is a “purposeful, selfregulatory judgment which results in interpretation analysis, evaluation and inference, as well as explanation of the evidential, conceptual, methodological, criteria logical or contextual considerations upon which that judgment is based”. Sumner (1906) has explored the notion that critical thinking can occur whenever one judges, decides or even solves a problem. Sumner further says that, in general, whenever one must figure out what to believe or what to do, and do so in a reasonable and reflective way. Speaking, writing, reading, and listening can all be done critically or uncritically. He says further that critical thinking is a way of taking up the problems of life. Critical thinking and problem solving skills are key skills that students in higher institutions must acquire and constantly apply in solving problems in various fields. Critical thinking which links to heightened individualism which Le Cornu (2009) considers is not so prevalent and suggests that education at all levels should train people in three principal types of thinking and reflection namely: receptive, appreciative and critical.

LITERATURE REVIEW

Teaching and learning are opposite sides of the same coin, for a lesson is not taught until it has been learned (Farrant.1980). “Learning is the process by which we acquire and retain attitudes, knowledge, understanding, skills and capabilities that cannot be attributed to inherited behaviour pattern or physical growth” (Farrant, 1980 p.105). Teaching and learning is an activity of imparting knowledge, skills, attitude and idea from one person to another (Banahene and Sarfo, 2010). Banahene and Sarfo explained that the person engaged in the act of impartation are the teacher and the person receiving the knowledge, skills, and attitude is the learner. It is expected that once the teaching activity takes place, there should be change in the knowledge base of the learner, in other words, teaching is said to result in learning. Teaching is a skill tutors should have, to be able to transfer knowledge effectively and efficiently. Hence, a teacher needs the skills to be able to deliver his/her lessons. The American Psychological Association (2011) defines the term teaching skills as contained in the ‘ready to teach Act’, H R 2211 as “skills that are based on scientifically based research; enable teachers to effectively convey and explain subject matter content; lead to

increased academic achievement; uses strategies that are specific to the subject matter; include on-going assessment of students learning, focus on identification and tailoring of academic instruction to students specific learning needs; focus on classroom management”. Classroom management also called classroom discipline has been a priority for teachers. Amoakohene (2008) said, classroom management involves the direction of human activities and since teachers direct the teaching and learning activities, they are considered managers and they need to organize, co-ordinate, control, communicate and lead the students.

Farrant (1980) further explained that each type of learning goes by a different name: Affective learning- has to do with feeling and values and therefore influences attitudes and personalities. Cognitive learning-is achieved by mental process such as reasoning, remembering and recall. It helps in problem solving, new ideas development and evaluation. Psychomotor learning- has to do with development of skills which require efficient coordination between our brain and muscles. Farrant (1980) says teaching can be thought of as a process that facilitates learning. He explains further that in the process, the teacher has an important role to play because he acts like a catalyst stimulant. He further explains that by giving careful considerations to such issues like teaching methods and by supplementing direct teaching in indirect support, the teacher can achieve a total effect that can extremely be enjoyable of his or her student. With regards to skills acquisition, Murphy and Moon (1990) are of the view that for a student to be able to understand and remember anything taught, there should be a connection between practices and teaching of the students. Wareign Drew and Shreeve (2008) reasoned that there are a number of ways skills acquisition can be eased. These are as follows: -Budding -In an open studio, students can learn from more experienced students in a buddy system. Students can either be paired up with a buddy from a year above or groups can be created from all years of the course. The tutor has to initiate this but once social bonds are in place, students can teach each other new skills like computer programs, coral draw, photo-shop and Auto card.

METHODOLOGY

This involved an in-depth review of studies related to the influence of teaching methods on competence of fashion and design students. The research involved literature search and paper review of information on teaching methods applies in the teaching of fashion and design. This article reviewed recorded sources to present the current state of competence of fashion and design teaching approaches. The study adopted a desktop literature review method (desk study). In line with Creswell’s assertion that observations are important for obtaining first-hand knowledge that enriches analysis results, under different themes, the study revealed observations made from the recorded sources. Where appropriate, the review on how to rethink and reorganize what is being done to consider effective teaching approaches applicable especially in fashion training was done. Based on the findings, recommendations will also be raised in reference to the methods appropriateness.

FINDINGS

Education is a key to the development of every individual, the society and the nation as a whole. Barrow and Wood (1997) describe education as a process that involves the transmission of

worthwhile things to individuals in a morally accepted manner. Brown, Oke, and Brown (1985) state that the main objective of education is to bring positive change to learners and the society in general. Societies expect all individuals to be educated and to use what they acquire through education to earn a living as well as contribute to the national development. In Ghana the highest terminal point of education is the tertiary level. For this reason, lecturers teaching in the tertiary institutions, especially, technical and vocational career oriented education like fashion and textiles, are expected to equip students with key skills and knowledge that will make their graduates employable. The researchers' willingness to contribute positively toward the improvement of the effectiveness of their teaching is what informed this study which seeks to evaluate the teaching of Fashion Design and Textiles Studies in the tertiary institutions of Ashanti, Central and Western Regions of Ghana and suggests feasible strategies that can be adopted to foster effective teaching and learning of the programme. The Fashion and Textiles Studies programme is vocational and technical based, therefore, the students are expected to be trained and equipped with employable skills, competencies and knowledge that will make them capable of fulfilling the manpower needs of the nation to earn a meaningful living and contribute to the improvement of the socio-economic development of the nation. To achieve this, the government of Ghana is increasingly envisaging skills development of the citizens as an important factor contributing towards enhancing productivity, stimulating economic competitiveness as well as taking people out of poverty (Amankwa, 2007).

Specialized career and technology oriented courses taught under the Fashion and Textiles Studies programme include; Pattern Technology, Garment Technology, Fashion Drawing and Illustration, Textiles, Creative Design and Working Drawings, Millinery and Dress Accessories, Clothing Production Technology, History of Fashion, Beauty Care and Culture, Fashion Marketing and Merchandizing, Industrial Attachment, Business Law and Projects (Accredited syllabus for HND Fashion Design and Textiles Technology, 2007). Currently, special emphasis is being put on the study of Technical and Vocational Education at the tertiary level with the hope that, relevant and key skills would be acquired to enable graduates from such institutions contribute to the socio-economic development and progress of the nation (Amankwah, 2007; Ministry of Education, 2003). Writing on concept of teaching and learning Olaitan (1994) describe teaching as an attempt to bring about desirable changes in human abilities and behaviours. Farrent (1990) affirms that teaching is a process that facilitates and enhances change in behaviour of learners adding that it requires someone with a professional skill to transfer skills and knowledge to learners. These writers express a common view that, teaching brings a change in behaviour of the individual. Studio activities such as demonstration and practical works that involves development of psychomotor skills are important examples of strategies that bring about change in behaviour of a student (Cock and Hughes, 1995). Brown et al (1985) attests that the principal stakeholders involved in the teaching and learning activities are the teacher and the learner. It is the teacher who imparts the knowledge, skills and competencies to students, and it is the students' duty to acquire these and make meaningful use of them. Hence, the teacher's ultimate task is to influence and facilitate effective learning in students.

Learning can be an in-born trait or an acquired art by the individual, leading to the postulation of many theories of learning. One of the learning Models that are employed in many Institutions of

Learning is the Facilitation theory (the humanist approach). Carl Rogers and others have developed the theory of facilitative learning. The basic premise of this theory is that learning will occur by the educator acting as a facilitator; that is by establishing an atmosphere in which learners feel comfortable to consider new ideas and not threatened by external factors (Laid, 1985). This theory is predicated on the belief that a person has the natural tendency to learn and this is enhanced by a facilitative teacher who provides the necessary guidance and right environment for the learner to acquire knowledge.

The facilitative teacher listens to learners, especially to their feelings. They pay much attention to their relationship with the learner, apt to accept feedback, both positives and negatives and to use it as “constructive insight into themselves and their behaviour.” This model or learning strategy promotes students’ self-confidence and willingness to explore new areas, projects or ideas on their own. The advantage of this model is that, learners are encouraged to take responsibilities for their own learning, providing much of the input for the learning which occur through their own investigation and concentrate on factors that contribute to solving problems. Tutors and students could adopt the facilitation theory or use other learning models to teach and learn fashion creativity.

It is pertinent to state that the teacher who fosters critical thinking fosters “reflectiveness” in students by asking questions that will stimulate thinking; essential to the construction of knowledge. For students to learn, intellectual engagement is crucial; in that all students must do their own thinking and make their own construction of knowledge. In summary, it is pertinent to reiterate that creative work requires applying and balancing three abilities that can all be developed (Sternberg 1985):

- Synthetic ability is what we typically think of as creativity. It is the ability to generate novel and interesting ideas. Often the person we call creative is a particularly good synthetic thinker who makes connections between things that other people do not recognize spontaneously.
- Analytic ability is typically considered to be critical thinking ability. A person with this skill analyses and evaluates ideas. Without well-developed analytical ability the creative thinker is likely to pursue bad ideas. The creative individual uses analytic ability to work out the implications of creative idea and to test it.
- Practical ability is the ability to translate theory into practice and abstract ideas into practical accomplishment. The creative person uses practical ability to convince other people that an idea is worthy. Practical ability is also used to recognize ideas that have a potential audience. Creativity requires a balance among synthetic, analytic and practical ideas. The person who is only synthetic may come up with innovative ideas, but cannot recognize or sell them. The person who is only analytical may be an excellent critic of other people’s ideas but is not likely to generate creative ideas. The person who is only practical may be an excellent sales person, but is likely to sell ideas or products of little value. Encourage and develop creativity by teaching students to find a balance among synthetic, analytic and practical thinking. Creative attitude is at least as important as are creative thinking skills (Schank, 1988).

CONCLUSION

This study examined the effectiveness of the methods and models used in teaching and learning creativity in fashion in the Technical University and how that could be enhanced to prepare students to become innovative and creative fashion designers. The research revealed a number of key gaps in the teaching and learning of creativity. Key amongst them is the use of largely the traditional methods of lecture, hand-outs and textbook to teach and learn creativity in fashion rather than the use of evidenced- based critical thinking and problem solving models. The study also recognized poor students approach to learning creativity; specifically, the nonapplication of analytical, conceptual and synthesical skills in solving problems. It is expedient to re-iterate that tutors are foremost in the education sector and they make the most difference in knowledge acquisition. Tutors should therefore continuously improve on their professional knowledge and practice by exploring creative applications and nurturing students' creativity at every opportunity. It is widely believed that tutors who vary their instruction possess more professional expertise and produce more learning in their students than do tutors who use the same approach to meet all their learning goals. Research confirms this belief, and professional organizations endorse the need for instructional alternatives.

RECOMMENDATIONS

The study recommend that lecturers should not solely direct their teaching towards attainment of good examination results. Emphasis of their classroom activities should be laid on helping students to acquire key skill that will lead them onto appropriate employment. Relevant work experience is very vital; hence the need for work placement cannot be overemphasized (Brennan, 2000). Student should be assisted by their lecturers to take up work placements relevant to their programmes of study to enable them to acquire additional competency skills from experts in the industry. To strengthen the teaching and learning of creativity, the following steps could be followed: -

- Model creativity-The most powerful way to develop creativity in your students is to be a role model. Students develop creativity not when you tell them to, but when you show them.
- Build self-efficacy: - All students have the capacity to be creators and to experience the joy associated with making something new. Tutors should not limit what the students can do but help them believe in their own ability to be creative.
- Question Assumptions: - Creative people question assumptions that can lead to positive or new ways of doing things. Tutors can be role models for questioning assumptions and should teach students to question assumptions. Tutors should help students to learn how to formulate good questions and how to answer them. Make questioning a part of the daily classroom exchange.
- How to define a Problem-Promote creative performance by encouraging students to define and redefine problems and projects. Encourage creative thinking by encouraging students choose their own topics for papers or presentations or choose their own ways of solving problems.

- Encourage idea Generation-Once the problem is defined or redefined, it is time for students to generate ideas and solutions. The environment for generating ideas should be relatively free of criticism. Aim to identify and encourage any creative aspects of the ideas presented and suggest new approaches to any idea. Praise the students for generating many ideas, regardless of whether some are silly or unrelated.
- Allow time for creative Thinking-Most creative insights however do not happen in a rush (Gruber, 1986). We need to understand a problem and to toss it around. If you want to encourage creativity, you need time to do it well.
- Instruct and assess creativity-If you give multiple-choice tests, students quickly learn the type of thinking that you value. If you want to encourage creativity, you need to include at least some opportunities for creative thought in assignments and tests. The tutor should ask questions that require factual recall, analytic thinking and creative thinking.
- Encourage sensible Risks-Creative people take risks and defy what is the norm. Creative people take sensible risks and produce ideas that others ultimately admire and respect as trend setting. Nearly every major discovery or invention entails some risk.
- Allow Mistakes-When your students make mistakes, ask them to analyze and discuss these mistakes. Often, mistakes or weak ideas contain the germ of correct answers or good ideas.
- Encourage creative Collaboration-Collaboration can spur creativity. Encourage your students to collaborate with creative people because we all learn by example. Students benefit from seeing the techniques, strategies and approaches that others use in their creative process.
- Teach self-Responsibility-Part of teaching students to be creative is teaching them to take responsibility for both success and failure. Teaching students how to take responsibility means teaching students to understand their creative process, criticize themselves and take pride in their best creative work.
- Grow creativity-Once we have a major creative idea, it is easy to spend the rest of our career following up on it. Being creative means stepping outside the boxes that we and others have created for ourselves.
- Reward creative Ideas-Remember to reward creative ideas. Assign a Project and remind students that you are looking for them to demonstrate their knowledge, analytical and writing skills and creativity and reward them accordingly.

REFERENCES

- Abrami, P. C., Bernard, R. M., Borokhovski, E., Wadern, A., Surkes, M.A., Tamim, R. (2008). Instruction interventions of affecting critical thinking skills and depositions' stage 1 meta-analysis. *Review of Educational Research*, Vol.78. No.4, pp.1102-1134.
- Amoakohene, S.K. (2008). *Teaching and learning in higher education*. Kumasi: Seneps publication.
- Ballie, C. (2003). *The traveling case: creativity in art, science and engineering*.UK: center for material education.

- Banahene, N.O.O., & Sarfo, F.K. (2010). *An introduction to general principles and methods of teaching*. Accra: Marlik Ltd.
- Barrow, R. and Wood, R. (1997), *Introduction to Philosophy of Education*, UK: Biddles Ltd.
- Boden, M. A. (1994). Agents and creativity in communications of the ACM 37, number 7, 117-121.
- Brown, N., Oke, E. and Brown, D.P. (1985), *Curriculum and Instruction: an Introduction to Methods of Teaching*. U.K: Macmillan Publishers, Ltd.
- Butler, S. (2002). Fashion's next battleground. London: EMAP Fashion Ltd. Drapers record, p.6.
- Cock, H. and Hughes, D. (1995). *Research and the Teacher*, U.K: Routledge
- Court, A. (1998). Improving creativity in engineering design education. *European Journal of engineering education* 23, number 2.
- Farrant, J.S. (1980). *Principles and practice of education*. England: Longman Group.
- Florida, R. (2002). *The rise of the creative class how it's transforming work, leisure, community and everyday life*. NY: Basic Books
- Guilford, J.P. (1950). *Creativity*, American psychologist. San Diego, CA: KNAPP.
- Kaindi, I. J., Mburugu, K., Nguku, E., & Obere, A. (2016). The Competencies of Fashion Design Teachers in Public Institutions of Higher Learning in Nairobi County, Kenya. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, 26(1), 278-291.
- Karpova, E., Marcketti, B.S., & Barker, J. (2009). The efficiency of teaching creativity: Assessment of student creative thinking before and after exercises. Ames, IA, USA: IOWA State University Press.
- Lauren, R. (2007). *Fashion design and creativity*. New York: Culture Kioque.
- Le Cornu, A. (2009). Meaning, Internationalization and Externalization: towards a understanding of the process of reflection and its role in the construction of the self. *Adult education quarterly* Vol.59 Number 4
- Mumford, M.D., Mobley, M.I., Uhlman, C.O.E., Reiter-Palmon, R., & Doare, L.M. (1991). Process analytic models of creative capabilities. *Creativity Research Journal*, 4, 91-122.
- Murphy, P., & Moon, B. (1990). *Developments in learning and assessment*. New Castle: Atheneum Press Ltd.
- Olaitan, S.O. (1994). *Vocational and Technical Education in Nigeria: Issues and Analysis*, Onitsha: Noble Graphic Press
- Ritz, J.M., Deal, W.F., Hadley, F., Jacobs, J.A., Kildruff, T.F., & Skena, K.G. (1986). *Problem-solving in McCade, J. (2011). Problem solving: much more than just design*. Pennsylvania: Millersville University.

Sarpong, G. D., Howard, E. K., & Amankwah, A. (2012). Teaching of fashion and textiles studies in Ghanaian tertiary institutions.

Schank, R.C. (1988). *The creative attitude: Leading to ask and answer the right questions*. New York, Macmillan.

Sinha, P. (2002). Creativity in fashion. *Journal of Textile and Apparel, Technology and Management*, 2(4), 1-16.

Sternberg, R. (2006). The nature of Creativity. *Creativity Research Journal* 18, number 1

Sternberg, R. J. (1985). A state wide approach to measuring critical thinking skills. *Education leadership*, No 43.

Sumner, W. (1906). *Folkways: A study of the sociological importance of usages, manners, customs, mores, and morals*. New York: Ginn and Co.

Wallas, G. (1926). *The art of thought*. New York: Harcourt Brace.

Wareign, S., Drew, L., & Shreeve, A. (2008). *A handbook for learning and teaching in higher education*. London: Kogan page.