TECHNOLOGICAL TEACHING STRATEGIES OF VOCATIONAL SKILLS TUTORS AND STUDENTS' CREATIVE SKILLS ACHIEVEMENTS IN FASHION DESIGN IN GHANA COLLEGES OF EDUCATION

VIDA ADZO AMEGBANU

E83F/25173/2018

A THESIS SUBMITTED IN FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN EDUCATION TECHNOLOGY IN THE DEPARTMENT OF EDUCATIONAL COMMUNICATION AND TECHNOLOGY, SCHOOL OF EDUCATION OF KENYATTA UNIVERSITY

JUNE, 2024

DECLARATION

I declare that this thesis is my original work and has not been presented for a degree in any other university.

Signature ..... Date……**05/06/2024**…..……

Vida Adzo Amegbanu

E83F/25173/2018

Supervisors' Declaration

We confirm that the work reported in this thesis was carried out by the candidate under our supervision and has been submitted with our approval as University Supervisors.

Signature ..... Date…**05/06/2024……**

Professor Samson Rosana Ondigi

Department of Education Communication and Technology, Kenyatta University

Signature ..... Date**……05/06/2024……**

Dr. Elizabeth Bosibori Oigo

Department of Fashion Design and Marketing, Kenyatta University

DEDICATION

To my mother madam Phidelia Abla Dzikunya and my children Derrick Mawuli Nyaitsi and Marjorie Ama Mawuenam Ati.

ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to my supervisors, Professor Samson Rosana Ondigi and Dr. Elizabeth Bosibori Oigo, for their conscientious insight that made my academic dream come true. You are indeed the cornerstone of this academic milestone. I am also grateful to my family and friends who prayed with me throughout this research work. I wish to thank all the staff in the Department of Educational Communication and Technology, Kenyatta University, for their support and encouragement from the beginning to the end of this research work.

I further wish to express my appreciation to the Director of the National Council for Tertiary Education, Accra, Ghana, the principals of the College of Education in Ashanti Region, and all the tutors and students of the College of Education who assisted me during my data collection. My sincere thanks also go to my institution staff members for their support, encouragement, and for providing an environment conducive to my study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

CAD	Computer-Aided Design
CoE	College of Education
GTEC	Ghana Tertiary Education Commission
NCA	National Curriculum Action
NCTE	National Council for Tertiary Education
SPSS	Statistical Package Social Sciences
TEL	Technology-enhanced learning
TLMs	Teaching and Learning Materials

ABSTRACT

The purpose of this study was to investigate the technological teaching strategies of vocational skills tutors and students' creative skills achievements in fashion design in Ghana colleges of education. The objectives of the study were: to establish (a) the teachers' and (b) students' factors that promote creative teaching and learning in fashion design; to determine the pedagogical strategies that promote creativity in fashion design; to assess the relevance of curriculum content in terms of promoting creative learning in fashion design; to identify gender influences on creative achievement among students in fashion design ;and to investigate challenges facing teachers and students in the achievement of creativity in apparel construction. Model flow theory and cognitive theory served as the study's guiding theories. Because a descriptive survey design can gather a lot of data in a short amount of time, it was chosen. Methods for gathering both quantitative and qualitative data were applied. Five colleges of education in Ghana's Ashanti Region participated in the study. Principals of colleges and instructors of fashion design were chosen using the intentional sampling technique. Six (6) districts in the Ashanti region were chosen using stratified random sampling. These districts included five colleges with a combined population of 573 people, including principals, teachers, and students. Thirty percent (30%) of learners, sixty percent (60%) of teachers, and one hundred percent (100%) of principals were involved in the study. There were 188 participants in the study: 5 principals, 18 instructors, and 165 students. Questionnaires for instructors and students, and a guide to interviews for college principal, were the research instruments used to gather data. The checklist was used to verify that the recommended data collecting techniques were being used in the syllabus, computers, equipment, and surroundings. Descriptive and inferential statistics were used to analyze quantitative data. Frequency tables, percentages, means, and their corresponding standard deviations were utilized in conjunction with descriptive statistics to compile, organize, and elucidate the participant's biographical information as well as the operational features of the remaining independent variables. The chi-square goodness of fit inferential statistics was employed to assess the proposed null hypotheses. Every hypothesis was examined at the significance threshold of $p<0.5$ alpha. Qualitative information was gathered under several topics. The findings revealed that teacher factors such as focusing on students' interest and adopting a student-centered approach, posting students, posing a question, and allowing alternative brainstorming to bring out new ideas and tutors interest in mastering curriculum-aided design were discovered to encourage creative teaching and learning in fashion design. Students have additional opportunities to connect with their creativity when materials and data from the internet are outsourced. Experiments and project-oriented inquiry, in which students work independently on projects yet are free to ask teachers questions, are examples of pedagogical strategies that support students' development of fashion design creativity. The study recommends that the Ministry of Education and other stakeholders should allocate funds to improve infrastructure in the colleges of education, like classrooms with internet facilities, so as to enhance teaching and learning creativity in fashion design.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The fashion design industry has a critical role in the economic growth of various states across the globe by generating employment for skilled and unskilled people in society (Abdulai, Mohammed & Kwadwo, 2016). In the world of fashion, every new style begins with a creative idea. According to Murzyn-Kupisz and Hołuj (2022), a creator of footwear, clothes and accessories defines their fashion. The practice encompasses a variety of skills beginning with one's abilities in market research, creative sketching and selecting appropriate fabric, manipulation of tools and materials, diverging thinking and critical thinking. Fashion design, thus, involves in-depth thought. It is an innovation that pens avenues to new ideas, unique approaches, new perceptions of circumstances in learning and doing things. This explanation of creativity demonstrates that it is a process that requires time due to the deliberate actions and material and tool manipulation involved.

From a sociocultural perspective, creativity is important because it helps us adapt to society and provides the tools to change it. In the end, even the most individualized or private creative endeavors have a larger, societal function. establishing channels of communication, including internal ones, in order to relate to the outside world, which is always a world in which other people exist as well (Glăveanu, 2018). In order to mold our own attitudes and perspectives and, ultimately, alter the social and material environment for everyone, we must first open ourselves to others and their positions and perspectives. This is primarily accomplished through the process of creativity. Therefore, the act of creating invariably raises a host of moral dilemmas as well as a

shared sense of accountability for oneself, other people, and society. (Moran., Cropley & Kaufman 2014).

According to the OECD 2015 Creativity is vital because it enables people to adapt and act as change agents, For the benefit of society as a whole (both economically and culturally) as well as for their own personal well-being, people must be able to adjust to the fast-changing world, developing resilience, tolerance, and flexibility in the face of change. According to Cropley (2020), the term "creativity" has three meanings: it can describe a group of behaviors (like "creative" thinking), a collection of traits (like "creative" personalities), or outcomes (like "creative" products). Hence, imagination is viewed as both a cause (e.g., creative forms yield items; peoples imagination causes them to act in a certain way) conjointly as an impact or result (a certain kind of product coming, from individual and process).

The "classic" three Ps approach (person, process, and product—was quickly expanded to include a fourth P: "press" (i.e., environmental pressure, which can either foster or stifle creativity). The capacity to produce, express, or implement original concepts, methods, and viewpoints in a cooperative setting is known as creativity (Lucas & Hanson, 2015). In addition to being associated with the arts, creativity is a prerequisite for innovation and adaptive behaviors and solutions in many spheres of life, including the workplace and educational institutions. This is because creativity interacts with social and personal management abilities. Considering the importance of innovation and creativity for both individuals and society, as well as their role in the creative economy (Florida, 2002; Howkins, 2010), (Csikszentmihalyi, 1997; Robinson, 2011), it is worthwhile to investigate different conceptions of creativity in greater detail. This will help students understand what their teachers mean when they tell them to "be

creative." Research, theory, and practice can be based on educational paradigms, many of which are drawn from the creative industries and the arts (Eisner, 2002; Fleming, 2008; Robinson, 2011). But there are also creative examples and alternatives in fields like business and engineering from which teachings can be cultured (Barrow, 2010; Baillie, 2002; Foley & Kazerounian, 2007, Swirski, 2012; Petocz, & Taylor, 2009;). To be effective, teachers must use combined, innovative academic practices in higher tutoring's technology-enhanced learning (TEL) environments (Goodyear & Retalis, 2010). The information and communication technologies (ICTs) that make up these settings include a complex network of new and developing technologies, including learning management systems, mobile technologies, social media, digital image and content editing software, and file-sharing apps. Since many of these new technologies are quite strong, academics with limited time frequently find it challenging to adequately assess them for their potential and instructional usefulness (Laurillard, 2012). This research examining current practices and beliefs around creativity and the usage of pertinent supporting technology is timely in light of these considerations.

But students' attitudes appear to make it difficult to learn new skills. They are still unable to perform the skills effectively even after graduating from education colleges. Newly graduating students must collaborate with a specialist who has held the position for a considerable amount of time. They will have to rely on direction and instruction. Students cannot be creative while sewing a good dress, pair of pants, or top. This demonstrates that there is a difficulty with young people learning new skills, notably in creativity.

1.2 Statement of the Problem

One of the main outcomes of creative learning and teaching is the capacity to solve real-life difficulties, a trait characterized by ingenuity, originality, and flexibility. Creativity and innovation offer the identity of a Ghanaian and give meaning to garments and traditional attire. Students studying fashion design at the college of education are required to demonstrate their ability to create unique, high-quality clothing for the market. Their learning is facilitated by inventive instructional methods. One worries whether students studying fashion design are creative or copy drawing designs from their associates rather than using their imagination to create original pieces of work when the student trainees employ practical Computer-Aided Design (CAD) assessments. It is concerning that student trainees are unable to translate their thoughts into expressive apparel designs when they utilize CAD instead of using their creativity to make the garment. This is especially true given how quickly fashion technology is evolving.

The Ghanaian fashion industry is likely to become outdated and the uniqueness of Ghanaian clothing would be lost if students in educational institutions continue to imitate and transfer fashion designs. Chan and Yuen (2014) identified that students' creativity was influenced by the pedagogical problems in the classroom and the inability of colleges to assist individuals to solve their own challenges and develop creative skills. Through teaching and learning, students can solve their issues and be creative. Therefore, this study seeks to investigate the technological teaching strategies of vocational skills tutors and students' creative skills achievements in fashion design in Ghanaian colleges of education.

1.3 Purpose of the Study

The main aim of this research was to explore the practical teaching and learning strategies of vocational skills tutors and students' creative skills achievements in fashion design in Ghana colleges of education. The study is crucial in determining the practical, pedagogical, and other factors that influence the creative skills achievement of the trainee teachers.

1.4 Specific Objectives of the Study

The study was directed by the several objectives below:

i. To establish (a) the teachers' and (b) students' factors that promote creative teaching and learning in fashion design.
ii. To determine the pedagogical strategies that promote creativity in fashion design.
iii. To assess the relevance of curriculum content in terms of promoting creative learning in fashion design.
iv. To identify gender influences on creative achievement among students in fashion design.
v. To investigate challenges facing teachers and students in the achievement of creativity in apparel construction.

1.5 Research Hypotheses

The study tested the following null hypotheses:

Ho_1: There is no significant relationship between teachers' and students' factors and creative teaching and learning in fashion design.

H_{02}: There is no statistically significant relationship between pedagogical strategies used by college education teachers that promote creativity in fashion design.

H_{03}: There is no statistically significant relationship between creative teaching and the learning of fashion design.

H_{04}: There is no significant influence of gender on creativity achievement in fashion design.

1.6 Significance of the Study

The primary significance of this research is to contribute to the development of strategies and content for training creativity in fashion design among students. This study should bring out the benefits that creativity in fashion design activities offers students and how to assist instructors viably and effectively handle the subject to instill creative thinking in their students. The study should be important to policymakers and teachers in particular, by advising on the best practices of teaching and methods of mitigating challenges.

Further, it should serve as the present literature review on home economics and act as a resource for researchers and academics interested in studying fashion design and home economics in general. Finally, the study should aid in developing education and vocational training policies in Ghana by acting as a suitable reference that offers reliable recommendations. The study offers a benchmark for past investigations into creativity. This study focused on a broader sample of teachers in Ghana's higher education segment, as opposed to prior cross-disciplinary studies on creativity that concentrated on the opinions of a few excellent instructors in higher education in the Australia (Dawson & McWilliam, 2007) and in UK (Fryer, 2006).

Beyond the scope of earlier studies, this research examined perceptions of the effects of ICTs and delivery strategies on the outcomes of imaginative learning and educating, as well as the correlation between imagination and other cognitive forms. The setting that fosters creativity is of special relevance to this study. The abundance of technology that teachers must contend with as they go about their everyday proficient practice and plan for imaginative teaching and learning is one of the major contributing features of the context. Higher education's technology-enhanced learning (TEL) environments offer practitioners both constraints and opportunities. This study significantly advances the theoretical knowledge of contextual impacts as they relate to the higher education's creativity growth, an area that is understudied at the moment.

1.7 Assumptions of the study

The study was founded under the presumption that:

i. The selection of different professional expertise courses is done intentionally by the students themselves, which they are generally fascinated by taking. Moreover, students take their training exceptionally genuinely and are committed to procuring particular inventive abilities that they have enlisted in.
ii. Students possess optimistic attitude toward computer-aided design in the process of learning fashion design.

1.8 Delimitation

This research was delimited to institutions of education within the Ashanti locale of Ghana offering fashion design. It was restricted to tutors and students learning and teaching design of fashion in the Ashanti Region's College of Education. Nourishment

and nutritional components, as well as the domestic administration portion of the educational modules of the colleges of education, did not frame portion of this study. There are several teaching strategies, but this study focused on practical teaching strategies used by colleges of education vocational skills tutors.

1.9 Limitation

The study faced some challenges, especially during the data collection phase. For instance, some colleges had very tight schedules that made it very difficult for the researcher to access all the respondents on the same day of visit. As such, the researcher had to keep inquiring and making multiple visits in order to ensure all intended respondents fully participated in the study. There were also instances where some participants were not really interested in participating in the study; however, the scholar had to take time to explain to them the benefits of such a study, and eventually the majority willingly took part in the study. It is also imperative to note that the researcher faced obstacles in getting adequate time to repeatedly visit the colleges, some of which kept postponing. To mitigate this, the researcher asked for a time off from work, hence accomplishing the intended goals.

1.10 Theoretical Framework

The research was directed by two speculations, namely, model flow theory and cognitive theory. These theories are significant to this ponder since they include the three domains, to be specific cognitive, affective, and psychomotor, which are critical in instructing and learning creativity in fashion design.

1.10.1 Model Flow Theory

The model theory was advanced by Csikszentmihalyi (1996). He observed that designers showed complete engagement in their work when presented with a difficult challenge. Their artistic pursuits led them to experience a shift in consciousness. The emotions emerged when the designers faced a challenge that tested their physical and mental boundaries, not during leisure time. Because people described feeling "carried away by a current," Csikszentmihalyi named the phenomenon "flow." It turns out that designers encounter this unusual state of consciousness when obstacles are great and personal skills are utilized to the fullest, according to Csikszentmihalyi (1996). They experience engagement, focus, and absorption. Designers receive immediate feedback on their performance and are aware of what has to be done. It was logical to assume that some students studying fashion design at the beginning might show signs of being preoccupied with their profession. A "flow pattern in everyday life" (1996), or "micro flow activities," was first described by Csikszentmihalyi in 1975. It involved connecting ordinary events to what Dewey referred to as finished experiences. He made a special mention of fashion design as falling under the creative area in this study (1996). Csikszentmihalyi (1996) also spoke of amateurs who improved their quality of life by keeping their end in sight and delighting in the flow. Experiences can also give a person's life a new purpose. When an experience is positively related to a person's goals, the emphasis is on originality; it is meaningful. When creators have a goal that justifies their efforts and when the experience has value, it is ordered (Csikszentmihalyi, 1996).

1.10.2 Cognitive Theory

Additionally, Theory of creativity through cognitive processes contends that innovation requires both divergent and convergent thinking as well as the capacity to evaluate creative ideas (supported by Runco, 2011, Jackson & Shaw, 2006; Fryer, 2012; Mance, Puccio, & Murdock 2011). (Runco, 2011; Sternberg, Kaufman & Pretz, 2002). The definition of divergent thinking is "a broad search for many different and novel options" by Puccio et al. (2011) and comprises deferring judgment, generating numerous alternatives, establishing partnerships and looking for creativity. Contrarily, convergent creativity involves "focused and affirmative evaluation of options" (p. 107), which entails using affirmative judgment (taking into account both an option's advantages and disadvantages), maintaining novelty, examining goals, and remaining concentrated., According to Puccio et al Incubation periods are required for divergent and convergent thought processes. When both internal and extrinsic rewards are based on successful performance in fashion design, students will work harder.

1.11 The Study's Conceptual Framework

Organizing concepts is what a conceptual framework does into a particular useful illustration to represent the relationship among the variables to achieve the research purpose. The conceptual framework was adopted from Csikszentmihalyi's theory, and cognitive theory was collated from the literature review. Figure 1.1 displays the correlation between the many variables included in the involved study.

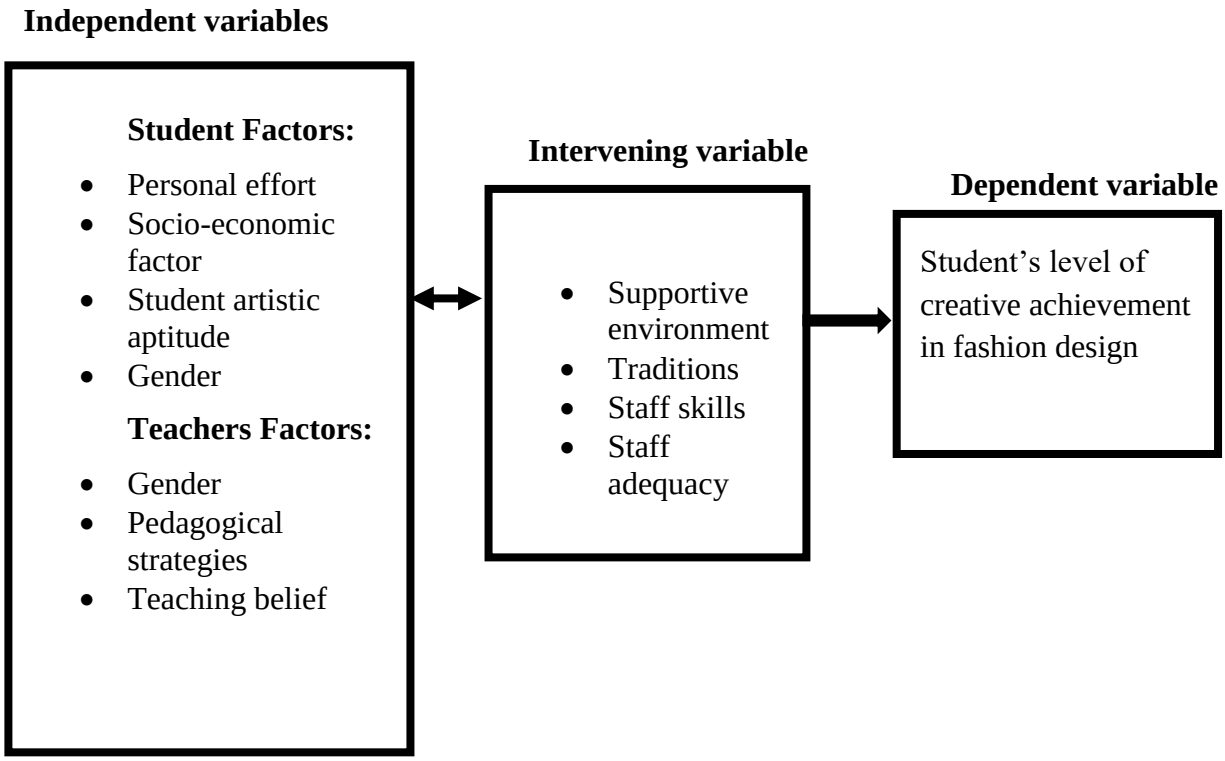

Figure 1.1: Conceptual framework showing the variables of the study

Figure 1.1 shows that student factors and teacher's factors, are the independent variables. The first variable shows factors facing students 'creative learning: personal effort, socio-economic factors, student artistic and gender. The next variable also shows factors influencing teachers' creativity in teaching, such as gender, pedagogical strategies and teaching beliefs. A variable that was dependent was the student's level of creative achievement in fashion design. The research considers that the acquisition of imaginative skills in fashion design performance will be affected by the students' supportive environment, tradition, staff skills, and staff adequacy in which they achieved creativity in fashion design, which are the intervening variables.

1.12 Operational Definitions of Terms

The operational definitions of this study are as follows:

Content knowledge: Theories, facts, ideas, principles, vocabulary which educators grasp to be efficient.

Creativity environment: Institution setting which equipped with Teaching and Learning Materials (TLMs) facilities.

Instructional materials: The content or information conveyed within a course.

Pedagogical knowledge: Teachers need specialized skills to create learning environments that work for all students.

Pedagogical strategies: Techniques teachers use to motivate students to acquire creative skills in fashion design.

Personal effort: It refers to when students are given time for mental preparation before ushered into creative learning

Staff adequacy: It refers to the availability of skillful tutors who can use technology to improve student's creativity in fashion design.

Student ability: It refers to students' level of thinking to come out with something new in fashion.

Student's creativity level in fashion design: The level at which students can come out innovative products in fashion design.

Technological teaching strategies: Employing technology as a means of transferring knowledge and skills to learners.

Teaching creatively:	Creative methods to improve the effectiveness, engagement, excitement, and interest of learning.
Teaching creativity:	The process of instructing in a fresh and practical manner that fosters student development in relation to the formation of unique ideas and actions.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Introduction

In this section, literature associated to creativity in vocational skill acquisition and practice is reviewed in accordance with the study objectives. The following subsections are included: the concept of creativity, the importance of creativity, curriculum content on vocational training, creative learning in fashion design, creative teaching in vocational skill training, strategies for promoting creative teaching and learning in designing, gender differences in learning fashion design, challenges confronting trainers and learners in training and creatively learning, and a summary of gap literature.

2.2. Concept of Creativity

According to Mumford (2003), creativity is the aptitude to derive inventive ideas and manifest them into reality from thought alone. It is grounded in the idea that creating is a multifaceted process involving the generation of new and useful items. It necessitates originality in thinking and then producing those ideas into tangible products and services. The process is concerned with originality in thinking and then transferring the thoughts into production. Creativity occurs when an individual combines different thing, previously unrelated, and makes something unique.

In terms of attitude, creativity is the difference in how people see things. It is all about possibilities, and nothing is right or wrong. For example, fashion students may take up a new hobby that will allow them to entertain new thoughts and ideas, which is good mental exercise to manipulate and transform ideas and materials to start learning different types of collars that are most applicable to use. Once they start, they will find

themselves exploring more and moving forward to another related topic, like types of sleeves.

It can be deduced that creativity is the originality and uniqueness of thinking along unconventional lines rather than a random expression devoid of thinking. Encarta World English Dictionary (2009) also defined resourcefulness as “the aptitude or command to generate, to convey into reality, to capitalize on a form, to yield through resourceful abilities, to create or bring into reality something novel.” Relating creativity to the process of changing novel and innovative concepts into being, Byers (2017) posit that imaginativeness is a two-way endeavor, beginning with thinking and then moving forward with the act of producing. Therefore, elucidation encompasses invention as the construction or application of ideas. It implies that possession of ideas that are not put into effect implies imaginativeness but not creativity. Sternberg and Lubart (1996), as alluded to in Naimanand Hao (2010), contend that creativity in a product is quantified in relation to its novelty and appropriateness.

Therefore, a novel product should be unpredictable and original. It follows that the greater the idea, the more the invention will serve as a stimulant for further work and ideas leading to a creative product. It corroborates the claims made by Amenuke *et al.* (1991), who claimed that creativity is a complex process encompassing making something new and inventing new ideas and products. They further asserted that it involves improving and reorganizing worn or old things and concepts to create new forms. However, according to Bleakley (2004), the term "creativity" is frequently applied indiscriminately and reified. In his view, it can only be utilized to describe an individual, a thing, or a method when used more precisely. According to him, in order to accept several forms of creativity and take context into account, a social

constructivist interpretation of "the creative" is necessary. Bleakley provides a taxonomy of 10 distinct types of creativity in response, asserting that the loose classifications could be useful in providing “educational strategies tailored to context” Following are some of Bleakley's typologies of creativity: spontaneity and originality, the illogical, problem-stating, and problem-solving, serendipity, inspiration, resistance to uncreatively, absence and retreat , an ordering progression (creativity as "origin"), rhythm and cycle (connected to renewal and conservation). Bleakley’s conclusions support the result of this survey of the works: that originality is construed in a variety of ways and for a variety of goals, and that it is probably impossible to identify a single definition that is appropriate in all situations. While I have in favor of having many definitions of creativity depending on the situation and goal, Koestler's definition of creativity has occasionally been helpful to this research., "the defeat of habit by originality" (1964, p. 96, cited in Robyn, 2015), along with Sternberg, et al (2002, p. 1) A reasonable, if unmusical, definition of creativity is "the capacity to create original work."

2.2.1 Creativity and Innovation

The words innovation and creativity need to be distinguished for the purposes of this research because they are frequently used interchangeably. According to Smith-Bingham (2006), "culture (especially the arts), business (with respect to the creative industries and entrepreneurship), and education (as part of the drive for deep learning and personal development that is more than achievement in tests) are typically associated with the term creativity" (p. 12). Smith-Bingham contends that innovation is more closely related to ideas of value and delivery in corporate Development and research as well as the pursuit of novel knowledge in technology and science.

However, according to Howkins (2010), "innovation is external and objective, whereas creativity is interior, personal, and subjective" (p. 10). Howkins contends that innovation can come from creativity but not the other way around. However, for the sake of this study, Bridgstock, Dawson and Hearn's (2011) view of creativity as a personal capacity is opposed to innovation, which is the "systemic output of organizations" (p. 105), offers a helpful practical contrast. Petty (1994) concurs with the National Curriculum Action (NCA) (2010) who posit that for any teacher, creativity is important. According to Petty 's reasoning, creativity is pivotal in developing student's abilities in creative thinking outside the norm and encouraging divergence in problem-solving skills and differences in communication methods. Petty (1994) further claims that creativity serves as a reward to a deep human need for making something that elicits acknowledgment for the move which leads to a rise in the incentive of the individual to be creative.

As a result, creativity gives individuals an amble opening to reconnoiter their feelings and which in the end, leads to the development of expertise in self-experience. It encourages students to exercise their imaginations while exploring their emotions and perspectives. From this, they can come up with individual meanings from experience enabling them to express them freely to others. This offers a divergence from the norm to what might be or what is not yet discovered. Thus, creativity is a constructive productive behavior that manifests through actions or accomplishment.

2.2.2 Characteristics of Creativity

The feature or quality that makes new items or ideas recognized is what is known as a creative characteristic. According to Khan (2017), creativity is a quality that

distinguishes a thing, a person, or a phenomenon. The following explanations provide some examples of typical traits connected to creativity.

2.2.2.1 Creative Thinking

The greatest way to approach creative thinking is as a problem-solving discipline. In other words, both creative thought and practical problem-solving must take place simultaneously in order to arrive at a workable answer. One needs to use a systematic approach in order to generate thoughts and express them accurately. De Bono (as stated in Schirrmacher, 1998) asserts that there are two ways to think: vertically and laterally. Learning more about something or coming up with a conventional, accepted, convergent solution are examples of vertical thinking. However, if the goal is to come up with novel, divergent, creative solutions to problems, lateral thinking is more appropriate. Ladder thinking is the method of employing the mind or mental processes that results in creative thinking or a product (Schirrmacher, 1998). Not everyone chooses to express their creativity via art. Another aspect of creativity is the capacity for original thought. Some people thought that creative thinking was reserved for grownups and was abstract.

Not just writers, artists, scientists, and inventors are capable of creative thinking. Young fashion design students should and can use creative thinking. In addition to aiding students in solving issues in their daily lives, the ability to think creatively equips them for life in the twenty-first century (Schirrmacher, 1998). It will take innovative thinking to find solutions to our society's challenges in terms of the economy, politics, and the environment. The tried-and-true methods of dealing with persistent issues have not been successful. Students who are raised with the ability to think creatively and independently will be equipped with the abilities to face and

address the issues that they will face in the twenty-first century. According to Schirrmacher (1998), creative thinking falls into four categories: Fluency (quantity of ideas generated), Originality (original, unexpected thoughts), Elaboration (ability to eloquently build on concepts or add details, use vivid vocabulary), and Flexibility are all components of effective communication (the variety of ideas).

2.2.3.2 Critical Thinking

According to Schirrmacher (1998), divergent and critical thinking are interchangeable terms. Divergent thinking occurs when there are numerous options or possibilities. Divergent thinking is open-ended and offers a variety of options. Divergent thinking is one strategy that can be used, for instance, when developing a creative curriculum. There would be countless options, including experiences in art, play, language, music, fashion design, and movement, among others, if it were to include provisions for children's creative development.

2.2.3.3 Divergent Thinking

Divergent thinking is in contrast to convergent thinking, which results in solutions that are primarily grounded in logic and knowledge. In that they are open-ended questions or topics that allow for a variety of alternatives, Feldman (1999) supports Schirrmacher's (1998) views of diverse thinking. The ability to think convergently and divergently is crucial because it gives fashion design students access to a foundational body of knowledge that is essential for academic success and school performance. Brainstorming is also referred to as free thinking or divergent thinking, and it includes anything that may occur to mind in relation to a subject. When someone

engages in divergent thinking, they produce numerous original, imaginative answers to a single topic or prompt problem.

2.2.3.4 Convergent Thinking

This was a different kind of creative thinking, which was described as the capacity to evaluate and analyze ideas in order to tailor them to a particular scenario or set of requirements. When we evaluate a wide range of concepts, facts, and options in order to arrive at important and educated conclusions, we utilize this sort of thinking. When someone tries to solve a problem with just one right answer, they are using convergence thinking. For instance, toddlers and teenagers must use convergent thinking to solve math issues because there is only one correct response to the problem 15+2. Convergent thinking is very heavily utilized in the curriculum and examinations of the average school. All types of IQ tests—traditional, multiple-choice, and standardized—measure a child's capacity to think convergently. Understanding these ways of thinking might help teachers communicate correct information and creative thinking skills to their students. This is due to the fact that for pupils to increase their capacity to comprehend an idea or a certain subject area, they must think critically.

2.2.4 Ontological Views of Creativity

Although there are many economic arguments in favor of encouraging creativity as a catalyst for innovation and entrepreneurship (Araya & Peters, 2010), as well as commentary on how creativity is developing in society (Florida, 2002), other viewpoints are in opposition to more instrumental, market-driven views of knowledge and creativity. Rooney (2010), for instance, advocates for "creative wisdom" as a goal of education and urges for a more sophisticated approach to valuing creativity in the

contemporary economy. According to this viewpoint, creativity serves as an enabler that connects knowledge, principles, and ethics and promotes social renewal and transformation. Beyond just encouraging kids to come up with original ideas, it must also help them deal with the politics and discursivity of being creative as well as evaluate the creativity of others (Rooney, 2010, p. 197). Craft (2006) asks for "creativity with wisdom," contending that creativity is not value-free and that in order to foster creativity, we must avoid "culture blindness" and "environmental neglect" (p. 346). Barnett (2012) extends the case by arguing that creativity is crucial to both wisdom and future knowledge and learning. How do we prepare for an unknowable future, he wonders? Students will need to be comfortable with "knowing-in-and-with ambiguity" and have developed the capacity for "creative knowing" in order to "be" in the future in a fragile world of "hyper complexity," where skills and knowledge are not enough and all knowledge is contestable (p. 69).

Importantly, Csikszentmihalyi (1997) points out that "most of the things that are interesting, important, and human are the results of creativity" (p. 1). For this reason alone, studying creativity and learning from individuals who are experts in their field are both worthwhile endeavors. According to Csikszentmihalyi (1997), learning about creativity can help us live "more engaging and productive" lives and offers "exciting models for life" (p. 11). (p. 10). He also asserts that creative thinking may be used to find solutions to pressing global issues like poverty, population growth, and climate change. This was recognized by UNESCO in 1996, who anticipated the role that creative development may play in enabling citizens in both developing and industrialized countries to have a higher quality of life.

2.3 Designing for Creativity: Pedagogical Models

2.3.1 Pedagogical Models

There are now strong arguments for paying closer attention to creativity. Evidence of research in this field extends back at least to the 1880s, despite the fact that the literature (in western psychology) has increased significantly since the 1950s (Plucker & Makel, 2010). Creativity remains a contentious concept for many in higher education, and fostering and measuring it pose "huge problems" to the academy (Walker & Gleaves, 2008, p. 52; Ball, 2010). It is not unexpected that creativity causes problems given that, in accordance with Anderson and Krathwohl's (2001) updated taxonomy of Bloom's learning outcomes, it is the most difficult cognitive work that teachers may assign to students. While some researchers (Scott, Leritz, and Mumford, 2004; Zhang *et al.*, 2012) clearly state that creativity can be taught, others are more hesitant and acknowledge that it can be learned, encouraged, nurtured, or allowed for (Baillie, 2002; Biggs & Tang, 2009).

More sceptically, Bleakley (2004) asserts that rather than attempting to "teach" creativity, we would be better off "teaching about forms of creativity" (p. 467) because "the creative" can be built and justified in a variety of ways. Furthermore, McWilliam (2007), a steadfast supporter of the importance of creativity in educational practice, is a little conflicted on this issue. According to McWilliam, some components of creativity cannot be taught, but thinking and application abilities can. In the literature and according to the research's findings, this is undoubtedly contested ground. Regardless of the response, Jackson (2006) notes that teachers' creative abilities and processes "are essentially tacit and rarely publicly acknowledged and rewarded" (p. 4). The goal of this research was to clarify the implicit and tacit instructional strategies

used by exceptional and innovative educational practitioners, as well as to articulate existing notions. The definition of creativity and how it is operationalized within disciplines must be clarified by educators if we are to have a better grasp of creativity in higher education (Jackson & Shaw, 2006). The creative, humanistic, and artistic industries have a lot to offer in terms of pedagogical models and methods for learning and teaching from which new insights can be obtained (Eisner, 2002; Fleming, 2008; Loveless, 2007; Robinson, 2011). The engineering model developed by Kazerounian and Foley (2007) serves as an illustration of a discipline-based approach. Ten maxims for creating favorable settings for creativity were developed by the writers.

The guiding principles are to: (1) maintain an open mind; (2) accept ambiguity and teach students to accept the discomfort of seeking clarification; (3) allow time for an iterative process that includes idea incubation in four stages: "preparation, incubation, illumination, and verification" (p. 764); (4) Encourage risk-taking; (5) Set an example; (6) Accept learning to fail: "Mistakes can lead to deeper topic understanding and innovation" (p. 764); (7) Encourage risk-taking; (8) Search for Multiple Answers; (8) Promote Internal Motivation, which Comes from Relevance and Meaning in the Tasks; (9) Promote Internal Motivation, which Comes from Relevance and Meaning in the Tasks; (10) Ensure Ownership and Control of Learning (Provide Choice in project topics). Researchers and practitioners advise treating creativity as a habit in order to produce successful creative outcomes (Sternberg, 2007, p. 3; Tharp, 2003). "It may seem strange that creativity, a fresh response, is a habit, a recurring response," claims Sternberg (2007). But the main reason why people are creative isn't because of any one innate quality, but rather because of how they approach life: they have a

history of responding to issues in unique and creative ways rather than reacting blindly and reflexively.

2.3.2 Stage and Component Models

There are several process models of creativity, many of which are related to problem-solving, and although researchers like Csikszentmihalyi (1997) and Robinson (2011) offer comparable advice regarding the conditions for increasing creativity based on studies of highly creative people. A well-known five-stage model created by Gelb (1996) consists of the stages of preparation, generation, incubation, evaluation, and execution. This was inspired by a model created earlier by Wallas (1926, as cited in Childs et al. (2022). For his Directed Creativity Cycle, Plsek (1996) created eight distinct stages (observation, analysis, generation, harvesting, enhancement, evaluation, implementation, and living with it), whereas Greene (2001) found an incredible 42 models of creativity and added his own Four-Cycle Model to them.

Alternative design-based methods that focus on design-related problem-finding and problem-solving take the following form: Empathize with the issue and the people, then define the issue, then ideate—that is, create a lot of ideas and choose the best ones—then prototype (create a model), test the model, and repeat the process until a workable and worthwhile solution is found (Institute of Design). Models from other academics and professionals are based on elements that are thought to encourage creativity. For instance, Seelig (2012) offers a paradigm with six elements needed for individual or group innovation. Knowledge, creativity, attitude, habitat, resources, and supporting culture make up her "innovation engine." The last three are outside for the creative person, while the first three are inside or personal. However, Fryer (2012)

cautions that the underlying assumptions of each of these models should be scrutinized (e.g. about the search for novelty).

2.3.3 Creativity Tools

Creativity can suffer from criticism. Do computer programs stifle creativity as well? When the user is "limited to following a particular behavioral pattern put into the programme by its designers," according to Lutus (2005), they might (p. 3). Particularly Microsoft Power Point has been under fire quite a bit for only allowing users to apply pre-specified formats (however, there are also benefits of using this software). Some instructors contend that computers are killing creativity in the arts, fashion design, and music, just as calculators may be de-skilling math pupils by denying them the chance to use other tools.

However, if teachers and creative learners are aware of the alternatives the technologies present, they can utilize them in ways that encourage and support creativity. Teachers must make sure that the tools they employ allow fashion design students to achieve what they need to and want to do because certain technologies may inhibit creativity, such as by offering pre-set forms and inserts that students cannot edit or restricting what may be included on a page. Additionally, it emphasizes the necessity for students to first build their abilities before using technology, rather than using it as a stand-in or short-cut. According to Cameron (2000), in disciplines where creativity is to be encouraged, we must instruct students that the ideas and content of their work must come first and take precedence over the actual execution of the work. Technology aids in their execution. Their originality and quality are only possible because of their ingenuity and ideas. (p. 6). Electronic tools are available to support many methods and phases of the creative process. Videos that push the edges

of what is possible, for instance, might give the imagination something to work with. Additionally, communication technologies enable students to collaborate creatively and share ideas. Utilizing productivity tools enables students to put their concepts into action and communicate them to others. Students can analyze their creative processes and outputs with the use of critical thinking techniques. Choosing the technology that best enables students to express themselves is crucial for the use of technology to foster creativity. Teachers, however, can invest in learning about one or two tools (for instance, designing and pattern processors) that can facilitate a wide variety of ideas and products if they are intimidated by the variety of resources that can promote creative thinking.

Of course, using technology to be creative is not necessary, as noted by Cameron (2000). However, technology can help the creative thought process if it can inspire ideas, facilitate their expression, create video possibilities for innovation, and stimulate the adoption of tactics and procedures. Useful tools for creativity include those listed below, which can be applied during a variety of stages of the creative process in fashion design. Use of graphics or concept mapping, for instance. Software for graphic organizers is helpful for all fashion design objectives. Students can use it to produce and connect ideas, design, plan, and even analyze their creative work while going through the creative process.

2.3.4 Creative Environments and Emergence

When trying to develop creativity, educators must take into account a more contextualized, holistic approach, even though guidelines and models are crucial (Csikszentmihalyi, 1997; Scott *et al.*, 2004; Seelig, 2012). The domain, the climate, and the culture all matter. Higher education institutions are certain to be inventive

because they are brimming with intelligent and imaginative individuals (Tosey, 2006), but it is important to take into account actual and imagined obstacles to implementation and cultural change. There has never been a more visible requirement for innovation at all levels of the system to implement complicated change, as Tosey (2006) says. However, the places for emerging at this time seem mismatched to the concerns of change that seem to require the most urgent attention. Numerous aspects of the environment, such as those that uphold standards and quality, frequently seem to hinder emergence and conflict with creativity. (p. 29)

Tosey (2006) also points out that strangely, the mechanisms that might prevent the growth of creativity at colleges and universities are themselves the results of creativity. Additionally, limitations and restrictions are essential elements for the emergence of creativity (Csikszentmihalyi, 1997; Tosey, 2006; Weisberg, 2006). Complexity theory proponents (Stacey, 2000; Waldrop, 1992) contend that for organizations to be innovative and adaptable in a world that is uncertain and dynamic, they must be able to operate at the "edge of chaos." Employees need enough freedom to use their imagination and creativity, but also enough restrictions to support the process and outcomes. According to Tosey (2006), management styles that promote variety, adhere to the "emergent" paradigm, and provide enough organizational support and incentive for staff to stay motivated to take risks are those where creativity flourishes (Amabile, 1996; 1998).

Emergence, according to Johnson (2001), is "the transition from low-level rules to higher-level sophistication" (p. 18). Emergent systems involve "many actors dynamically interacting in multiple ways" and are complex (p. 19). Coherent behavioral patterns "may emerge from the eccentric interactions of random

individuals" according to the phenomenon of emergence (Tosey, 2006, p. 32). According to Seel (2006), emergence is essential for "fundamental change in human organizations" but "cannot be controlled, foreseen, or managed" (p. (p. 1). Despite the fact that the phrase was first used more over a century ago, a theory of emergence did not develop until the 1990s (Lewin, 1993; Waldrop, 1992).

At order to address change that can both foster and be the result of creativity, Seel (2006) outlines seven prerequisites for the facilitation of emergence in institutions like universities. They include diversity (of all kinds), connectivity (not fragmentation) in all things, appropriate information flow rates across the organization, anxiety containment, well-managed leadership (proportionate power), upkeep and care of identity, provision of good boundaries (not too many, not too few), intentionality (a compelling vision to move the organization or group forward), positive emotional space, and periods of incubation (watchful anticipation). These circumstances might encourage creativity, but as universities frequently employ it for convergence and control (Tosey, 2006), conflicts of interest can occur.

2.3.5 Creative Leadership

Amabile (1998) contends that six factors influence the emergence of creativity in the workplace and confirms that managerial practices have an impact on it. These components can be used in learning and teaching environments for fashion design. The following are some of them: a challenge (which shouldn't be too easy or too difficult); freedom in how tasks are carried out, but not necessarily in the choice of tasks; the availability of adequate and suitable resources; the promotion of the positive traits of work-groups and coworkers; encouragement from supervisors; and organizational support. Creativity is more likely to grow and be valued when certain

circumstances are satisfied. In addition to Seel's (2006) requirements for emergence, this viewpoint is useful. As suggested by Csikszentmihalyi (1997), creativity can arise in practice as well as in policy if the promotion of creativity is seen as more than just the development of generic abilities and is instead viewed as a holistic process including the entire culture, environment, and context. If controlling these factors is crucial to the birth of creativity, then successful leadership will depend on creativity.

The ability to lead creatively is necessary to manage complexity and change (Puccio *et al.,* 2011; Zacko-Smith, Puccio& Mance 2010). According to Puccio *et al.* (2011), a key component of leadership is inventiveness. Puccio *et al.* contend that although some will exhibit better skill levels, creative leadership can be learned. It is not an innate trait. Effective leadership is more likely to emerge the more the qualities of creativity and creative cultures are nurtured. Both at the macro level of institutional practice and the micro level of the creative teams where students work on their creative projects, creative leadership can be viewed as being crucial. For both situations, effective creative leadership is crucial.

2.4 Curriculum content in Vocational Training Colleges in Ghana

This study will assess the effect of curriculum content in vocational training and its influence on creative skill acquisition. The aspects of the study comprise an implementation of curriculum delivery guidelines, increasing accountability and enforcement of education standards. Government policies are developed to address emerging issues in the education sector and to be responsible for a framework for implementing creativity in education and vocational training in Ghana. The available education report shows the key education challenges are attributed to weak

governance, weak management and absence of accountability in putting into effect the vocational training programmes in the education sector overall (Darvas & Palmer, 2004).

Available study reports have shown that curriculum content has a strong influence on education and consequently students' performance (Amy *et al.,* 2011). Ghana had extensive history of the growth of education policies to guide education development at all education levels, promote quality education, and enhance access and equity since independence in 1957. The Educational Commission in 1972 recommended the government reform the education system and developed the purposes of education. At the time, one of the recommendations aimed to address vocational training as the key to development and also to reduce the unemployment rate in Ghana. Other education commissions and policies have emphasized the provision of quality and practical education relevant to societal needs (Darvas & Palmer, 2004).

However, upon a more in-depth and critical examination of the curriculum for college of education in Ghana showed that computer-aided design was not implemented as part of the teaching and learning activity which is indispensable in fashion designing programme. Contrary, teachers put forth conventional methods for instructions. This may explain the reason for the limited use of computer-aided design during the teaching of fashion design programmes in Ghana.

2.5 Strategies of Promoting Creative Teaching and Learning in designing

Studies to identify new strategies to improve creative learning and teaching are not far-fetched. The first, research has found that practicals are vital for learners and teachers creativity evelopment. Essentially, comprise various elements such as student

activities, strong inspiration, critical thinking and creating of purposeful content (Nold, 2017). While these are just elements of experiments, they go beyond theories which allowed teachers and students to hypothesize and generate new concepts, hence, in actuality, they are constructs of creativity. Implementation of experiments into learning and teaching comprises basic constructs which give rise to creativity in fashion design.

Other studies have considered student-centered instruction as an efficient method of enhancing creative teaching and creative learning. In terms of effective vocational training and skills management student-centered instruction refers to a method whereby students' can allow to train themselves and teachers can modify their ideas appropriately giving them direction in accordance with students' behavior, creativity development and learning expectations. Student-centered instruction is approach of teaching where learners are the fundamental of learning as their educators serve as their facilitator. The instructional process engages students in active learning and more attention is given to students metal cognitive strategies. Fashion design encourages the use of student-centered educational methodologies since it fosters student creativity. (Qutoshi & Poudel, 2014).

Kaput (2018) undertook a research study to establish the impression of student practices in the classrooms and colleges and emphasize involving students in developing learning expectations in the classroom. The classroom atmosphere has to be safe, productive and students ready to gain knowledge; and there should be explicit communication between teachers and students. In addition, students should have the freedom to initiate the establishment of clubs, based on their interests and manage them with assistance from teachers. Similarly, Lawhorn (2008) noted the benefits of

extracurricular activities as contributing to the improvement of academic performance, increased employment opportunities, skills development, and social development. According to Silver and Perini (2010), teachers who use a variety of instructional techniques have motivated, disciplined learners, which leads to better academic outcomes.

2.6 Gender Differences in learning fashion design

According to creativity literature several factors influence fashion design including individual background traits. Some of these traits include one's gender as investigated by (Weisberg, DeYoung, & Hirsh, 2011). However, studies offer contradictory findings on the effect of sexual characteristics on creativity. Gender a variation in the gender identification on creative performance do exist. Goldsmith (2000) point out the key characteristics linked with fashions. These include gender, age, levels of intelligence as well as personality.

However, Amos, Essel, Fobiri and Ibrahim (2023) revealed that there is lacking proof to back the claims that gender variances exist in fashion and design. Nevertheless, based on existing test scores, it can be deduced that the feminine gender has the ability to get higher scores as compared to their male counter parts (Baer & Kaufman, 2008).

2.7 Attitudes towards Vocational Skill Acquisition

According to Ngogo (2014), attitude is the sum of knowledge about a thing, someone, circumstance, or experience that shapes a person's view or inclination toward it. As defined by Elias *et al*. (2012), attitude is an evaluation judgment—positive or negative—that a person has and directs toward a concrete or abstract attitude object. From Achieng (2012), attitudes are one's thoughts and feelings toward actions taken

in support of goals and concepts. It also describes attitude as a person's favorable or adverse emotions toward things, people, or ideas that impact attitude.

According to Amedome (2013), educators need to be freed from this mindset. Instead of creating an equal system that is appropriate for all children who choose to pursue that field, including their own children, many of them construct vocational education for the children of other people. The deliberate design of education to play a role in demystifying the negative mindset toward work and locally created items was one major recommendation. To guarantee good performance, trainers can instill a positive attitude in their students. A positive outlook is essential to obtaining the desired results in occupational skill training.

According to Okoye and Udoudo (2015), students had a very positive attitude toward technical education shortly following independence. He adds that the youth technical schools were very active during this period. In her study on the connection between attitude and math performance, Uwaifo (2010) discovered that students' attitudes were a major factor in deciding how well they performed in the subject. Exam results in mathematics were poor for students who had a pessimistic attitude. This might be used in vocational education to demonstrate that students who have a positive attitude toward learning will perform better than those who have a negative attitude. Kuofi (2015) noted that a positive attitude toward students' performance—as opposed to a negative attitude of punishing them for subpar performance—is one of the most significant elements influencing academic accomplishment. Students continue to work successfully when their trainers recognize and reward their efforts. On the other hand, punishing students for their bad performance reveals a negative attitude and encourages them to keep up their low performance.

2.8 Relevance of Learning Resources in supporting Skill Acquisition

According to Tety (2016), learning resources in vocational education aid in the development of skills. Among these are textbooks, which he characterizes as "instructional perfection." They are essential to instruction or training, in his opinion. They account for 85% of spending in the education sector in developing nations. Lack of text books in the classroom means that students must learn by rote memorization, recitation, copying from the chalkboard, and taking lecture notes. This discourages students from developing new skills. The efficacy of non-formal training is frequently gravely hampered by the dearth and inadequateness of instructional resources. Above all, it has frequently proven challenging for programs to remain viable and sustainable (Bušljeta, 2013). For instance, a trainee has to be equipped with threads, tapes, bobbins, sewing machine, bobbin cases, and fabrics in order to efficiently learn fashion design abilities. This suggests that for vocational training and education to be delivered in an appropriate manner, sufficient instructional resources are needed. The trainers have an easy time conveying information and learners' acquisition because of the enough materials. When explanations are presented with the use of accessible resources, learners are better equipped to understand them (Mzinga & Onyango, 2021).

Maclure (2007) attests that this segment of instruction has been overlooked for a long time in most nations. Concurring to him, it is obvious that less money related and human assets have been given to professional instruction and preparing in design plan. It is funds that empower the heads of professional educate to buy learning assets that are satisfactory in supporting abilities procurement especially in design plan.

2.9 Creative Teaching and Learning

Creative learning is a way of learning or thinking that facilitates creative practices (Naiman, 2010). It involves obtaining information, abilities, and knowledge using creative processes, such as formulating new theories, stories, solutions, and designs, rather than merely absorbing and memorizing information. Several factors influence creative learning. One key factor is the personal quality of the student, including motivation. Fashion students must be rewarded in learning activities to perform effectively. Another crucial factor is the learning environment. Fashion design students require a creative, thought-provoking classroom setting to stimulate their minds and enhance comprehension of subject content.

O'Brien (2017) suggests that parents and guardians can be creative role models by supporting their children's ideas and giving them praise, creating a conducive family environment for nurturing creativity. Teachers can further develop their learners' skills by tapping into this support. Sternberg and Lubart (1996) demonstrated that being role models is the greatest contribution parents and guardians can make regarding parenting styles. According to their study, most students who experienced a democratic parenting style characterized by care and respect showed higher levels of creativity. Fashion design students' creative learning requires hard work and innovative approaches integrated into their daily coursework, demanding significant commitment in terms of energy, time, and effort (Esquivel, 1995).

Considerable efforts have always been placed on student creativity by stakeholders in the education sector. They understand the need to provide the best learning experiences and opportunities, enabling students to perceive the world from different

angles. This allows students to analyze, categorize, and address challenges from diverse perspectives. Educators are encouraged to adopt a macroscopic attitude to foster creativity and high-cognition in learners (Smith, 2000).

However, developing creative teaching practices is a long-term but slow process due to numerous obstacles (OECD, 1998). Many instructors still rely heavily on traditional classroom lectures and writing board demonstrations, lacking either the capacity or the will to create and utilize inventive, diversified teaching methods. Therefore, it is crucial to study how teachers can adopt and use creative teaching in fashion design colleges to develop learners' higher-cognitive thinking, giving them an edge in the competitive global market.

Higher education institutions must produce capable innovators and creative thinkers to meet the increasing demands of modern society. These institutions must devote their full attention to fostering creativity. The world needs imaginative, forward-thinking individuals who can devise original solutions to business and societal problems. Consequently, the value of creativity has increased in educational initiatives, economic development projects, and sectors like fashion design (Bill, 2013). Creativity is characterized by originality, novelty, and utility (Parkhurst, 1999). To succeed in their sector, Ghanaian fashion students must receive effective training and teaching to meet the growing demand for creative and innovative fashion concepts.

How do students learn to be creative, and how do educators employ innovative methods and settings to instruct students? These questions are central to this research. Effective problem-solving and creative thinking require the guidance of skilled

teachers. Learning and teaching are interdependent processes (Farrant, 1980). Teaching involves transferring knowledge, skills, attitudes, and ideas from one person to another (Banahene & Sarfo, 2010). Following instructional activities, it is expected that the learner's knowledge base will have expanded, indicating that learning is the outcome of teaching. Therefore, teachers need specific talents to educate effectively.

According to APA (2011), teaching skills include the ability to convey and explain subject matter content effectively, use strategies specific to the subject matter, and continuously assess student learning. Classroom management is also essential, involving the direction of human activities to ensure a conducive learning environment (Amoakohene, 2008). Teachers must plan, coordinate, supervise, lead, and interact with students to manage the classroom effectively.

Different types of learning—affective, cognitive, and psychomotor—play distinct roles in education (Farrant, 1980). Teachers, as catalytic stimulants, significantly influence the learning process. They can enhance student experiences by carefully considering teaching strategies and incorporating indirect support into direct instruction. Moon and Murphy (1990) emphasize the importance of aligning student practices with instruction to ensure comprehension and retention. Wareign, Drew, and Shreeve (2008) propose several strategies to facilitate the acquisition of new skills, including buddy systems, group work, artifact dismantling, and the use of visual aids. Kolb (1983) indicates four-stage learning process—practical knowledge, observation and reflection, abstract conceptualization, and active experimentation—illustrates the cyclical nature of experiential learning (Adams & Kemevor, 2018). This ongoing process helps students avoid repeating mistakes by encouraging reflection and continuous improvement.

Incorporating creative learning and teaching practices in fashion design education is crucial for developing students' innovative abilities and meeting the demands of the modern fashion industry. By fostering a supportive and stimulating environment, educators can enhance students' motivation and engagement. Parents and guardians also play a vital role in nurturing creativity at home.

Educational institutions must adopt diverse and inventive teaching methods, moving beyond traditional lectures to include collaborative and hands-on activities. Effective classroom management and tailored instructional strategies are essential for facilitating learning. By integrating these approaches, fashion design colleges can equip students with the creative skills needed to excel in a competitive global market and contribute to the preservation and innovation of fashion. These are listed in the following order: -Budding - Through a buddy system, students in an open studio can pick up knowledge from more seasoned peers. Pupils can form groups from every year of the course, or they can be matched up with a friend from a year above. Once social relationships are established, students can teach others novel abilities like computer programs, Photoshop, AutoCAD, and Coral Draw. However, the tutor must take the lead in this. Group work: By taking clear, concise, and well-articulated actions forward, group collaboration can provide real results while also increasing understanding of processes. This is especially crucial for the arts and design, which have historically placed a strong focus on collective projects. Dismantling artifacts: This can be done individually or in a group. It uses the example of taking up a jacket and listing or explaining the techniques used in its making. This can enhance comprehension of the actual construction of its layers of padding, interlinings, linings, and stitching to preserve its shape. The utilization of visual aids to clarify procedures.

Although handouts have been the norm in the past, digital photos in interactive power point for technical abilities can take the place of step-by-step procedural diagrams. Students can build this as they come into technical issues that call for creative solutions and can evaluate it in the workshops.

A four-stage process of learning was proposed by Kolb (1983, cited in Adams & Kemevor, 2018) and includes practical knowledge, observation and reflections, abstract conceptualization, and active experimentation. Using a paradigm that is frequently used to describe experience learning (McGill & Beaty, 1995). The process is ongoing and can start at any point in the cycle. According to this hypothesis, if we didn't reflect, we would keep making the same mistakes.

2.9.1 Types of Teaching Models

Teaching models are instructional strategies. Various teaching models and techniques are typically integrated into effective instruction based on the learners and the objectives of the lesson. Here is a look at a handful of the models:

2.9.2 Lecture

This is applied in college courses. When using the lecture technique, the instructor gives facts, illustrations, and perhaps even visual aids. This practice isn't given much attention. In the majority of educational institutions worldwide, this is the most widely utilized teaching methodology.

2.9.3 Co-operative learning

Using this approach of instruction, the students collaborate in groups where each member brings a unique perspective or talent to the table. They also leverage one other's strengths to work as a cohesive unit and produce a final product.

2.9.4 Listening and viewing

Lessons become more engaging for students to watch and pay attention to when inter-disciplinary educational media technology is used.

2.9.5 Inquiry training

Its objective is to support the instructor or learner in selecting a preferred and successful teaching method. However, it should be acknowledged that every theory has advantages and disadvantages. According to Burns, MacDonald, Sibbald, Gask and Roberts (1995) learning is an almost irreversible behavioral shift that involves both internal and external behaviors. Students must acquire the abilities to find and analyze data, as well as to build concepts, reasoning, and causation. The ultimate objective is a self-sufficient student. Drill and practice: This approach heavily emphasizes practice in order to provide students the ability to become proficient in doing an overt performance.

2.9.6 Learning Methods

There are numerous and diverse ways to learn. Several of them were covered in this study in an effort to help students and teachers select the most desirable and efficient learning method. Every theory has advantages and disadvantages.

In essence, Burns *et al.* definition examines how a person views something or does something and uses critical thinking to absorb the knowledge, which in turn influences how that person behaves or attitudes toward the activity they have witnessed. Numerous learning strategies have been proposed since learning can be either an innate ability or a skill that a person learns. The Facilitation Method (the humanist approach) is one of the teaching strategies used at many educational institutions. Facilitative learning is an approach that was developed by Carl Rogers and other people. This method's fundamental tenet is that learning will happen when an educator plays the role of a facilitator, creating an environment where students feel free to explore novel concepts without feeling intimidated by outside forces (Laid, 1985 cited in Adams & Kemevor, 2018). This approach is based on the idea that learning is a natural human inclination, which is strengthened by a teacher who facilitates learning by giving students the support and environment they need to become knowledgeable. The facilitator pays attention to what the students have to say, particularly their emotions. They focus a lot on how they interact with the student, are willing to take constructive criticism as well as positive criticism, and use the criticism to gain "constructive understanding of themselves and their behavior." Students who use this learning style are more likely to take risks and explore new ideas, initiatives, and locations on their own. This method's benefit is that it encourages students to take ownership of their education, contributing a large portion of the knowledge gained from independent research and focusing on elements that aid in problem-solving. To teach and learn fashion in creativity, tutors and students might employ alternative teaching methods or the facilitation method.

It is important to note that a teacher who encourages critical thinking also encourages "reflectiveness" in their students by posing thought-provoking questions, which are crucial to the process of creating knowledge. In order for pupils to acquire intellectual engagement, it is imperative that they think independently and develop their own knowledge. In conclusion, it is important to stress that utilizing and balancing three abilities—all of which are developable—is necessary for creative work (Sternberg, 2005). What we commonly consider to be creativity is synthetic skill. It is the capacity to come up with original and captivating ideas. The individual we refer to as creative is frequently an exceptionally skilled synthetic thinker who connects ideas that other people don't automatically identify. Critical thinking skills are usually associated with analytical skills. This ability allows one to assess and analyze concepts. A creative thinker who lacks strong analytical skills is more inclined to follow flawed concepts.

The analytical skills of the creative person are used to weigh the pros and cons of their ideas and put them to the test. The capacity to convert abstract concepts into real-world accomplishments and theory into practice is known as practical ability. The creative individual persuades others that a thought is worthy by applying their practical ability. Ideas with a prospective audience can also be identified through practical skills. A healthy mix of practical, analytical, and synthetic ideas is necessary for creativity. A synthetic person can have creative ideas, but they can't identify or market them. An analytical person could be great at criticizing other people's ideas, but they are unlikely to come up with original ideas themselves. Even while someone who is just practical could be a great salesperson, they are more likely to market unworthy concepts or goods. Teach pupils to strike a balance between synthetic, analytical, and practical thinking to foster and develop creativity. According to

Schank (1988, cited in Kemevor & Adams (2018), having a creative mentality is just as crucial as having creative thinking abilities. The purpose of this study is to support and motivate educators to employ practice-drill instructional approaches and models, together with critical thinking, to assist students develop into innovative and creative thinkers.

2.10 Challenges student and teachers confront in teaching and learning creatively

Recent studies of learning acknowledge varying approaches that accentuate student creativity learning in fashion design. Within the modern psychology of learning, a number of concepts and ideas share the same purpose despite having different theoretical frameworks. A common feature identified is its active impact on the student as well as their involvement in learning. While it places a strong emphasis on critical thinking and analytical abilities, it allows students to concentrate on their creativity. Student's problem solving and metacognitive skills are enhanced which further contributes to student's thinking (Niemi, 2002). One of the main obstacles of teaching and learning creatively is the institutional environment.

According to Garibay (2015), in order to optimize learning, every learner must establish a sense of self and be in a welcoming, secure environment. In addition, teacher's perception towards teaching practical lesson is another challenge facing teaching and learning creativity in fashion design. Additionally, there are a number of factors that prevent students in education colleges from being creative teachers and learners. These include student ability, learning beliefs, a lack of motivation, and a lack of training facilities. Teachers and students must address these factors by having

an upbeat mentality toward learning and teaching creativity and by having access to relevant training resources. Teachers and students also perform more effectively when they receive both internal and external rewards for their creative work. Day and Sammons (2004) assessed how teachers' abilities and inventiveness affected students' academic performance and scientific excellence. A questionnaire with 17 exercises was employed in the investigation. According to the study's findings, students' creativity and academic achievement were highly correlated with their teachers' creativity. Teachers also had an impact on how well students developed their conceptions and their capacity for self-control both inside and outside of the classroom.

2.11 Summary of existing Gap in the Literature reviewed

The creativity in learning and teaching fashion design is emerging and rising concept. The works appraised took an impression of the notion of fashion design and the validation for the inclusion of creativity in Ghana’s college of education curriculum. Another literature review has shown that comprehension of the factors affecting creative teaching behaviors is important for enhancing effectiveness during teaching as well as addressing issues that deserve attention by every decision maker charged with promoting creative teaching and learning and creative instructors when coming up with the designs for the learning activities. This was predominantly factual here in Ghana. If the vocational incorporated curriculum is to be copiously materialized and to make an impression, the execution of creative teaching is obligatory.

Alderman (1999) was quick to assert that how a teacher views themselves and their notion of self-belief is a major influence on the students learning process.

Consequently, it is imperative to augment learners' resourceful dispositions and proficiencies, but what might be correspondingly central is to educate them in explicit artistic learning skills. It is clear that the authors of these studies intentionally left other challenges which inhibited teaching and learning creatively. Most of these studies focused on the psychological and environment teacher-based challenges which limited the teachers to impact creativity in students failing. Hence, failing to report other challenges such as institutional challenges like the availability of facilities, human resource among others. Besides, the challenges had wider scope hence it is vital to minimize the study's range and emphasize on vocational training colleges in Ghana. The research gaps identified show the inadequacies of creative education and learning due to issues relating to the teachers, students, environmental or institution setting which have hampered creative development among students. The proposed study therefore, aims to lessen the current gaps in literature and provide alternative concrete and workable elucidations that edification planners, teachers and students could use to advance creativity among the fashion design students in Ghana.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

The subsections on research design, variables, study region, target population, sampling techniques and sample size are highlighted in this chapter. Research instruments, piloting, validity, reliability, data collection techniques, data analysis, and logistical and ethical issues are all covered.

3.2 Research Design

The collection of techniques and procedures a researcher employs to collect and examine measures of the variables listed in the research objectives is known as a research strategy (Creswell, 2014). The current study plans to employ a descriptive survey approach, which facilitated the collection of a substantial amount of data in a short amount of time. A descriptive survey aims to characterize specific traits of a selected entity or person in both cases. Because of its flexibility and capacity to help the researcher identify, clarify, or validate certain hypotheses or objectives with regard to a specific population, the study used a descriptive research design. Because descriptive surveys can gather detailed data that can be either quantitative (via surveys) or qualitative (through observations or case studies), they were judged suitable.

The researcher collected both quantitative and qualitative data for the current investigation. The demographic information of the respondents was positively reported by the quantitative data that was gathered. The investigator was also able to test her hypothesis and determine whether or not there was a relationship between the study's independent and dependent variables thanks to the quantitative data.

Nonetheless, the use of closed-end Likert items allowed for the interpretation of information using statistical analysis, which was utilized to support the qualitative conclusions with quantitative data Creswell (2014). To strengthen the position and address the shortcomings of the two designs, the researcher collected both quantitative and qualitative data (Creswell, 2014). Utilizing the survey approach made it possible to gather a sizable amount of data from the dispersed research area's sampled population. The necessity to generalize the results was the main justification for employing many case studies. A fixed not experimental descriptive survey was also used in the investigation.

The survey design was justified by the fact that the variables were not altered. Descriptive surveys, according to Avoke (2005), are intended to correctly depict the traits of certain people, circumstances, or groups. It serves as a tool for needs assessment, providing data on which wise judgments may be made and setting the stage for a more fruitful program for academic research. It also provided the framework for a more thorough and exacting inquiry. According to Fraenkel and Wallen (2006), the descriptive survey's design made it possible to simultaneously describe opinions, perceptions, and beliefs at any one moment. Nevertheless, because it probes into personal issues that respondents may not be entirely honest about, the descriptive survey approach yields untrustworthy data (Mugenda & Mugenda, 2009).

3.2.1 Variables in the study

Variables that formed the basis for data collection and analysis were the independent variables, dependent variable, and intervening variables. The independent variables had two categories. These were, student factors and teacher's factors. The student factors were personal effort, socio-economic factor, student artistic aptitude and

gender. The next were teacher factors which included, gender, pedagogical strategies, teaching belief. Supportive environment, traditions, staff skills, staff adequacy, were the intervening variables. Finally, student's level of creative achievement in fashion design was the dependent variable, which was also rationed on ordinal scale using 5-point scales.

3.2.2 Location of the Study

The current study was conducted in five colleges of education in Ashanti Region in Ghana as indicated by the location map in Appendix D. Ashanti Region was selected because it is a region where most of the technical, vocational and technology colleges of education were situated. Ghana's third-largest area is the Ashanti region. It is situated in Ghana's southern region. The Ashanti region's capital city is Kumasi. 10.2 percent of Ghana's total land area, or 24,389 km^3 (9,417 square meters), is made up of the Ashanti region. With 4,780,380 people living there as of the 2011 census, 19.4% of Ghana's total population, it is the most populous area in terms of population. There are thirty (30) districts in the Ashanti area, comprising one (1) Metropolitan, seven (7) Municipal, and twenty-two (22) districts.

Its borders are shared by the regions of Central, Western North, Eastern, Brong Ahafo, Bono East, and Ahafo. In contrast to the Volta region, the Ashanti region's residents speak Akan, a single language that is known as Akan which is widely spoken by the majority of Ghanaians.

3.3 Target Population

All the components that will satisfy the specific requirements stated for a research project are referred to as the target population (Alvi, 2016). Eight (8) colleges of

education are situated in the Ashanti Region in six districts, namely Offinso Municipality, Kumasi Metropolitan, Adansi West District, Asante Akin North District, Mampong Municipality, and Sekyere South District, according to the GTEC (n.d.) Eight (8) principals, thirty (30) tutors, and seven hundred and ninety-one 791 pupils made up the study's entire population. The target populations listed above were chosen to assist the researcher in identifying the population that would be most amenable to the research project. A breakdown of the target population's categories is shown in Table 3.1 below.

Table 3.1 Distribution of target population

Group	**Population**
Fashion Design Students	791
Fashion Design Teachers	30
Principals	8
Total	**829**

3.4 Sampling Techniques and Sample Size

3.4.1 Sampling Techniques

Three sampling techniques were used in the study. These included basic random, purposive, and stratified random sampling. In order to guarantee that the population was adequately represented to guide the current study, the three methodologies were modified.

Six districts out of thirty in the Ashanti Region were chosen for this study using a stratified random selection mechanism. These districts are, Kumasi Metropolitan, Adansi West District, Mampong Municipality, Offinso Municipality, Asante Akin

North District, and Sekyere South District. As a result, the Ashanti Region was split into the north, south, east, west, and central regions. After then, a predetermined number of cases were selected at random from each district (i.e., population sub-group). This guarantees that the entire area was covered. Using a purposeful sample technique, the principals and professors of fashion design were selected. Because it allows the researcher to obtain the precise data required for this study, the method of purposeful sampling was employed (Etikan, *et al.*, 2016). The researcher utilized simple random sampling to choose the students from the five colleges that were used. Because the researcher was unable to get information from every student at the five universities that were chosen, basic random selection was employed.

3.4.2 Sample Size

Thirty percent (30.0%) of the five colleges of education's enrolled fashion design students were used by the researcher. Five hundred, fifty (550) were sewing students, out of the 829 enrolled students at the five colleges of education were chosen as the sample size. Thirty (30) fashion design tutors were enrolled in the five colleges; eighteen (18) were chosen. The researcher selected 18 tutors as the sample size for the fashion design tutors out of the 30 total instructors throughout the five colleges by sampling 60% of the tutor population. Additionally, all five colleges of education's principals were consulted. As a result, there were 188 participants in the study overall. The distribution of the total sample size and percentages was described in Table 3.2.

Table 3.2: Sampling grid of participants of the study

Participants	Population	Sampled	Percentage
Fashion design students	550	165	30.0
Fashion design tutors	30	18	60.0
Principals	8	5	62.5
Total	**588**	**188**	**50.2**

Source: Author

3.5 Research Instruments

The questionnaire, and interview guide—all created and standardized by the researcher—were used to gather data. The researcher was able to get enough data thanks to the instruments.

3.5.1 Questionnaire for Students and tutors

The primary tool for gathering data was the questionnaires for tutors and students. Each questionnaire was easy to complete and met the study's unique goal. There were five (5) sections in the tutor's questionnaire. Section A centered on the demographic information of the tutor. Factors influencing creative teaching were discussed in Section B. Section C focused on instructional techniques meant to foster creativity whilst section D covered the impact of gender influence on creative teaching. Finally, the last part of the questionnaire, section E, addressed the challenges tutors faced in the attempt to teach creatively.

Five-point Likert scale was applied in structuring the questionnaire items. The student's questionnaire comprised six (6) sections: Section A had items seeking students' biographic data. Section B contained factors affecting students' creative learning. Section C, addressed students preferred pedagogical strategies to help

improve creativity in fashion design. Section D, covered the curriculum content and creative learning among students in fashion design while section E, comprised questions relating to challenges confronting the students in learning. Finally, section F, contained questions aimed at assessing if students learn creatively. Both close-ended and open-ended questionnaires were used. (Appendix A and B).

3.5.2 Interview Guide for Principals

A scheduled interview guide was employed to get information out of the college principals. The guide to the interview (Appendix C) includes questions about the difficulties of utilizing technology to promote creativity in education colleges, as well as demographic data about the principals. About thirty minutes were spent on each interview. This happened at the respondents' place of employment after work hours.

3.5.3 Documentary Analysis Checklist

The researcher visited the sampled colleges to check on relevant documents used for teaching creativity in fashion design. The researcher also visited the department to check on the fashion design equipment, computers for CAD (computer-aided design) and the environment with the support of research assistants. Refer to Appendix D,

3.6 Pilot Study: Validity and Reliability

Questionnaire for the study were piloted at St Louis College of Education which had similar features as the colleges of education selected for the study but was not part of the main study. Twenty students and four tutors were selected purposefully to pilot the questionnaire. The researcher visited the St Louis College of Education, and personally distributed questionnaires to students and tutors. Participants in the pilot study were instructed to record any missing words, ambiguity, or incorrect sequencing

in the items and to remark on them. The pilot study gave the researcher the opportunity to cross-check how easily items could be read and the meaning made out of them. Items that did not convey the right meaning were reviewed to ensure all items yielded usable data. Piloting also helped the researcher to note the length of time used in completing the items. The pilot study helped the researcher review items and sharpen them for the main study. The interview schedule for principals was also piloted using one principal.

3.6.1 Validity of the Instruments

A questionnaire's validity is checked to see if it measures the things it claims to assess. In other words, validity is the strength of our conclusions, inferences or propositions. Constructs, contents and face validity were used to conduct a pilot study in which the instruments of the study were pre-tested before the main study. The degree to which data from an instrument measurement completely and properly represents the theoretical idea is known as construct validity. Peers and subject-matter experts were involved to assure this. Additionally, the results of the piloting were used to modify the instruments. Content validity—also referred to as logical or rational validity—is an estimation of how well it captures each and every component of the instrument that was created.

The nature of content validity is qualitative. It queries whether a particular component improves the research. To ensure content validity, the researcher ensured that the research instruments were strictly guided by research objectives and hypotheses. The idea it claims to measure is considered as having face validity, which is subjective. This made sure that the research questions were well-thought-out and framed, and that they had been pre-tested to ensure that respondents would answer them as the study

intended. Content validity refers to whether a test is relevant given that it seems to test the respondents. The measurement of quality has an impact on the research's trustworthiness. In order for the results of a research study to be used successfully, validity is crucial, and variables that compromised validity should be managed as much as possible. Validity serves to validate that a tool is testing components in accordance with the goals of the research.

3.6.2 Reliability of the Instruments

Cronbach, (1951) defined reliability as the uniformity of a study's measurements of the extent of the specific instruments measures similar results each time a researcher uses it under similar circumstances with the same subjects (Creswell, 2014). Reliability of the research instruments were carried out to ensure matching subjects on a related variable or creating homogenous subgroups. The researcher ensured that the instruments were instituted through a pre-testing of the study which was done using 20 students and four tutors who qualified for the study, but were not designated as part of the study's sample. Internal consistency reliability was calculated using Cronbach coefficient alpha value. Cronbach value was found to be between 0.75 to 0.78, which is above the minimum threshold of 0.7 as recommended by Gliem and Gliem (2003). However, items which showed ambiguity and lack of clarity were reworded and reconstructed to improve their meaning to enhance respondents' comprehensions.

3.7 Data Collection Techniques

Questionnaire, and an interview guide served as the data collection tools. First, the researcher began the data collection process by obtaining a proposal approval letter

from the Dean of Kenyatta University Graduate School after the Board of Graduate School accepted the proposal. This allowed the researcher to meet the study's logistical needs and ensure that ethical issues were taken care of.

Subsequently, the researcher composed a letter of authorization and appended a duplicate of the research approval letter from Kenyatta University Graduate School to the Ghana Tertiary Education Commission (GTEC). The GTEC granted the researcher a research permission so that she may gather data from the chosen colleges of education for the intended audience.

3.7.1 Questionnaire

In each college, the researcher trained two of the research assistants by going over the goals of the study and how to complete the questionnaire. With the assistance of the research assistants, the questionnaire was given to tutors and students. The accessible population in each location determined how many duplicates of the questionnaire were distributed.

3.7.2 Interview

Principals were interviewed by the researcher. The researcher went to see the interviewee before the interview to:

i. Get their permission.
ii. Tell them why the research is being done.
iii. Look for a time and date for an appointment.

The interviewee received the interview guide to help them prepare. The interviewee was asked for permission to record the discourse that took place during the interview with the principals. The interviewees took place in the places where they worked. The

researcher looked over several pertinent government and fashion design regulations while visiting the chosen college's administrative offices. (Refer to Appendix F, G, and H.

3.7.3 Document Analysis

The researcher visited the sampled colleges to check on relevant documents used for teaching creativity in fashion design. The researcher also visited the department to check on the fashion design equipment, computers for CAD (computer-aided design) and the environment with the support of research assistants. Refer to Appendix D,

3.8 Data Analysis

After gathering both quantitative and qualitative data for the study, the researcher organized the data into themes and study objectives in an effort to effectively address the research questions. The study's preference for closed-ended questionnaires and a structured portion of the interview schedule led to the classification of quantitative raw data collected from the field using the computer program Statistical Package for Social Studies (SPSS). During the data analysis procedure, inferential and descriptive statistics were applied. In order to assess the data and the results that were displayed using tables of frequencies, means, percentages, and standard deviations, the researcher employed descriptive statistics.

Additionally, the researcher employed the goodness of fit chi-square test for inferential statistics. This aided in evaluating the developed null hypotheses. To determine whether there was sufficient evidence to support each independent variable's influence on fashion design instruction and learning, chi-square analysis was performed. Every hypothesis was examined at the significance threshold of

$p<0.05$ alpha. The raw data gathered from the interviews was coded by the researcher by hand. The raw data was converted and manually coded according to the different themes. To create categories, the data was matched and arranged based on similarities. Research objectives/ hypotheses, and measuring statistical tools are given in Table 3.3.

Table 3.3 Objectives & Hypotheses and Measuring Statistical Tool

Objectives	Hypotheses	Statistical Methods
Objective 1: To establish (a) the teachers' and (b) students' factors that promote creative teaching and learning in fashion design.	Ho_1: There is no significant relationship between teachers' and students' factors and creative teaching and learning in fashion design.	Frequency count & percentage Chi-square
Objective 2.To determine the pedagogical strategies that promote creativity in fashion design.	**H_{02}**: There is no statistically significant relationship between pedagogical strategies used by college education teachers that promote creativity in fashion design.	Frequency count & percentage inferential Chi-square
Objective 3.To assess the relevance of curriculum content in terms of promoting creative learning in fashion design.	Ho_3: There is no statistically significant relationship between creative teaching and the learning of fashion design.	Frequency count.& percentage Chi-square
Objective 4. To identify gender influences on creative achievement among students in fashion design. Objective 5: To investigate the challenges facing teachers and students in the achievement of creativity in apparel construction.	**H_{04}:** There is no significant influence of gender on creativity achievement in fashion design.	Frequency count.& percentage inferential Chi-square

3.9 Logistical and Ethical Considerations

Regarding logistical consideration, the researcher estimated all the activities that were performed in course of the research. These activities were; concept paper development, proposal development, pilot study, administration of research instruments, data analysis, writing a research report, submission of a final research report, and dissemination of research findings. These guided the researcher to schedule time for the activities make adequate financial provision for all the activities.

3.10 Ethical Considerations

To satisfy ethical requirements the researcher received a research authorization from GTEC. In order to obtain authorization to gather data, copies of the study permit were given to the principals of the chosen institutions in the Ashanti Region of Ghana. At the research sites, participants were told the purpose of the study and their right to decide to participate or not to participate in the study. Participants were assured of their anonymity as the instruments did not require their names or index numbers. Instruments were then administered to respondents and data collected for the study.

CHAPTER FOUR: REPORTING, INTERPRETATION AND DISCUSSION OF THE FINDINGS

4.1 Introduction

Chapter four presents the findings, interpretation of results and discussion according to the objectives. The purpose of this study was to investigate teaching strategies of vocational skills tutors and students creative skills achievements in fashion design in Ghana Colleges of Education. To achieve this, it was important to:

i. To establish (a) the teachers' and (b) students' factors that promote creative teaching and learning in fashion design.
ii. To determine the pedagogical strategies that promote creativity in fashion design.
iii. To assess the relevance of curriculum content in terms of promoting creative learning in fashion design.
iv. To identify gender influences on creative achievement among students in fashion design.
v. To investigate challenges facing teachers and students in the achievement of creativity in apparel construction.

The study also tested the following null hypothesis at 0.05 level of significance.

Ho_1: There is no significant relationship between teachers' and students' factors and creative teaching and learning in fashion design.

H_{02}: There is no statistically significant relationship between pedagogical strategies used by college education teachers that promote creativity in fashion design.

Ho_3: There is no statistically significant relationship between creative teaching and the learning of fashion design.

H_{04}: There is no significant influence of gender on creativity achievement in fashion design.

4.2 Demographic Characteristics of the Teachers and Students

The demographic characteristics of the teachers and students in this study were examined. Data was collected from the one hundred and eighty-eight (188) respondents made up of 165 students, 18 teachers and 5 principals. The demographic characteristics information is important because they are the variables who determine the strategies to employ in creating creativity in fashion design. The teachers' demographic information sought were gender, age, teaching experience and highest academic qualifications. On the part of the students, the study looked at their gender, age and prior experience in learning sewing before enrolled into the colleges of education. From the data collected from the teachers, percentages and frequencies were calculated for each item.

4.2.1 Demographic Characteristics of the Teachers

The data collected were related to gender, age, teaching experience and highest academic qualifications. The demographic characteristics of the teachers are presented in Table 4.1.

Table 4.1 Demographic Characteristics of the Teachers (N=18)

Statements		Frequency	Percent
Gender	Male	4	22.2
	Female	14	77.8
	Total	**18**	**100.0**
Age	30-35	1	5.6
	36-40	1	5.6
	41-45	1	5.6
	46 and above	15	83.3
	Total	**18**	**100.00**
Highest qualification	Ph. D	1	5.6
	Master's degree	15	83.3
	Bachelors' degree	2	11.1
	Total	**18**	**100**

Source: Data

Table 4.1 reveals that majority of the teachers, 14 (77.8%), were females whilst only 4 (22.2%) were males. As regards the ages of the teachers, only 1 (5.6%) was 30 – 35 years whilst 15 (83.3%) of them were 46 years and above. When it comes to teaching experience, 6 (33.3%) of the teachers have taught for 16 – 20 years whilst 4 (22.2%) others each have taught for 21 years and above and less than 5 years respectively. Two of the teachers each representing 11.1 percent, have taught for 5 – 10 and 11 – 15 years respectively. The results indicated that majority of the teachers had teaching experience of 20 years and below, hence have had adequate experience to teach vocational skills in the colleges of education in Ghana.

On the issue of highest academic qualifications, as many as 15 (83.3%) of the teachers are master's degree holders whilst 1 (5.6%) and 2 (11.1%) others were Ph. D and bachelor's degree holders respectively. This showed that most of the teachers had the requisite qualifications to teach in the colleges of education in Ghana.

4.2.2 Biographic Data of the Students

The biographic data sought from the students were gender, age and prior experience in sewing before enrolled into the colleges of education. The data was analysed using frequencies and percentages. Table 4.2 shows the bio data provided by the students.

Table 4.2 Biographic Data of the Students (N=165)

Statements		Frequency	Percent
Gender	Male	98	59.4
	Female	67	40.6
	Total	**165**	**100.0**
Age	Below 18 years	10	6.1
	18 – 25	131	79.4
	26 – 30	20	12.1
	31 – 35	2	1.2
	36 – 40	2	1.2
	Total	**165**	**100.00**

Male students formed majority of the student respondents, 98 (59.4%) whilst the females were 67 (40.6%). This implies that more males than females pursue vocational skills in the colleges of education in Ghana. Majority of the students were between 18 – 25 years of age whilst 6.1% were below 18 years of age. On the issue of prior sewing experience, majority of the students 108 (65.5%) responded that they had no sewing experience before being enrolled in the Colleges of Education to pursue vocational skills programmed whilst 57 (34.5%) of them were in the affirmative response as presented in Figure 4.1.

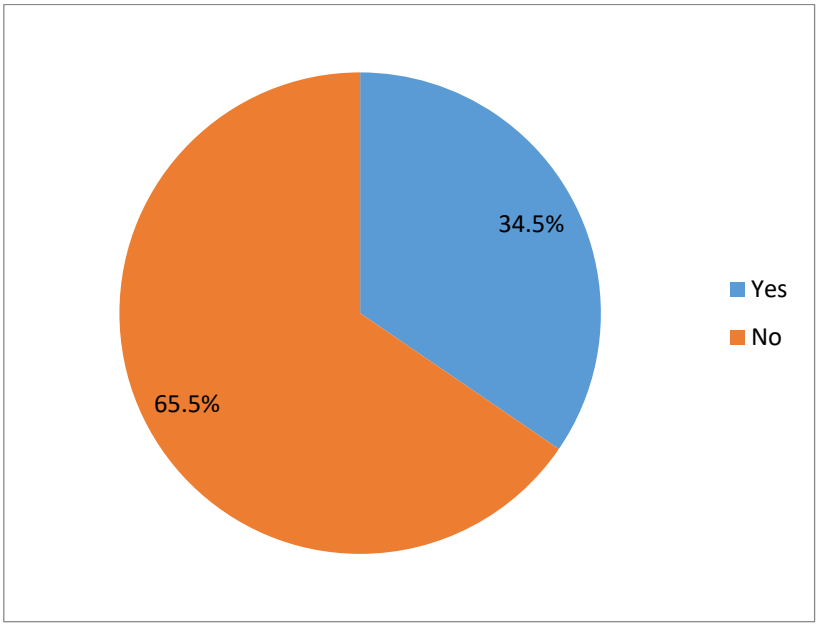

Figure 4.1: Prior Sewing Experience of Students before Enrolment

The study further delved into informal sewing experiences of the students before enrolment into Colleges of Education. The responses given by the students are in Table 4.3.

Table 4.3 Informal Sewing Experiences before Enrolment into Colleges of Education

Statements	Frequency	Percent
Yes	59	35.8
No	106	64.2
Total	**165**	**100.0**

Table 4.3 indicates that 106 (64.2%) of the students had no formal experience in sewing before being enrolled into colleges of education whilst few of them, 59 (35.8%) have had some form of informal sewing experience.

4.2.3 Background Information of the College Principals

Five of the principals of the Colleges of Education in the Ashanti Region were interviewed. Three female and two male principals were interviewed. They have been principals for less than five years and between 5 and ten years respectively.

4.3 Student's creative Ability

The dependent variable in the study was the student's creative achievement in fashion design. The study considered the acquisition of creative skills in fashion design performance affected by the student's positive attitude toward creativity which students achieved creativity in fashion design are the intervening variables. The students were asked a range of Likert scale questions on their creative ability. Table 4.4 displays their responses.

Table 4.4: Students' Creative Ability

Statement		SA	A	N	D	SD
I have a large number of ideas and solutions in design and actual sewing	F	46	53	37	20	9
	%	27.9	32.1	22.4	12.1	5.5
I am often caught dreaming about a particular fashion design	F	53	57	43	5	7
	%	32.1	34.5	26.1	3.0	4.2
I find myself concerned about improving or modifying what the tutor teaches us	F	47	73	25	12	8
	%	28.5	44.2	15.2	7.3	4.8
I find myself asking many questions which sometimes are not understood by my colleagues	F	44	65	41	11	4
	%	26.7	39.4	24.8	6.7	2.4
I complete projects or assignments that are difficult and that require abstract thinking at the right time.	F	48	43	57	11	6
	%	29.1	26.1	34.5	6.7	3.6

N=165

As table 4.4 shows, the majority of students agreed or strongly agreed that they have a large number of ideas and solutions in design and actual sewing where 46(27.9%) strongly agreed and 53(32.1%) strongly agreed with the opinion. Contrary, 20(12.1%) disagreed and 9(5.5%) indicated that they strongly disagreed that they have large ideas and solutions in sewing and design with 37(22.4%) being neutral.

The table further shows that the majority of respondents 53(32.1%) and 57(34.5%) strongly agreed and agreed that they are often caught dreaming about a particular fashion design while 43(26.1%) were neutral. Contrary only minority 5(30%) and

7(4.2%) disagreed and strongly disagreed that they are often dreaming about a particular fashion design.

The table 4.4 shows that the majority of students 73(44.2%) and 47(28.5%) indicated they agreed and strongly agreed that they are often concerned about improving or modifying what they are taught in class while 35(15.2%) were neutral on his claim. Contrary, 12(7.3%) disagreed and 8(4.8%) strongly disagreed that they modify what they are taught by the tutors.

The table 4.4 shows that the majority of students 44(26.7%) strongly agreed and 65(39.4%) agreed that they find themselves asking many questions which are not understood by their colleagues while 41(24.8%) were neutral while a minority 11(6.7%) and 4(2.4%) disagreed and strongly disagreed that they ask questions that are not understood by their colleagues.

Lastly, the table 4.4 shows that the most of the students 48(29.1%) strongly agreed and 43(26.1%) agreed that they compete difficult projects on time even those that require abstract thinking while a minority 17(10.3%) claimed that they do not complete difficult assignments that require abstract thinking.

In order to conduct the chi-square analysis, the Likert scale was grouped together by creating composite measurements. The scales for strongly agreed and agreed were combined and coded as ‘1’, while neutral was coded as ‘2’. Strongly disagreed and disagreed were combined and coded as ‘3’. The descriptive results for the dependent variable to be used in the chi-square analysis are presented in table 4.5.

Table 4.5: Composite Table for Students' Creative Ability

Statement		A	N	D
I have a large number of ideas and solutions in design and actual sewing	F	96	40	29
	%	58.2	24.2	17.6
I am often caught dreaming about a particular fashion design	F	110	42	13
	%	66.7	25.5	7.9
I find myself concerned about improving or modifying what the tutor teaches us	F	120	25	20
	%	72.7	15.2	12.1
I find myself asking many questions which sometimes are not understood by my colleagues	F	108	39	18
	%	65.5	23.6	10.9
I complete projects or assignments that are difficult and that require abstract thinking at the right time.	F	91	55	19
	%	55.2	33.3	11.5

N=165

Table 4.5 shows that the majority of respondents 96(58.2%) indicated that they have many ideas and solutions on sewing and design while 40(24.%) were neutral and a minority 29(17.6%) were neutral in this regards. These findings imply that most students have converging ideas and solutions on sewing and design. Further, it can be seen that the majority of students 110(66.7%) indicated that they are often daydreaming about particular fashion design while a minority 13(7.9%) argued that they do not daydream about fashion design whereas 42(25.5%) were neutral in this regard. These findings imply that the students imagination is rife with new ideas and their minds often wander off imagining new fashion as Byers (2017) argued that

relating creativity to the process of changing novel and innovative concepts into being, Byers (2017) posit that imaginativeness is a two-way endeavor beginning with thinking then moving forth with the act of producing.

The table 4.5 shows that the majority of students 120(72.7%) indicated that they are concerned about improving or modifying what they are taught while minority 25(15.2%) were neutral and 0(12.1%) disagreed with the claim. These findings imply that the majority of students are concerned with enhancing or beefing up what they are taught in class. As Mumford (2003) argues, creativity requires originality in thinking and then producing those ideas into tangible products and services. The process is concerned with originality in thinking and then transferring the thoughts into production.

The table 4.5 then shows that the majority of the students 108(65.5%) indicated that they sometimes ask questions not understood by their colleagues while 18(10.9%) refuted the claim. These findings imply that most of the students think beyond what they are taught in class and explore ideas from different angles which may not be understood by the colleagues. As creativity occurs when an individual combines different thing, previously unrelated, and makes something unique. In terms of attitude, creativity is the difference in how people see things. It is all about possibilities and nothing is right or wrong (Lubat, 1996).

Lastly, the table 4.5 shows that most of the students 91(55.2%) complete projects and assignments that are difficult and require abstract thinking one time while 55(33.3%) were neutral and 19(11.5%) refuted the claim indicating that they do not complete difficult assignments on time. The findings suggest that for most students difficult

assignments that require abstract thinking do not pose a challenge for them even though a number of them experience challenges.

4.4 Teachers' and students' factors that promote creative teaching and learning in fashion design

The study sought to find out from both teachers and students, factors that promote creativity in fashion design among them in vocational skills programme in the colleges of education in Ghana. According to Smith (2000), teachers play pivotal role in providing creativity to students by giving learners' an opportunity to develop high-cognition. Based on this assertion, the study examined teacher factors that promote creativity teaching and learning in fashion design in the colleges of education in Ghana.

4.4.1 Teachers' factors

Table 4.6 provides a summary of the various factors enumerated by the teachers. The responses were measured using a five-point Liker Scale strongly agree (SA), agree (A), neutral (N), disagree (D) and strongly disagree (SD).

Table 4.6 Teacher Factors Promoting Creativity in Fashion Design at Colleges of Education

Statement		SA	A	N	D	SD
Practicing traditional method of teacher-centered instruction bring out students' creativity.	F	2	5	1	7	3
	%	11	27.8	5.6	38.9	16.7
Practicing traditional method of teacher-centered instruction do not allow me to creative enough.	F	4	7	1	6	0
	%	22.2	38.9	5.6	33.3	0
Focusing on students' interest and adopting a student-centered approach do not brings out students creativity innovatively.	F	3	3	3	5	4
	%	16.7	16.7	16.7	27.8	22.2
Focusing on students' interest and adopting a student-centered approach brings out creative idea from my students.	F	10	7	0	1	0
	%	55.6	38.9	0	5.6	0
Posting a question and allowing classroom discussion among students has been great at creating new ideas.	F	7	9	0	1	1
	%	38.9	50	0	5.6	5.6
Posing a question and allowing interactive brainstorming is do not bring out new ideas.	F	9	8	0	0	1
	%	50	44.4	0	0	5.6
Classrooms are conducive for teaching creativity.	F	3	3	2	7	3
	%	16.7	1.6.7	11.1	38.9	16.7
The teachers are afraid to promote risk-taking.	F	1	7	4	6	0
	%	5.6	38.9	22.2	33.3	0
My family supports me financially and that help me to explore new creative ideas from many places.	F	1	4	4	9	0
	%	5.6	22.2	22.2	50	0
	F	1	8	5	4	0

My family do not supports me financially and that make me not to explore new creative ideas from many places.	%	5.6	44.4	27.8	22.2	0
The teaching and learning equipment are outmoded for creative teaching	F	4	8	2	3	1
	%	22.2	44.4	11.1	16.7	5.6
The teachers are not interested in mastery CAD	F	2	9	3	2	2
	%	11.1	50	16.7	11.1	11.1
The teachers sometimes do collaboration creative leaning during their workshops.	F	6	8	0	3	1
	%	33.3	44.4	0	16.7	5.6

N=18

Table 4.6 reveals that in general 2(11%) and 5(27.8%) of the teachers strongly agreed and agreed that practicing traditional method of teacher-centered instruction brings out students' creativity whilst 7(38.9%) strongly agreed and 3(16.7%) disagreed to the statement with only 1 (5.6%) teacher being neutral. This implies that teachers who practice traditional method of teacher–centered instruction do not bring out creativity in students' learning fashion design.

On the other hand 4(22.2%) of the teachers strongly agreed and 7(38.9%) agreed that practicing traditional method of teacher – centered instruction do not allow students to be creative enough whilst 6 (33.3%) others disagreed to the assertion with 1 (5.6%) of the teachers being neutral. It was also found teachers use of teacher-centered method and classrooms to teach fashion design do not produce creativity among the students. These findings are consistent with those of Smith (2000) and Akomaning (2022). According to Smith (2000), teachers should adopt attitudes that ensured that

students adopt a creative approach to learning as well as provide a pivotal role of creativity in giving learners an opportunity to develop high-cognition of creativity. Concerning the teachers' focus on students' interest and adopting student-centered approach do not bring out students' creativity innovatively, only 3(16.7%) strongly agreed and 3(16.7%) of the teachers agreed to the statement whilst 5(27.8%) disagreed and 4(22.2%) strongly disagreed to the assertion and 3 (16.7%) others were neutral. On the contrary, the statement "Focusing on Students' interest and adopting a student-centered approach brings out creative idea from students", as many as 10 (55.6%) of the teachers strongly agreed and 7(38.9%) agreed to the statement with only 1(5.6%) of the teachers who disagreed to the students. This means that the teachers have seen that use of students' centered approach in instruction make students to develop creative skills in fashion design.

The study further explored from the teachers how posting questions and allowing students to engage in discussion in the classroom leads to creating new ideas among the students. It was found that only 2 (11.2%) of the teachers were in disagreement to the statement with as many as 7(38.9%) strongly agreed and 9(50%) of the teachers agreed with the statement. This indicated that when students are allowed to discuss issues in the classroom, they can generate new ideas among themselves.

When it comes to the issue of posing a question and allowing interactive brainstorming is do not bring out new ideas. This result is confirmed by 9(50%) of the teachers who strongly agreed and 8(44.4%) agreed to the statement whilst only 1 (5.6%) teacher disagreed to this statement.

With regards to family financial support, that help me to explore new creative ideas from many places, 1 (5.6%) of the teachers strongly agreed and 4(22.2%) agreed that their family financial support help me to explore new creative ideas from many places, whilst 4 (22.2%) and 9 (50%) other teachers were neutral and disagreed respectively. This implies that family financial support can help students to explore new creative ideas from many places.

This result is consistent with the response of 8 (44.4%) teachers who agreed and 1(5.6%) strongly agreed with the statement "my family do not support me financially and that makes me not to explore new creative ideas from many places" with only 4(22.2%) of the teachers who disagreed to the statement and 5(44.4%) of the teachers was neutral to the statement.

For the statement "classrooms are conducive for teaching creativity" 3 (16.7%) of the teachers strongly agreed and 3(16.7%) agreed with the statement whilst 7 (38.9%) of the teachers were in disagreement to the statement with 3(16.7) strongly disagree and 2(11.1%) others been neutral to the statement.

Similarly, for the statement "the teachers are afraid to promote risk-taking, 6 (33.3%) of the teachers disagreed to the statement, with 7(38.9%) agreeing and 1(5.6%) strongly agreeing respectively to the statement while 4 (22.2%) being neutral respectively.

One other factor examined was the tutors are not interested in mastery CAD. Here, 2 (11.1%) of the teachers strongly agreed and 9(50%) agreed with the statement whilst 2(11.1%) of the teachers disagreed and strongly disagreed respectively with 3 (16.7%) other teachers being neutral with the statement. Whilst as many as 8 (44.4%) of the

teachers agreed that teaching and learning equipment are outmoded for creative teaching, only 4 (22.2%) of the teachers strongly agreed with 3(16.7%) disagreed and 1(5.6%) the statement with 2 (11.1%) others being neutral.

For collaborative learning, 8 (44.4%) of the teachers agreed and 6(33.3%) strongly agreed that sometimes collaboration in creative learning during their workshops promotes their creativity, whilst 3 (16.7%) of the teachers disagreed and 1(5.6%) to the statement. This result indicated that collaboration in creative learning during works can promote creativity in fashion design among teachers.

The results in Table 4.6 showed that teacher factors such as focusing their teaching on students' interest, use of student-centered approach, posting questions and allowing classroom discussion among students have been found to create new ideas and creativity among students. Other teacher factors such as posing question and allowing interactive brainstorming, family financial support, use of modern equipment, collaboration learning during workshops among teachers also promote creation of new ideas and creativity among the teachers.

4.4.2. Students' Factors that Promote Creative Learning in Fashion Design

The study delved into students' factors that promote creativity among students in fashion design. The students were presented with eight statements on factors that deal with creativity in fashion design and asked to show their level of agreement to the statement using strongly agree (SA), agree (A), neutral (N), disagree (D) and strongly disagree (SD) for their responses. Table 4.7 presents a summary of the responses provided.

Table 4.7 Students' Factors that Promote Creativity in Fashion Design

Statement		SA	A	N	D	SD
Practicing sewing beyond the classroom improves my creativity	F	119	34	9	2	1
	%	72.1	20.6	5.5	1.2	.6
Finish assignments and going beyond my classroom coursework improves my creativity	F	76	71	14	2	2
	%	46.1	43	8.5	1.2	1.2
Thinking beyond what the tutor is telling me and implementing it improves my creativity	F	83	63	9	5	5
	%	50.3	38.2	5.5	3	3.0
Engaging my community with questions on fashions gives me new creative ideas	F	74	62	22	3	4
	%	44.8	37.6	13.3	1.8	2.4
Researching online materials on fashion boosts my creativity	F	90	50	15	6	4
	%	54.5	30.3	9.1	3.6	2.4
My family hardly inspires me to try a new idea	F	34	52	44	15	20
	%	20.6	31.5	26.7	9.1	12.1
Lack of financial support hinders creative idea	F	65	54	33	7	6
	%	39.4	32.7	20	4.2	3.6
Resources and structures are stimulating creative learning	F	53	68	25	6	13
	%	32.1	41.2	15.2	3.6	7.9

N=165

It could be observed from the results presented in Table 4.7 that majority of the students either strongly agreed or agreed to the eight statements presented to them. For instance, as many as 119 (72.1%) of the students strongly agreed 34(20.6) agreed that practicing sewing beyond the classroom improves their creativity, only1 (0.6%) of them strongly disagreed with another 9 (5.5%) being neutral. The results indicated that majority of the students 153 (92.7%) agreed that practicing sewing beyond the classroom improves their creativity.

Concerning finishing assignments and going beyond classroom coursework improves creativity, only 2 (1.2%) and 2(1.2%) of the students disagreed and strongly disagreed with 14 (8.5%) of them being neutral. The remaining 76(46.1%) strongly agreed and 71(43%) of the students agreed with the statement. The findings imply that the students finish the assignments and coursework leading to increased creativity.

These findings of the study confirmed those of Eswquivel (1995), O'Brien (2017) and Sternberg and Lubart (1996). Esquivel (1995) reported that fashion design students' creative learning requires hard work, commitment in terms of energy, time and effort in planning and readiness prior to the activity. Most students practicing sewing beyond classroom, finishing assignments and going beyond classroom coursework and thinking beyond what they were taught in the classroom as found in this study are examples of students' commitment in terms of energy, time and effort in planning and readiness to carry out activity. Concerning the statement "Thinking beyond what the tutor is telling me and implementing it improves my creativity", 83(50.3%) and 63(38.2%) the students strongly agreed and agreed to the statement respectively with only 10 (6.0%) and 9 (5.5%) of the students disagreeing and neutral respectively. These results imply that students finishing assignments as well as going beyond classroom coursework and thinking beyond what teachers teach create creativity among them in fashion design.

With the issue on engaging community with questions on fashions promotes new creative ideas most of the students, 74(44.8%) strongly agreed and 62(37.6%) agreed with the statement whilst 22 (13.3%) and 3(1.8%) disagreed and 4(2.4%) strongly disagreed. other students were neutral and negative about the statement respectively.

Thus, students' engagement with the questions on fashions promotes new creative ideas among them.

Similarly, 34(20.6%) of the students strongly agreed and 52(31.5%) agreed that researching online materials on fashion boosts their creativity, only 20(12.1%) strongly disagreed and 15(9.1%) disagreed with 44(26.7%) neutral to the statement. The results also support those of Naiman (2010) who contended that the processes of obtaining information, abilities and knowledge lead to creative processes. Most of the students' research on online materials as well as resources and structures are stimulating abilities and knowledge which lead to creative processes.

With motivation and inspiration, 34 (20.6%) of the students strongly agreed and 52(31.5%) agreed that their families hardly inspire them to try a new idea, 44 (26.7%) of the students were neutral whilst 20 (12.1%) of the students strongly disagreed and 15(9.1%) disagreed with the statement. The results indicated that students' effort in looking for online materials and motivation as well as family inspiration promote new ideas in students leading to their creativity in fashion design. Similarly, O'Brien (2017) assertion that parental support and motivation create a good family environment where children learn and nurture their creativity is true with these study findings. As this study revealed that most of the students agreeing that their families hardly inspires them to try a new idea and lack of financial support hinders their creative idea, implies that good family environment are not created for the students to develop their creativity in fashion design.

With financial support, 65 (39.4%) of the students strongly agreed and 54(32.7%) agreed that lack of financial support hinders their creative ideas whilst 33 (20.0%)

other students were neutral with only 7 (4.2%) and 6(3.6%) of the students being in disagreement to the statement. On resources and structures are stimulating creative learning, as many as 53(32.1%) and 68(41.2%) of the students strongly agreed and agreed with the statement respectively, whilst 13 (7.9%) of the students strongly disagreed and 6(3.6%) disagreed. The remaining 25 (15.2%) of the students were neutral. These results imply that financial support and use of resources as well as structures promote creative ideas and creative learning among students. From the results presented in Table 4.7, students' factors which promote creativity in fashion design in the colleges of education in Ghana were practicing sewing beyond classroom, finishing assignments and going beyond classroom coursework, thinking beyond what is taught and engaging community with questions on fashions create new ideas and hence their creativity in fashion design.

In addition, students' research on online materials, motivation and inspiration from families as well as financial support and use of resources and structure promote creativity and creating of new ideas among the students. In order to determine whether there was a statistically significant association between student factors and student's creative ability, a Pearson chi-square analysis was done. In order to conduct the chi-square analysis, the aspects of students' creative ability were computed to create one composite variable. To achieve this, the Likert scale was narrowed to three scales where strongly agree and agree were combined to 'agreed=1', neutral was retained as '2' and disagree and strongly disagree were combined to 'disagree=3.' The mean values were then rounded off to the nearest whole number to get the respective values for each respondent. The chi-square results are presented in table 4.8. The chi-square analysis was conducted to test the study's first hypothesis.

Ho_1: Teachers' and student's factors do not affect creative teaching and learning in fashion design.

Table 4.8: Chi-square analysis

Statement			**Students' Creative Ability**			**X^2**	**P Value**
			A	**N**	**D**		
Practicing sewing beyond the classroom improves my creativity	A	F	93	35	2	9.584	0.044
		%	56.36	21.21	1.21		
	N	F	8	23	0		
		%	4.85	13.94	0		
	D	F	0	1	3		
		%	0	0.06	1.81		
Finish assignments and going beyond my classroom coursework improves my creativity	A	F	108	38	1	9.408	0.049
		%	65.45	23.03	0.6		
	N	F	10	3	1		
		%	6.06	1.82	0.6		
	D	F	1	3	0		
		%	0.61	1.82	0		
Thinking beyond what the tutor is telling me and implementing it improves my creativity	A	F	104	38	2	10.829	0.035
		%	63.03	23.03	1.21		
	N	F	10	1	0		
		%	6.06	0.61	0		
	D	F	5	5	0		
		%	3.03	3.03	0		
Engaging my community with questions on fashions gives me new creative ideas	A	F	103	35	0	15.863	0.003
		%	62.42	21.21	0		
	N	F	13	6	1		
		%	7.88	3.64	0.61		
	D	F	3	3	1		
		%	1.82	1.82	0.61		
	A	F	105	32	2	10.823	0.036

Researching online materials on fashion boosts my creativity		%	63.64	19.39	1.21		
	N	F	10	7	0		
		%	6.06	4.24	0		
	D	F	4	5	0		
		%	2.42	3.03	0		
My family hardly inspires me to try a new idea	A	F	66	18	2	6.208	0.184
		%	40.0	10.91	1.21		
	N	F	32	12	0		
		%	19.39	7.27	0		
	D	F	21	14			
		%	12.73	8.48			
Lack of financial support hinders creative idea	A	F	82	36	2	12.633	0.049
		%	49.7	21.82	1.21		
	N	F	30	2	0		
		%	18.18	1.21	0		
	D	F	5	1	0		
		%	3.03	0.61	0		
Resources and structures are stimulating creative learning	A	F	81	37	2	10.873	0.043
		%	49.09	22.42	1.21		
	N	F	23	2	2		
		%	14.55	1.21	1.21		
	D	F	14	5	0		
		%	8.48	3.03	0		

N=165

As table 4.8 shows, the majority of the students who agreed that they practice sewing beyond the class room improved their creativity were those who generally demonstrated student creative ability by agreeing 93(56.36%) with the opinions on creative ability. Similarly, the majority of those who were neutral in regards to sewing practice were also neutral in their view on their creative ability 23(13.94%) while the

majority of those who did not indicate creative ability were those who refuted that they practice beyond the classroom. These findings imply that there is a relationship between practicing sewing beyond the classroom and student's creative ability. The association was found to be statistically significant at (X^2=9.584, p value 0.044) which shows that that practicing beyond the classroom does have a statistically significant impact on the likelihood of students being creative. Essentially, experimenting with different designs comprise various elements such as student activities critical thinking, strong motivation and developing of meaningful content (Nold, 2017). While these are just elements of experiments, they go beyond theories which allow students and teachers to hypothesize and come with new ideas, hence, in actuality, they are constructs of creativity.

In regards to finishing assignments and going beyond the classroom course, the majority 108(65.45%) of those who agreed with the statement were those who indicated that they had creative ability whereas the majority of those who disagreed 3(1.82%) were likely to be neutral in their creative ability. These findings imply that finishing assignments and studying beyond the coursework increases the likelihood of students demonstrating creative ability as supported by the statistically significant chi square results (X^2=9.408, p value 0.049. These findings imply that where the students finish their assignments on time and challenge themselves to go beyond what they are taught in the coursework, then they are likely to be creative. Evidently, the instructional process engages students in active learning and more attention is given to students metal cognitive strategies. Student-centered instructional strategies are encouraged in fashion design since it improves creativity among students due to its

ability to encourage students to move beyond what is taught in class to be creative (Qutoshi & Poudel, 2014)

The table 4.8 further shows that the majority 104(63.03%) of those who agreed that they think beyond what the tutor tells them portrayed aspects of creative ability while the majority of those who did not think beyond what they were taught by the teacher 1(0.61%) were neutral in regards to their creativity. The findings imply that creative ability is influenced by the student's ability to think beyond what they were instructed by the teacher as supported by the statically significant chi-square results where (X^2=10.829, p value 0.035). These findings imply that those students who think beyond what they are taught are likely to demonstrate creative ability as compared to those who do not think beyond what they are taught by the tutors. As Schirrmacher (1998) said critical thinking can be compared to different ways of thinking. When there are numerous options or possibilities, thinking becomes divergent. Divergent thinking is flexible and allows for a wide range of options.

The students 103(62.42%) who indicated that they engage their community with questions on fashion were those who also indicated that they are creative while most of those who disagreed 3(1.82%) and 6(3.64%) of those who were neutral did not have an opinion on their creative ability. similarly, most of those who did not demonstrate creative ability 1(0.61%) were those who also claimed that they do not engage their community. These suggest that engaging the community with questions is likely to influence the students' creative ability as supported by the statistically significant inferential results (X^2=15.863, p-value 0.003). Therefore, it can be deduced that engagement of the community with questions pertaining to their fashion needs is likely to impact the students' creative ability. According to Bill (2013), the globe

requires imaginative, forward-thinking people who can come up with original answers to the problems facing businesses and society. As a result, the value of creativity has grown in educational initiatives, economic development initiatives, and sectors like fashion design. The table 4.8 shows that the majority of the respondents 105(63.64%) of those who indicated that they research online material on fashion were also the majority of people who typically opposed 5(3.03%) weren't creative, in contrast to those who generally concurred with parts of creative ability. This relationship between research and creative ability was found to be statistically significant at (X^2=10.823, p value 0.036). The findings imply that conducting research online increases the students' likelihood of being creative. As Adams and Kemevor (2018) argue Teaching pupils to strike a balance between synthetic, analytical, and practical reasoning is essential for fostering and enhancing creativity.

The learners desire to carry out further online research in this instance demonstrates the importance of having a creative attitude in addition to creative thinking abilities. (Adams &Kemevor, 2018). The majority of the students 66(40%) who agreed are not inspired by their family to try new ideas demonstrated creative ability while the majority 21(12.73%) of those who disagreed with the claim. The findings imply that lack of inspiration from the family does not have an association with students' creative ability as indicated by the lack of statistically significant value (X^2=6.208 p value 0.184). These findings imply that where family encourage the students to try new ideas, then their creative ability would likely also improve, but as it is, most students do not get encouragement from their families. As Kaput (2018) asserts, support is critical for creativity among students.

The table 4.8 shows that most 82(49.7%) of those who agreed that lack of financial support hinders creative ideas were those who indicated that they are creative while the majority of those lacked an opinion 2(1.21%) were also likely not to be aware of their creative ability. The findings suggest an association between financial support and students' creative ability (X^2=12.633, p value 0.049). The findings imply that financial support is likely to improve the students' creative ability. Kaput (2018) reiterates that students should have the freedom to initiate the establishment of clubs, based on their interests and manage them with assistance from teachers and other support groups which requires sufficient finances to conduct the activities of these groups.

Lastly, the table 4.8 shows that the most of the students 81(49.09%) who agreed that resources and structures stimulate creative learning while most of those who did not agreed with aspects of creative learning 2(1.21%) being those who were neutral and most of those who disagreed 5(3.03%) also being neutral in regards to their creative ability. these findings imply that resources and structures influences the students creativity (X^2=10.873, p value 0.043) suggesting that the presence of structures and resources that create a stimulating learning environment is likely to influence the students' creative ability. According to Seymour (2006), the effectiveness of non-formal training is frequently severely hampered by the dearth and insufficiency of instructional resources. Above all, it has frequently been challenging to ensure the feasibility and durability of programs. For instance, a trainee has to be equipped with a machine for sewing, tapes, threads, bobbins, fabrics and bobbin cases, in order to efficiently learn fashion design abilities. This suggests that for vocational training and education to be delivered in an appropriate manner, sufficient instructional resources

are needed. Therefore, in general, all of the student factors had a statistically significant influence on the students creative ability where practicing sewing (X^2=9.584, p=0.044), finishing assignments (X^2=9.408, p=0.049), thinking beyond what is taught (X^2=10.829, p=0.035), engaging the community (X^2=15.863 p=0.003), researching online (X^2=10.823, p=0.036), financial support (X^2=12.663,p=0.049), resources and structures (X^2=10.973, p=0.043). Therefore, based on these statistically significant association between student factors and students' creative ability, the study rejects the null hypothesis.

Ho_1: Teachers' and student's factors do not affect creative teaching and learning in fashion design.

4.4.3 Principals' View on tutors and Students' factor towards creative teaching and learning of fashion

The study sought from the principals their view on teachers and students factors which contribute to the attitude towards creative teaching and learning. According to one of the principals during the interview '*Teachers spend a lot of time in teaching especially the practical component of fashion design so if they are not motivated they may be reluctant to give out their best.*'

Another principal also indicated that;

'*Resourcefulness teachers during teaching and learning, both teachers and students' misconception about the fashion design programme as well as the school environment determine creativity among the teachers and students.*'

Another student factor given by one of the principals was students thinking that they may not get work to do after completion make them not to be serious with the fashion design course.

One other principal argued that

> *'Teachers ability to use outmoded tools in large class sizes with limited space, lack of creativity in the students, lack of motivation for the tutors, age old mentality that it is the students who are deficient academically that undertake vocational skills studies are factors that hinder creativity among teachers and students who teach and learn fashion design.'*

One other principal reported that

> *'Lack of teachers' interest in the subject that they are teaching, teaching practical lessons using poor and obsolete equipment with limited time, negative comments from teachers and friends of the students discouraged students to develop poor attitude towards the course. The principal perceived poor motivation of the teachers, the inability of government to provide the teachers with the needed modern equipment and negative comments from colleagues hinder creativity among the teachers. Similarly, students' poor perception of fashion design, poor teaching procedures adopted by the teachers during instruction and poor motivation from the teachers make the students not to put in maximum effort during their course of the study of the subject (fashion design) and therefore developing their creativity skills'.*

4.5. Pedagogical strategies in teaching and learning which promotes creativity in fashion design

The study's second objective purposed to identify the pedagogical strategies in teaching and learning which promotes creativity in fashion design. This objective of the study delved into teachers' pedagogical strategies in teaching which promote creativity learning in fashion design by students in the colleges of education in Ghana.

4.5.1 Teachers pedagogical strategies to promote creativity in fashion design

The study presents to the teachers of fashion design six statements related to pedagogical strategies to promote creativity among students they teach. The teachers were to use strongly agree (SA), neutral (N), agree (A), strongly disagree (SD) AND disagree (D) to show their levels of agreement to the statements. Table 4.9 presents a summary of the responses given by the teachers.

Table 4.9 Teachers' Pedagogical Strategies to Promote Creativity among their Students in Fashion Design

Statement		SA	A	N	D	SD
Students will have greater inspiration to connect creatively if resources and knowledge from the internet are outsourced.	F	11	6	0	1	0
	%	61.1	33.3	0	5.6	0
Students can develop their creativity in fashion design by using teaching methodologies including experimentation and learning through projects, where students are allowed to work independently on a project while still having access to their teachers for guidance.	F	6	9	1	1	1
	%	33.3	50	5.6	5.6	5.6
Developing creative thinking workshops that allow students to freely discuss and generate new ideas can help to foster innovative processing of information.	F	6	11	0	0	1
	%	33.3	61.1	0	0	5.6
Encouraging pupils to think convergently through practical exercises and problem-solving techniques boosts their creativity.	F	12	5	0	1	0
	%	66.7	27.8	0	5.6	
Providing emotional support to learners during classroom interactions does not foster an interest in creativity on their part.	F	2	6	3	6	1
	%	11.1	33.3	16.7	33.3	5.6
The utilization of demonstration techniques in practical fashion design classes fosters creativity.	F	5	12	0	1	0
	%	27.8	66.7	0	5.6	0

N=18

The results in Table 4.9 indicated that majority of the teachers agreed to all the statements except the statement “Giving the students emotional support through classroom interaction sections do not assist them to be interested in creativity”. For instance, 11 (61.1%) and 6 (33.3%) of the teachers strongly agreed and agreed respectively that outsourcing resources and information from the internet will give students more ideas to connect to creativity, whilst only 1 (5.6%) of the teachers strongly disagreed with none of the teachers disagreeing and being neutral. This means that the teachers’ method of teaching particularly looking for new and current information for the students, promote creativity among the students. This finding of the study supports the work of Salver and Perini (2010). They posited that educators who adopt varied teaching strategies have motivated well-behaved students which translate to higher achievements and hence leading to their creativity in fashion design.

Only 1 (5.6%) of the instructors disagreed and strongly disapproved, respectively, that pedagogical approaches like experiments and focus on projects inquiry, in which students are left alone to work on a project, do not aid students in developing their creative thinking in fashion design. One (5.6%) other teacher expressed no opinion. On the other hand, as majority of the teachers 9 (50%) agreed and 6(33.3%) strongly agreed with the statement. This indicated that where experiments and project-based methods are adopted in teaching where students are allowed to only make inquire from their teachers help the students to acquire creativity in fashion design. This study's result aligns with the findings from Nold (2017). According to Nold (2017), experiments help teachers and students become more creative.

Nold went on to say that experiments help students acquire skills like strong motivation, critical thinking, and creating relevant content that goes beyond theories. These skills enable teachers and students to make assumptions and come up with novel concepts. This according to Nold is constructs of creativity. Table 4.9's results also revealed that most teachers—12, or 66.7%—firmly agreed, and 5 (or 27.8%) agreed—that providing opportunities for brainstorming and imaginative information processing helps students come up with fresh ideas and enhances their creativity. This result of the study supports those of Qutoshi and Poudel (2014). They reported that student-centred instruction is an effective method of improving creative learning and teaching. According to them, student-centred instructional process engages students in active learning and more attention is given to students' mental cognitive strategies. With regard to promoting convergent thinking through hands-on activities and problem-solving skills assist students in creativity, only 1 (5.6%) of the teachers was in disagreement to the statement with as many as 5 (27.8%) and 12(66.7%) of the teachers agreeing and strongly agreeing with the statement and none being neutral. One approach to student-centered instruction is the use of practical exercises in the classroom. The study's findings corroborated those of Qutoshi and Poudel (2014), who suggested that fashion design education should support student-centered teaching methodologies since they foster students' creativity. Therefore, the goal of the teachers' use of convergent thinking in the classroom through practical exercises is to encourage students' creativity in fashion design. The statement was disputed by half of the teachers. "Giving the students emotional support through classroom interaction sections do not assist them to be interested in creativity" with 1 (5.6%) of the teachers being neutral. Here, it can be seen that only 2 (11.1%) strongly agreed and 6(33.3%) of the teachers agreed with this assertion. This finding suggests instead that students'

motivation in creativity is aided by providing them with emotional support during classroom interaction sections.

This outcome represents an additional student-centered approach to instruction that bolsters Kaput's (2018) research. Research has shown that students' impressions of their interactions with one another in the classroom have a significant impact on their development of learning expectations. When educators provide emotional support to their pupils, it fosters communication and facilitates the students' acquisition of knowledge from their lecturers. As many as 12 (66.7%) agreed and 5 (27.8%) strongly agreed with the statement regarding the teachers' frequent use of the demonstration method during fashion design practical lessons, which fosters creativity among the students. Only 1 (5.6%) of instructors disagreed with the assertion. This demonstrated how teachers' use of the demonstration technique in hands-on fashion design sessions encourages students' creativity. The demonstration technique is a useful tool for teaching students how to manage their talents and prepare for the workforce. It also helps students develop their behavior, creativity, and learning objectives. Teachers act as facilitators in this situation. Thus, Table 4.6's results showed that students' new ideas and creativity are fostered during fashion design by teachers' use of experimental method, materials project-based research, student-centered teaching method, hands-on activities, supporting students' emotions, and utilization of the demonstration method.

4.5.2 Students' views on pedagogical strategies to improve creativity in fashion design

The students' views on the pedagogical strategies adopted by their tutors were also investigated in line with the study's second objective purposed to identify the pedagogical strategies in teaching and learning which promotes creativity in fashion design. The students were given a range of questions on the pedagogical strategies and table 4.10 presents their responses.

Table 4.10: Students' views on pedagogical strategies to improve creativity in fashion design

Statement		SA	A	N	D	SD
The tutors use information and resources from the internet, which gives me more inspiration for making creative connections.	F	87	48	1	13	16
	%	52.7	29.1	0.61	7.9	9.7
Teachers support the development of creativity in fashion design by using educational strategies including experiments and project-based inquiry, in which I am given the freedom to work alone on a project while still being able to ask questions.	F	45	73	10	25	12
	%	27.3	44.2	6.1	15.2	7.3
The tutors design creative processing periods where I am free to jot down thoughts and express my originality.	F	47	90	0	19	9
	%	28.5	54.5	0	11.5	5.5
Through practical exercises, tutors encourage convergent thinking, and my creativity is aided by problem-solving techniques.	F	94	39	0	29	3
	%	57	23.6	0	17.6	1.8
The emotional support that tutors provide through classroom contact sections does not help my pursuit in creativity.	F	18	51	26	61	9
	%	10.9	30.9	15.8	37.0	5.5
My creativity is encouraged by the demonstration method that is frequently used in fashion design practical classes.	F	41	100	0	20	4
	%	24.8	60.6	0	12.1	2.4

N=165

According to Table 4.10, the majority of students—87, or 52.7%—strongly agreed and 48, or 29.1%—agreed that their tutor uses online resources and information to give them more ideas for connecting creativity. In contrast, 13 (7.9%) and 16(97%), respectively, strongly and refuted the claims, while 1 student, or 0.61%, was neutral. The results suggest that using the internet to research topics inspires kids' creativity. The table 4.10 further shows that the majority of students 45(27.3%) strongly agreed and 73(44.2%) agreed that the tutors use pedagogical approaches such as experiments and project-based inquiries where students are left alone to conduct the project, but the tutors are available to provide support where necessary. However, 10(6.1%) were neutral while 25(15.2%) disagreed and 12(7.3%) strongly disagreed that the tutors use pedagogical approaches that promotes their creativity. The findings imply that most students believe that using experiments and project-based pedagogical approaches promotes their creativity.

Table 4.10 reveals that a majority of students, 90 (54.5%) and 47 (28.5%), strongly agreed that instructors do design sessions that encourage innovative processing of knowledge, allowing students to generate fresh thoughts and ideas for new projects. On the other hand, 19 students (11.5%) disagreed with the statement, and 9 students (5.5%) disagreed with it vehemently. From these results, it can be concluded that improving students' capacity to brainstorm and generate original ideas requires the use of sessions that encourage imaginative processing.

Similarly, the table 4.10 that the majority of students strongly believed 94(57%) and believed 39(23.6%) that the tutors promote convergent thinking through hands-on activities and problem-solving skills assist my creativity whilst 29(17.6%) felt differently in this regard by disagreeing while 3(1.8%) strongly disagreed too. These

findings imply that the use of convergent thinking using hands-on activities and problem-solving skills are critical for students' creativity. The next aspect examined in the table was the tutors' provision of emotional support through classroom interactions sections do not assist my interest in creativity where the most of the students 51(30.9%) agreed and 18(10.9%) sternly agreed with the opinion. However, 26(15.8%) were neutral and most 61(37%) disagreed while 9(5.5%) strongly disagreed with the claim. It can therefore, be deduced that the provision of emotional support works for some students but not others.

Lastly, the table 4.10 shows that the majority of students 100(60.6%) agreed and 41(24.8%) strongly agreed that demonstration method often used during fashion design practical lessons do promote their creativity though 20(12.1%) disagreed and 4(2.4%) strongly refuted this assertion. It can therefore, be taken to mean that using demonstration during practical work is essential for enhancing the student's creativity likely due to the students' ability to ask questions and observe what the tutor is doing as opposed to listening to oral explanations.

A chi-square analysis test was done to test the study's second null hypothesis which was

H_{02}: The pedagogical strategies used by colleges of education teachers do not influence creativity in fashion design.

The chi-square analysis results are as presented in table 4.11.

Table 4.11: Chi Square Analysis: Pedagogical strategies and students' creative ability

Statement			Students' Creative Ability			X^2	P Value
			A	N	D		
The internet is a source of resources and knowledge that the tutors use, which gives me further creative connection ideas.	A	F	82	16	54	12.379	0.015
		%	49.7	9.7	32.73		
	N	F	4	0	0		
		%	2.42	0	0		
	D	F	8	1	0		
		%	4.85	0.61	0		
Teachers support the development of creativity in fashion design by using educational strategies including experiments and project-based inquiry, in which I am given the freedom to work alone on a project while still being able to ask questions.	A	F	76	14	44	19.297	0.004
		%	46.06	8.48	26.67		
	N	F	4	0	8		
		%	2.42	0	4.85		
	D	F	14	2	2		
		%	8.48	1.21	1.21		
The tutors design creative processing periods where I am free to jot down thoughts and express my originality.	A	F	86	16	53	10.829	0.035
		%	52.12	9.70	32.12		
	N	F	0	0	1		
		%	0	0	0.61		
	D	F	8	1	0		
		%	4.85	0.61	0		
Through practical exercises, tutors encourage convergent thinking, and my creativity is aided by problem-solving techniques.	A	F	85	16	54	11.664	0.023
		%	51.25	9.70	32.73		
	N	F	1	0	0		
		%	0.61	0	0		
	D	F	8	0	0		
		%	4.85	0	0		
The emotional support that tutors provide through classroom contact sections does not help my interest in creativity.	A	F	46	6	17	10.823	0.036
		%	27.88	3.64	10.3		
	N	F	16	6	13		
		%	9.7	3.64	7.88		
	D	F	32	5	24		
		%	19.39	3.03	14.55		
My creativity is encouraged by the demonstration method that is frequently used in fashion design practical classes.	A	F	85	16	54	13.651	0.022
		%	51.52	9.60	32.73		
	N	F	1	0	0		
		%	0.61	0	0		
	D	F	8	1	0		
		%	4.85	0.61	0		

N=165

As table 4.11 shows that majority of the students who indicated that their tutors outsource resources and information from the internet were also those who portrayed creative ability 82(49.7%) whereas most of those who disagreed with the claim were also those who did not indicate students' creative ability. The findings suggest that there is an association between tutors' outsourcing strategies and students' creative ability. This is supported by the statistically significant chi square results (X^2= 12.379, p= 0.015<0.05) which imply that outsourcing of information and resources form the internet is likely to increase the student's creative ability as opposed to limited outsourcing. The table 4.11 further shows that the use of experiments and project-based inquiry has a statistically significant association with students' creative ability (X^2= 19,297, p= 0.004<0.05). From these finding it can be deduced that the use of experiments and project-based inquiry is likely to influence the students' creative ability. this is supported by the cross-tab findings which show that most of the students 76(46.06%) of the students who indicated that their tutors use experiments and project-based inquiry pedagogical strategies were those who portrayed positive aspects of students' creative ability as opposed to the majority of those who disagreed with the claim who fell into the category of students with limited creative ability 14(8.48%). Overall, the findings imply that experiments and inquiry-based projects are likely to have a positive impact on the students' creative ability. These findings support the claims made by Nold (2017) who argue that experiments are important to develop creativity of teachers and students. Essentially, experiments comprise various elements such as student activities critical thinking, strong motivation and developing of meaningful content While these are just elements of experiments they go beyond theories which allow students and teachers to hypothesize and come with new ideas, hence, in actuality, they are constructs of creativity. Implementation of experiments

into learning and teaching comprises basic constructs which give rise to creativity in fashion design.

Further, it can also be seen that majority of the respondents who disagreed 8(4.85%) that tutors come up with sessions to promote imaginative processing of information were those who also failed to portray creativity aspects as compared to the majority 86(52.12%) who agreed that there are session to promote imaginative processing used by teachers. This suggest that the tutors' use of imaginative processing session is likely associated with the students' creative abilities. The chi-square results were statistically significant at (X^2=10.829, p=0.035<0.05) which implies that the tutors' use of imaginative sessions is likely to increase the students' likelihood of developing creative abilities. As Qutoshi and Poudel (2014) argued student-centered instruction is a method of teaching where students are the fundamental of learning as their educators serve as their facilitator. The instructional process engages students in active learning and more attention is given to students metal cognitive strategies Fashion design teachers are urged to use student-centered instructional practices since they help students become more creative (Qutoshi & Poudel, 2014). Table 4.11 demonstrates that most students who believed that their tutors encourage convergent thinking—85, or 51.25 percent of the students—were creatively inclined, while the majority of students who disagreed—8, or 4.85% of the students—did not exhibit creatively inclined traits. The substantial chi-square outcomes (X2=11.664, p=0.023<0.05) corroborate these findings, suggesting that the application of convergent thinking processes is related to students' creative abilities.

They suggest that the use of convergent thinking such as hands-on activities and problem solving does have a significant influence on the student' creative ability. In

regards to the provision of emotional support, most of the students 46(27.88%) who agreed that it assist their creativity were those who did not portray creative ability whereas the majority of those who disagreed with the assertion 32(19.39%) were those who demonstrated creative abilities. Thee suggest that emotional support for the students is likely to influence the students' creative ability as supported by the chi-square findings where (X^2=10.823 p=0.036<0.05) implying that tutors who support their students emotionally are likely to promote their creativity. A positive attitude toward students' performance, as Kuofi (2015) noted, is one of the most significant aspects that influence academic accomplishment, as opposed to a negative attitude that imposes penalty for subpar performance. Students continue to work successfully when their trainers recognize and reward their efforts. However, punishing students for their low performance shows a bad attitude and encourages them to keep up their poor performance.

Lastly, the table 4.11 shows demonstration method as a pedagogical strategy had a significant association with the students' creative ability where (X^2=13.651, p=0.022<0.05). These imply that demonstration approaches using practical lessons for fashion design has an association with the students' creative abilities. The relationship is associated with the cross-tab findings where most 85(51.52%) of the students who claimed that demonstration method is used were those who agreed generally with aspects of students creative abilities whereas the majority 8(4.85%) of those who did not agree with the assertions also disagreed with aspects of students' creative ability. The findings suggest that the students whose tutor uses demonstration methods were likely to demonstrate creative abilities as compared to those who were not exposed to demonstration method.

In general, all the aspects of pedagogical strategies outsource information and resources (X^2= 12.379, p= 0.015<0.05), experiments and project—based inquiry (X^2= 19,297, p= 0.004<0.05), imaginative processing sessions (X^2=10.829, p=0.035<0.05), convergent thinking (X^2=11.664, p=0.023<0.05), emotional support (X^2=10.823 p=0.036<0.05), demonstration where (X^2=13.651, p=0.022<0.05) were statistically significant. As a result, the alternative hypothesis was accepted and the study's second null hypothesis, which claimed that there was no statistically significant correlation between the pedagogical techniques employed by college education instructors to foster creativity in fashion design, was thus rejected.

4.5.3 Principals' perspectives on pedagogical techniques to boost fashion design creativity

The heads of each of the sampled institutions were requested to provide tactics throughout the interview process in order to foster a favorable attitude among instructors and students regarding the teaching and learning of creativity in fashion design.

One of the principals suggested that:

> '*Both best teachers and students in fashion design should be given scholarship for further studies to build their personal and professional capacities. In addition, organizing institutionalizes workshops, training and talk shows are critical for students' creativity through teaching and learning.'*

Another principal also suggested that:

> *"Up to date (modern) machines should be procured to arouse both tutors and students interest in the fashion design. Also, continuous training for the staff should be encouraged as well as create fashion design laboratories in the colleges of education to enhance more hands-on activities training for teaching and learning fashion design". The principal also recommended giving more incentives to the teachers to motivate them.*

Third principal interviewed suggested that:

> "*Class sizes should be reduced, tutors should be motive through the use of incentives and industrial attachment should be encouraged for the students' as well as students with adequate passes in art related subjects should be admitted to pursue fashion design programmes*."

The fourth principal suggestions in the interview were the same as the first principal:

> *Best tutors and students should be given scholarship for further studies to build their professional capacity and organization of institutionalized workshops, training and talk shows. The fifth principal indicated that the teachers should be motivated to plan a lot of field trips to fashion design shops for the students to see some of the creative fashion design dresses. Similarly, the Ministry of Education should provide adequate funds for the purchase of equipment to enhance the skills training in fashion design. The principal also suggested that the tutors should be given regular in-service training and workshops in pedagogical skills that will enhance their teaching and learning to be interesting. The tutors should emphasize practical learning through the use of project work.*

4.6 Curriculum content relevance as well as innovative learning and teaching in fashion design

The ultimate objective of the study was to evaluate the curriculum's applicability in fostering innovative fashion design teaching and learning. This goal investigated the pertinent curriculum material from the students, encouraging their creative learning of fashion design.

4.6.1 Students' view on relevant curriculum on creativity in Fashion Design

Nine assertions about curriculum topics that support innovative learning in fashion design were given to the students, and they were asked to indicate how much they agreed with the claims. Table 4.12 displays the different degrees of agreement that the students provided using agree (A), strongly agree (SA),neutral (N), disagree (D), and severely disagree (SD).

Table 4.12 Students' Responses on Relevant Curriculum Content which Promote Creative Learning in Fashion Design

Statement	N=165	SA	A	N	D	SD
The subjects taught in the curriculum are current.	F	32	58	21	31	23
	%	19.4	35.2	12.7	18.8	13.9
The curriculum encourages experiments, observations, and fieldwork to help pupils become self-sufficient.	F	36	56	24	37	12
	%	21.8	33.9	14.5	22.2	7.3
The curriculum is important since it has given me skills that are applicable to the fashion and design industry today.	F	43	49	31	30	12
	%	26.1	29.7	18.8	18.2	7.3
Because the curriculum is learner-centered, I am more interested in the subject matter.	F	28	53	24	36	24
	%	17	32.4	14.5	21.8	14.5
The curriculum focuses on process and skill learning that will equip students to tackle problems both now and in the future.	F	37	52	35	34	7
	%	22.4	31.5	21.2	20.6	4.2
The curriculum addresses the social and economic demands of today.	F	47	37	34	35	12
	%	28.5	22.4	20.6	21.2	7.3

N=165

According to Table 4.12's results, the majority of students felt that the issues covered in the school's curriculum are current: 32 (19.4%) strongly agreed, 58 (35.2%) agreed, 21 (12.7%) were indifferent, 31 (18.8%) disagreed, and 23 (13.9%) severely disagreed. These results only indicate that the majority of students believe that the course material covers topics that are current with respect to the fashion business. The

study's conclusions corroborate the claims made by, Hightower, *et al.* (2011) that curriculum content has a significant impact on learning and student achievement.

Furthermore, table 4.12 demonstrates that the majority of students—56, or 33.9%—agreed and 36, or 21.8%—strongly agreed that the curriculum encourages students to be self-sufficient because it includes experiments, observations, and fieldwork. Nonetheless, 12(7.3%) strongly disagreed with the notion, 37(22.2%) disagreed, and 24(14.5%) had no opinion about it. These results typically imply that the curriculum's contents promote pupils' independence, which fosters creativity. The curriculum's content might be linked to instances in which students are able to draw unexpected connections when creating, stitching, and altering what their tutors teach them. In a similar vein, Darvas and Palmer's (2004) observations about practical education that is pertinent to social demands are supported by the implementation of the project-based learning approach.

Additionally, table 4.12 demonstrates that the majority of students—43, or 26.1%—strongly agreed and 49, or 29.7%—agreed that the curriculum content is important for giving them the abilities necessary to succeed in the modern fashion market. On the other hand, 12(7.3%), 30(18.2%), and 31(18.8%) strongly disagreed. These results suggest that most students think the curriculum plays a big role in giving them the skills they need to succeed in the fashion and design industry of today.

The majority of students, as indicated in table 4.12, 53 (32.4%) and 28 (17%) strongly agreed that their institution's curriculum is learner-centered, which sparks students' interest in the subject matter. However, 36 people (21.6%) disagreed with the claim, while 24 people (14.5%) objected vehemently and were neutral toward the statement.

All things considered, the results show that the majority of students believe the curriculum plays a crucial role in sparking their interest in the material.

It was also discovered that most respondents—37, or 22.4%—strongly agreed and 52, or 31.5%—agreed that the curriculum is characterized by procedures and the learning of abilities that enable students to solve difficulties both now and in the future. On the other hand, 35(21.2%) disagreed with the statement, 34(20.6%) disagreed, and 7(4.2%) severely disagreed. These results suggest that the curriculum content encourages the development of skills that let students come up with original solutions to problems they face today and in the future.

Finally, the majority of students—47, or 28.5%—strongly agreed and 37, or 22.4%—agreed that the curriculum connects to the contemporary social and economic demands of the fashion and design sector, while 35, or 20.6%, expressed no opinion. Nonetheless, 12(7.3%) and 35(21.2%) strongly disagreed and disagree respectively with the viewpoint. In general, one could claim that the curriculum's material is pertinent to the social and economic climate of today.

The Ho3: There isn't a statistically meaningful connection between learning fashion design and creative instruction. A chi-square evaluation was done to evaluate the hypothesis, and table 4.13 shows the outcomes.

Table 4.13: Chi-Square: Students creative ability and curriculum content

Statement			Students' Creative Ability			X^2	P Value
			A	N	D		
The subjects taught in the curriculum are current.	A	F	67	22	1	13.378	0.043
		%	40.61	13.33	0.61		
	N	F	13	7	1		
		%	7.88	4.24	0.61		
	D	F	0	15	39		
		%	0	9.09	23.64		
The curriculum encourages experiments, observations, and fieldwork to help pupils become self-sufficient.	A	F	66	26	0	14.266	0.026
		%	40	9.70	0		
	N	F	7	16	0		
		%	4.24	9.70	0		
	D	F	2	11	37		
		%	1.21	6.67	22.42		
The curriculum is important since it has given me skills that are applicable to the fashion and design industry today.	A	F	65	28	0	14.529	0.002
		%	39.39	16.97	0		
	N	F	22	7	1		
		%	13.33	4.24	0.61		
	D	F	1	9	32		
		%	0.61	5.45	19.39		
Because the curriculum is learner-centered, I am more interested in the subject matter.	A	F	55	25	0	13.219	0.003
		%	33.33	15.15	0		
	N	F	19	5	1		
		%	11.52	3.03	0.06		
	D	F	1	14	45		
		%	0.61	8.48	27.27		
The curriculum focuses on process and skill learning that will equip students to tackle problems both now and in the future.	A	F	64	24	1	16.921	0.021
		%	38.79	14.55	0.61		
	N	F	25	10	1		
		%	15.15	6.06	0.61		
	D	F	1	10	29		
		%	0.61	6.06	17.58		
The curriculum addresses the social and economic demands of today.	A	F	63	21	1	11.732	0.041
		%	38.18	12.73	0.61		
	N	F	24	9	0		
		%	14.55	5.45	0		
	D	F	1	14	32		
		%	0.61	8.48	19.39		

N=165

Table 4.13 indicates that the majority of students who concurred that the curriculum information was current—67, or 40.61 percent—were those who shown creative ability,

while the majority of students who disagreed—39, or 23.64 percent—were those who did not demonstrate such ability. The results indicate that students' creative aptitude is positively correlated with current curricular content, a relationship that is backed by substantial inferential statistics ($X2=13.378$, $p=0.043<0.05$). This suggests that current curricular material will probably have an impact on pupils' capacity for creativity.

Furthermore, table 4.13 demonstrates that the majority of students who agreed (66 out of 40) that the curriculum encourages students to be self-sufficient were also in agreement with the various components of students' creativity. Conversely, most of those who disapproved of 37 (22.42%) also did not exhibit any good traits of creativity. The results indicate that students' creative ability is linked to curricular content that encourages experimentation, fieldwork, and observations. This is corroborated by the statistically significant chi-square outcome ($X2=14.266$, $p=0.026<0.05$).

Furthermore, it is evident that most students—65, or 39.39 percent—who agreed that the curriculum's content gives them skills relevant to the modern fashion market were also those who said they possessed creative ability, whereas the majority of students—32, or 19.39 percent—who disagreed with the assertion were probably not among those who demonstrated creative ability. These results imply that there is a relationship between students' creative abilities and the curriculum content that gives them skills relevant to the fashion industry today. The correlation was statistically meaningful at p value ($X2=14.529$, $p=0.002<0.05$), suggesting that students are more likely to be creative when their curriculum gives them access to contemporary information and abilities.

Table 4.13 demonstrates that the majority of students—55, or 33.33 percent—who concurred that the curriculum is learner-centered and piques their interest in the subject matter were those who demonstrated creative ability, while the majority of students—45, or 27.27 percent—who disagreed with the assertion were those who did not do so. These results were of statistical importance ($X2=13.219$, $p=0.003<0.05$) and suggest that, in comparison to students who do not find the topic fascinating, those who view the curriculum as engaging and student-centered are more likely to demonstrate creative ability. Table 4.13 demonstrates that students who demonstrated good elements of their creative capacity made up the majority of those 64 (38.79%) who believed that the curriculum is characterized by method and acquisition of skills which allow the students to solve present and potential difficulties. On the other hand, 29 people (17.58%) who disputed with the view did so primarily because they thought that some components of creative capacity were lacking. A statistically significant correlation between curricular relevance and students' creative aptitude was found ($X2=16.921$, $p=0.021<0.05$).

Finally, the survey discovered that most students, 63 (38.18%), concurred that the curriculum related to the contemporary social and economic demands, whereas the majority of students, 32 (19.39%), disagreed and did not demonstrate any creative abilities. These results suggest that students who indicated they had creative capacity were those whose curriculum related to contemporary challenges, and this relationship was highly significant ($X2=11.732$, $p=0.041<0.05$). In conclusion, the program is current ($X2=13.378$, $p=0.043<0.05$), encourages self-sufficiency ($X2=14.266$, $p=0.026<0.05$), provides students with pertinent skills ($X2=14.529$, $p=0.002<0.05$), is engaging and learner-centered ($X2=13.219$, $p=0.003<0.05$), promotes the acquisition of

skills (X2=16.921, p=0.021<0.05), and is relevant to contemporary social and economic issues (X2=11.732, p=0.041<0.05). Based on the findings, the null hypothesis, Ho_3: There is no statistically significant relationship between creative teaching and the learning of fashion design hereby rejected.

4.6.2 Principals' Views on Relevant Curriculum Content on Creativity in Fashion Design

During the interview, the principals were asked "How is creativity in fashion design viewed by college community in general? According to one of the principals, people sometimes think that those into fashion design are poor academically and it is a subject for girls or women so the gentlemen do not want to offer it as a course. In addition, fashion design is expensive as it involves buying of materials and equipment. Another principal also responded that fashion design as a discipline requires special skills and continuous effort and the individual ability to be more innovative through having information on up-to date and trends in fashion design. The third principal in response to the question asked, stated that with the new approach to the teaching and learning of fashion design, creativity in vocational skills is held in high esteem for the simple fact that people have realized the importance of creating in designing, the absence of which one's products will be unmarketable. The response from the fourth principal is the same as the first principal. However, the fifth principal indicated that the fashion design is very expensive to be undertaken during teaching and learning.

Also, the practical work takes too much of the students' time and also creativity in fashion design is difficult to accomplish among the students pursuing the programme. From the responses of the principal, the materials required to effectively implement the fashion design curriculum is expensive and students find it difficult to attain the

creativity required in the programme since creativity is held in high esteem by the customers who patronized the fashion design products. The inability to use computer aided design programmes has also make it difficult for the students to achieve creativity easily in pursuing fashion design in vocational skills training in the colleges of education in Ghana.

4.7 Challenges facing teachers and students in teaching and learning creativity in apparel construction

The study's fourth goal was to determine the difficulties instructors and students encounter while attempting to teach and learn about creativity in clothing construction. The purpose of this study was to gather information from administrators, instructors, and students on the different difficulties that face fashion design education programs when it comes to teaching and learning creativity.

4.7.1 The Difficulties Teachers Face in Instructing Creativity in Fashion Design

The study examined the difficulties faced by educators while attempting to teach fashion design innovation in education colleges. Six statements pertaining to obstacles in teaching fashion design creativity were distributed to the teachers. They were asked to rate their responses on five Likert point scales: strongly agree (SA), agree (A), neutral (N), disagree (D), and severely disagree (SD).

Table 4.14 Teachers Challenges of Teaching Creativity in Fashion Design

Statement		SA	A	N	D	SD
Large class sizes and time constraints don't have a detrimental effect on teaching creativity and innovation.	F	2	4	3	7	2
	%	11.1	22.2	16.7	38.9	11.1
Timely curriculum coverage has no bearing on innovative teaching methods or creative teaching.	F	3	8	2	4	1
	%	16.7	44.4	11.1	22.2	5.6
Resources are not a barrier to innovative teaching	F	1	5	5	5	2
	%	5.6	27.8	27.8	27.8	11.1
Acquiring school goals and expectations has no bearing on the caliber of instruction or the manner in which it is delivered.	F	2	7	2	6	1
	%	11.1	38.9	11.1	33.3	5..6
Insufficient staffing levels and a heavy workload do not impact the quality of instruction or its transformation.	F	2	3	4	6	3
	%	11.1	16.7	22.2	33.3	16.7
insufficient in-service training for fashion design creative instructors.	F	2	3	4	6	3
	%	11.1	16.7	22.2	33.3	16.7

N=18

Table 4.14 indicates that the majority of educators Time constraints and big class sizes do not negatively effect teaching and learning creativity, as only a minority of respondents (7(38.9%) disagreed and 2(11.1%) strongly disagreed). While 3 (16.7%) had a neutral attitude, 2 (11.1%) and 4 (22.2%) highly agreed and agreed that time and large courses do not negatively effect creativity. These results suggest that teaching and learning creativity are impacted by time and big class sizes. According to Niemi (2002), students must be given the chance to practice analytical abilities

through their active participation in the lessons if they are to develop creative skills. In areas with huge class sizes, this is not feasible.

According to table 4.14, the majority of respondents—3 (16.7%) and 8 (44.4%), respectively—strongly agreed and agreed that the curriculum's time coverage had no bearing on innovative teaching and learning. On the other hand, 1 (5.6%) completely disagreed with the claim, 4 (22.2%) disagreed, and 2 (11.1%) had no opinion. While some educators believed that completing the material on time had an effect on teaching creativity and creative teaching, the statistics indicate that meeting the curriculum deadlines has no influence on teaching creativity or creative teaching. Day, Gu and Sammons (2016) also emphasized the significance of giving teachers innovative teaching resources because this is directly related to the imagination of learners, which influences the formation of concepts and motivates students to succeed.

Table 4.14 shows that the vast majority of teachers 2(11.1%) and 7(38.9%) firmly concurred and agreed, respectively, that meeting school goals and standards had no bearing on the caliber of instruction and learning style, whereas 6(33.3%), 1(5.6%), and 2(11/1%) were indifferent to the notion. These results suggest that both the style and quality of instruction are impacted by achieving the goals of the institutions. Table 4.14 reveals that the majority of instructors disagreed—3 (16.7%) strongly disagreed and 6 (33.3%) disagreed—that a high workload and insufficient personnel do not affect the quality of instruction and its transformation. Four (22.2%) were neutral, two (11.1%) strongly agreed, and three (16.7%) agreed.

These results suggest that the majority of teachers believed that a high workload and insufficient staff negatively impact teaching quality. Finally, table 4.14 reveals that, on average, 6(33.3%) and 3(16.7%) of the teachers agreed and strongly agreed, respectively, that in-service training is inadequate for teaching creativity in fashion design, while 4(22.2%) of the teachers were neutral, 6(33.3%) refuted, and 3(16.7%) strongly refuted this assertion. The results suggest that in-service training often fosters creativity in fashion design. Garibay (2015) reaffirmed that learning attitudes, a lack of drive, and a lack of training resources are obstacles that encourage the use of creativity in both teaching and learning for College of Education students.

4.7.2 Students' Challenges of Learning Creativity in Fashion Design

The survey asked students about the difficulties they had when developing their creative thinking in fashion design. Ten statements were given to the students, who were asked to indicate how much they agreed with each one using a five-point Likert scale: strongly concurs (SA), Neutral (N), Agree (D), and Highly Disagree (SD). Table 4.15 displays the students' challenges' outcomes.

Table 4.15 Students' Challenges of Learning Creativity in Fashion Design

Statement		SA	A	N	D	SD
The lack of educational resources hasn't impacted my ability to learn.	F	31	28	21	23	62
	%	18.8	17.0	12.7	13.9	37.6
My learning is unaffected by my family's and my teachers' lack of motivation.	F	34	40	14	39	38
	%	20.6	24.2	8.5	23.6	23.0
My creative achievement is unaffected by my teacher's lack of Learning andTeaching Materials (TLMs).	F	25	30	30	38	42
	%	15.2	18.2	18.2	23.0	25.5
The lack of tutors has no impact on students' ability to acquire skills in the classroom.	F	42	36	30	33	24
	%	25.5	21.8	18.2	20	14.5
My creative learning about fashion design is unaffected by cultural and social vices.	F	40	48	30	34	13
	%	24.2	29.1	18.2	20.6	7.9
There is not enough time to do practical tasks.	F	53	48	24	14	26
	%	32.1	29.1	14.5	8.5	15.8
My hands-on lesson has not been impacted by teachers' lack of enthusiasm in imparting creativity in fashion design.	F	33	39	28	40	25
	%	20	23.6	17	24.2	15.2
pressure to be ready for the final exam of the semester	F	44	56	18	20	27
	%	26.7	33.9	10.9	12.1	16.4
My artistic development in the fashion industry is unaffected by the absence of a simulating setting.	F	26	52	26	31	30
	%	15.8	31.5	15.8	18.8	18.2
The college administration's lack of managerial assistance has hampered my ability to learn fashion design creatively.	F	47	57	28	17	16
	%	28.5	34.5	17	10.3	9.7

N=165

Table 4.15 demonstrates that the majority of students—23, or 13.9%—disputed and 62, or 37.6%—strongly refuted the idea that their learning has not been impacted by a lack of training facilities, while 21 (or 12.7%) expressed a neutral attitude. The results suggest that a lack of training facilities has an impact on students' learning based on their perceptions, which is consistent with the assertions made by Garibay

(2015), who stated that among the obstacles impeding creative teaching and learning for learners in education colleges are students' ability and learning beliefs as well as a lack of training facilities.

Table 4.15 further demonstrates the diversity of students' opinions regarding the statement that "my family's and my teachers' lack of motivation does not influence my learning." Of the students, 34 (20.6%) strongly agreed, 40 (24.2%) agreed, 14 (8.5%) were neutral, 39 (23.6%) disagreed, and 38 (23%) strongly disagreed. The results imply that parental and instructional motivation is critical to students' development. According to Garibay (2015), among the issues preventing students in education colleges from engaging in creative teaching and learning include their lack of desire, belief in their own abilities, and their own learning styles. Furthermore, it is evident that the majority of students—38, or 23 percent—and 42, or 25.5%—strongly disagreed and disagreed, respectively, that their teacher's lack of sufficient Learning and Teaching Materials (TLMs) has no bearing on their ability to be creative. Of the pupils, thirty (18.2%) were neutral, while twenty-five (15.2%) and thirty (18.2%) were in full agreement with the statement. The results suggest that inadequate instructional materials have an impact on students' creative output.

Additionally, while 30 (18.2%) were neutral, 33 (20%) and 24 (14.5%) disagreed and strongly disagreed, respectively, that the lack of tutors does not influence students' ability to acquire skills in the classroom, 36 (21.8%) and 42 (25.5%) strongly agreed with this statement. The results suggest that while some students believe that having too few tutors hinders their ability to learn in the classroom, others believe that having too few tutors has a positive impact. While 34 students (20.6%) disagreed and 13 students (7.9%) significantly disagreed with the statement, the majority of students

(40, 24.2%) and 48, 29.1%) strongly agreed and agreed, respectively, that their inventive learning is not influenced by societal and culture vices about fashion design. These results imply that societal and cultural vices were typically seen by the students as having little influence on their creativity when studying about fashion design. According to Garibay (2015), teaching and learning about creativity require a simulation institutional setting.

The findings demonstrated how students' learning of originality in fashion design is impacted by the absence of a simulation environment. To cultivate their creative abilities, students require a feeling of self and a welcoming, secure learning environment. 53 (32.1%) and 48 (29.5%) of the students who firmly concurred and agreed with the statement, "There is inadequate time for practical work," respectively, highly supported it, while 24 (14.5%) were neutral, 14 (8.5%) disagreed, and 26 (15.8%) severely disagreed. These results suggest that students do not have enough time for practical work, which could negatively impact their ability to test their inventiveness and develop the skill later on. According to Niemi (2002), students who actively participate in their education have the chance to be creative while they hone their critical-thinking and analytical abilities. When there are plenty of training facilities and enough time for hands-on instruction, this can be accomplished.

This is impossible in situations with inadequate training facilities and time for hands-on instruction. The percentages that strongly agreed (33, 20%), agreed (39, 23.6%), neutral (28, 17%). 40(24.2%), and 25(15.2%) of the students said that their practical lesson was unaffected by teachers' lack of enthusiasm in imparting originality in fashion design. These results imply that some students believed their practical teachings were impacted by their lecturers' disinterest in encouraging creativity. Day

and Sammons' (2004) research demonstrated a substantial relationship between teachers' creativity and students' creativity as well as educational attainment. Teachers' creativity also had an impact on students' conceptual development and their capacity to regulate behavior both within and outside of institutions. Therefore, pupils' creativity may suffer if their teachers don't show that they are interested in teaching it.

Additionally, most students concurred the statement that they feel pressure to study for the end-of-semester exam is strongly agreed with by 44 (26.7%) and 56 (33.9%) of respondents, respectively, while 18 (10.9%) expressed neutrality, 20 (12.1%) disagreed, and 27 (16.4%) severely disagreed. In this way, it may be claimed that while the majority of students experience pressure when studying for final examinations, others do not. Most students—47, or 28.5%—strongly agreed, and 57, or 34.5%—agreed—that their creative development in fashion design has been hampered by the college administration's lack of administrative support. On the other hand, 28(17%) expressed neutrality toward the statement, while 17(10.3%) and 16(9.7%) disagreed and disagreed vehemently. According to the findings, the majority of students said that in order to improve their creative development in fashion design, they needed greater administrative support.

4.7.3 Principals' Challenges of Teaching and Learning Creativity

One of the principal stated that

> *'There is the challenge of using outmoded equipment and machines for fashion design. The use of these equipment and machines are stressful and time consuming for both the teachers and students during the lessons.*'

Another principal indicated that

> *'Most of the machines in the college of education are outmoded. This he indicated hinder creativity, work efficiency and effectiveness…it does not give perfect execution of expected design and outlines as well as does not support modern fashion design*.'

From the third principal, the challenges of fashion design in the College of Education were

> *Frequent breakdown of outmoded equipment, time consuming, thus slowing down teaching and learning and finishing of final products are poor. There is also the challenge of adoption of workshop safety mechanisms which leads to workshop accidents leading to injury and sometimes deformities.'*

One other principal asserted that

> *The use of outmoded sewing machine for fashion design is stressful and time consuming as compared with the use of electric sewing machine. The fifth principal enumerated the following challenges. The lesson is slow and makes tutors waste lot of time which often lead to boredom in class. Both tutors and students may not be able to get specific design they wanted. Innovations also become difficult making students to develop the desired creativity they needed. The challenges enumerated by the principals are similar to those of the tutors and students in the colleges of education.*

4.8 Gender influence on teaching and learning creativity in fashion design

This research objective was meant to find out if gender has influence on teaching and learning creativity in fashion design. A chi-square analysis was conducted on the student's gender and their responses on creative ability. Table 4.14 presents the results obtained.

Table 4.16 Gender Influence on Creativity Teaching in Fashion.

Statement			**Students' Creative Ability**			**X^2**	**P Value**
			A	**N**	**D**		
SEX	Male	F	73	22	1	.690	0.708
		%	44.24	14.55	0.61		
	Female	F	46	20	1		
		%	27.88	12.12	0.61		

N=165

As table 4.16 shows, the majority of the male students 73(44.24%) generally agreed with aspects of students creativity implying that they were had creative ability. similarly, the majority of the female students 46(27.88%) were also those who portrayed creative ability. These findings imply that there is no relationship between gender and students' creative ability. This is supported by the chi-square results (X^2=0.690, *p*=0.708) which were not statistically significant. Therefore, it can be argued that gender does not have an influence on the students' creative ability. These results are contrary to those of Hoff (2005), Matud, Rodrignez and Grande (2007) who asserted that gender differences in identification on creative performance do exist. They found that females portray a higher acceptance that fashion design is for ladies and there should be gender equity among tutors of fashion design agrees with those of Baer and Kaufman (2008) who reported that the female gender has the ability

to get higher scores as compared to their male counterparts when it comes to test scores in fashion design. These results are also contradictory with those of Kim (2007) who indicated that gender-bias in fashion design in terms of abilities and assessment risks are eliminated by test.

So, in line with these findings (X^2=0.690, p=0.708), the study hereby accepts the null hypothesis **H_{04}:** Student's gender does not influence creativity achievement in fashion design. It reiterates that students' gender has no influence on creativity achievement in fashion design and the alternative hypothesis accepted.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter seeks to provide an overview of the results based on the study's research objectives and offers recommendations and suggestions for potential courses of action and additional research. As a result, it is divided into three sections: summary of the findings, conclusions of the study and recommendations.

5.2 Summary of the Study

This study looked into the impact of tutors' practical teaching methods in vocational training colleges of education on students' creative accomplishments in fashion design in Ghana. The research was directed by the subsequent five (5) objectives:

vi. To establish (a) the teachers' and (b) students' factors that promote creative teaching and learning in fashion design.

vii. To determine the pedagogical strategies that promote creativity in fashion design.

viii. To assess the relevance of curriculum content in terms of promoting creative learning in fashion design.

ix. To identify the gender influences on creative achievement among students in fashion design.

x. To investigate challenges facing teachers and students in the achievement of creativity in apparel construction.

Two theories were used in the study: Cognitive Theory (Fryer, 2012; Ja Puccio et al. 2006) and Model Flow Theory (Csikszentmihalyi, 1996). Three variables—

dependent, intervening, and independent variables—were the focus of the investigation. The section that follows provides a summary of the key conclusions drawn from the study's aims.

5.2.1 Summary of the Main Findings

The section provides a summary of the major findings relating to technological teaching and learning strategies of vocational skills tutors and students' creative skills achievement in fashion design in Ghana colleges of education.

The first objective of the study was to establish teacher and student factors that promote creative teaching and learning in fashion design. The findings revealed that teacher factors such as focusing on students' interest and adopting student-centred approach, posting students, posing a question and allowing alternative brainstorming to bring out new ideas and tutors interest in mastering in curriculum aided design were found to promote creative teaching and learning in fashion design. Students' factors found to promote creative teaching and learning of fashion design were practicing sewing beyond the classroom instruction, finishing assignments and going beyond classroom course work, and thinking beyond what the tutors are telling them as well as implementing them.

Similarly, students' factors such as engaging their community with questions on fashion design to give them new creative ideas, researching online materials on fashion to boost their creativity, lack of financial support hinders their creative ideas and resources and structure are stimulating creative learning were also found to promote creative teaching and learning of fashion design.

Objective two of the study was to determine the pedagogical strategies in teaching and learning which promote creativity in fashion design.

The findings showed that using online resources and information gives students more opportunities to connect to creativity. Pedagogical approaches like experiments and project-based inquiry, in which students are given free reign to complete projects but are permitted to ask teachers questions, also support students' acquisition of creativity in the field of fashion design. Additionally, creating sessions that encourage creative processing of data and allow students to brainstorm to generate new ideas in creativity have been found to support students' creativity in the field of fashion design. In addition, demonstration method often used pedagogical strategy which promotes creativity in fashion design.

Objective three of this study was to assess the relevance of curriculum content in terms of promoting creative teaching and learning in fashion design. The results show that students' ability to make unusual associations while designing and sewing makes students more creative, have large number of ideas and solutions in design and actual sewing and students often caught dreaming about a particular fashion design were relevant of curriculum content which promote creative teaching and learning in fashion design. Other relevant curriculum content variables identified were students concerned about improving or modifying what the tutors teaches them, students asking man questions which sometimes are not understood by colleagues, students completion of project or assignments that are difficult and that require abstract thinking at the right time, family inspiration to try new ideas, family encouragement when students achieve something creative and family financial support that helps

students to explore new creative ideas from many places and found to promote creative teaching and learning in fashion design.

Objective four of the study sought to identify whether gender influences on creative achievement among students in fashion design.The results reveals that large number of female tutors handling the subject influence the students to feel that fashion design is for females. Also, most men feeling that fashion design is for ladies as well as men have perception that they will be mocked by the women are some of the gender issues that influences teaching and learning creativity in fashion design. It was also found that research into gender specific fashion and gender specific media discussion on fashion design indicate that gender tend to influence the teaching and learning of fashion design in the colleges of education.

The study's fifth objective was to investigate challenges facing teachers and students in the achievement of creativity in apparel construction.

The study revealed that teachers face several obstacles that hinder their capacity to foster creativity in garment construction. These include high class numbers and time constraints, difficulty covering the curriculum, inadequate resources, difficulty setting goals, an excessive workload, insufficient personnel, and a lack of initial training. On the part of the students, the challenge identified were lack of training facilities, lack of motivation from family and tutors, teachers teaching without teaching and learning materials, inadequate teaching staff, impact of social and cultural factors, insufficient time for practical work, environment and lack of administrative support. These challenges were found to have effect on the students' learning of creativity in fashion design.

For the testing of the hypothesis, the result revealed that some teachers and students factors promote creative teaching and learning of fashion design. Teachers' pedagogical strategies such as out sourcing and information from the internet, use of experiments and project-based inquiry and use of demonstration method during fashion design practical lessons were found to promote teaching and learning creativity in fashion design .The relevant curriculum content identified to promote creative teaching and learning in fashion design were students' ability to make association while designing and sewing, having large number of ideas and solution ,in design, dreaming about a particular fashion design ,modifying what students are taught in class and asking questions in class. The large number of female teachers teaching fashion design and perception that men do not have interest fashion design , fashion design is for ladies and men in will be mocked by women are some of the gender influence on creativity achievement in fashion design.

5.2.2 Implication of the Study Findings

The study established that there were some technological strategies such as CAD, for teaching and learning creativity in fashion design in the colleges of education in Ghana, however, there were inadequate resources, equipment and time to achieve this in fashion design in the colleges of education. The skills such as emotional support, convergent think and demonstration skills required by the tutors to impact the creativity skills in the students were also lacking. Thus, the interplay between content knowledge, pedagogical knowledge and instructional materials were deficient as most of the equipment used for the practical work was outmoded. It, therefore, remains only the tutors' responsibility to effectively teach to enhance meaningful instruction.

5.3 Conclusions

The main question that this study tried to answer was investigation of technology teaching strategies of vocational skills tutors and students' creative skills achievement in fashion design in Ghana colleges of education. First it was found that teacher and students' factors have a statistically significant influence on promoting creative teaching and learning in fashion design. These factors included practicing sewing, assignments, thinking beyond what is taught, engaging the community, researching online, financial support and access to resources and structures. The students were not able to operate to their maximum due to the obsolete infrastructure, inadequate human resources and materials to foster the creativity achievement of fashion design.

Secondly, some pedagogical strategies like out sourcing resources from the internet and use of experiments as well as project-based inquiry were identified have a statistically significant influence on promoting creativity teaching and learning in fashion design. These strategies were however impeded by time for the full potential achievement of practical work in creativity.

Thirdly, the curriculum content was found to be relevant and to encourage creative learning and teaching in the field of fashion design; however, the curriculum content could not be implemented to achieve its intended goal of fostering creativity in fashion design due to a lack of adequate human resources and materials.

Four, there was challenges of inadequate materials, time, equipment and human resources for the transmission of the creative skills from the teacher to the students coupled with poor stimulating environment which are required for creative teaching and learning of fashion design.

In the end, it was determined that encouraging students' creativity was necessary for them to acquire the occupational skills required by the college education system. After graduation, education college students are expected to provide their abilities in many trades, especially fashion. Additionally, teachers play a direct role in providing the students with the appropriate knowledge and abilities to foster their creativity. The rise of creativity has had a profound impact on the fashion industry. Consumer and producer behavior has shifted significantly in reaction to the rhythms and fluctuations of creativity—a skill that is both uncommon and limitless. Fashion design is extremely detailed and intricate, requiring a great deal of patience and creativity.

5.4 Recommendations

As a result of the findings of this study and conclusions drawn, the following recommendations were made:

5.4.1 Recommendations for policy

i. The ministry of education and the vocation centers should identify the best practices of teaching methods to mitigate challenges.
ii. The ministry of education should also develop vocational training policies that promote the adoption of teaching strategies and resources such as the use of the internet and outsourcing to enhance students' creativity in fashion and design.
iii. To help the fashion design tutors effectively impart creativity to the students, there should also be recurring capacity building workshops for stakeholders, such as representatives from the ministry of education and the school administration.

iv. The Ministry of Education, working with the Curriculum and Research Division, should create and oversee the implementation of a creativity policy on the incorporation of innovative instruction and instruction in fashion design for education colleges.

v. In order to boost fashion design instruction and learning, the department of education and other education stakeholders should set aside money for upgraded classrooms with internet access in education colleges.

5.4.2 Recommendations for Practice

i. In practice, the study recommends that teachers and principals of vocational colleges should promote enhanced use of technology-enhanced learning (TEL) environments such as use of outsourcing and use of CAD to promote student creativity.

ii. The study recommends that college of education institutions should train the students on how to integrate ICT in their teaching and learning creativity fashion design in their specialized areas.

5.4.3 Recommendations for Further Research.

The study suggested that the following areas warrant additional research:

i. To determine the true state of vocational skills acauisition in creativity in the nation, more research is required to replicate this study in various colleges of education across the nation. If this is carried out, results that support stakeholders in vocational education in formulating policies and making decisions would be discovered.

ii. Research on the causes of the low enrollment of students pursuing vocational skills in Ghana's education colleges is required.

iii. It would be beneficial to compare the fashion design creativity of young people attending technical universities, colleges of education, and non-formal adult literacy.

iv. The correlation between tutors' creative skills acquired and the actual practice in the workshops should also be investigated in future studies to examine whether they have a significant influence on students' creativity.

REFERENCES

Abdulai, A.R. Mohammed, A.W.A. & Kwadwo, N.I. (2016). The smock: Exploring an indigenous industry in tamale metropolis of northern Ghana, *International Journal Advances in Social Science and Humanities* 4(1), 2347-7474

Achieng, N. R. (2012): *Factors affecting acquisition of vocational skills among youth learners in Maranda Division Siaya County*. Being a Research Proposal submitted to the University of Nairobi.

Adams, A. M. &Kemevor, K. A. (2018). Teaching and learning creativity in fashion. A case study of the fashion department of Takoradi Technical University. *British Journal of Psychology Research, 6*(1), 1-21.

Ai, X. (1999). Creativity and academic achievement: An investigation of gender differences. *Creativity Research Journal*, *12*(4), 329- 337.

Akaranga S., I. & Makau B., K. (2016). Ethical considerations and their applications to Research: A case of the University of Nairobi. *Journal of Educational Policy and Entrepreneurial Research.* 3(12):1-9.

Akomaning, E. L. (2022). Methods for teaching sewing in junior high schools in the Sekondi-Takoradi metropolis, Ghana. *International Journal of Innovative Research and Development*, *11*(7). https://doi.org/10.24940/jird/2022/v11/i7/jul22003

Alderman, M. K. (1999). Motivation for achievement: Possibilities for teaching and learning. London: Lawrence Erlbaum Associates.

Alvi, M. (2016). A manual for selecting sampling techniques in research. *MPRA Paper*. https://ideas.repec.org/p/pra/mprapa/70218.html

Amabile, T. (1996). *Creativity in context*. Boulder, Colo: Westview Press.

Amabile, T. (1998). How to kill creativity. *Harvard Business Review,1*, 77-87.

Amedome, S. K. (2013). Challenges facing technical and vocational education in Ghana. *International Journal of Scientific & Technology, 2*(6), 253-255.

Amenuke, S. K., Dogbe, B. K., Asare, F. D. K., Ayiku, R. K. & Baffoe, A. (1991). *General knowledge in art for senior secondary schools*. London: Evans Brothers Limited.

American Psychological Association (2011). *Ready to teach act: Publication manual of theAmerican psychological association.* Washington DC, NY: American Psychological Association.

Amoakohene, S.K. (2008). *Teaching and learning in higher education*. Kumasi: Seneps Publication.

Amos, E., Essel, H. B., Fobiri, G. K., & Ibrahim, M. (2023). Analysis on Students' performance to promote gender Equality in Creative Fashion Design. *Edukasiana, 2*(4), 260–271. https://doi.org/10.56916/ejip.v2i4.445

Amy, M. Hightower, Rachael C. Delgado, Sterling C. Lloyd, Rebecca Wittenstein, Kacy Sellers and Christopher B. Swanson (2011). *Improving student learning by supporting quality teaching. Editorial Projects in Education, Inc. 6935* Arlington Road, Suite 100 Bethesda, MD 20814 www.edweek.org.

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives.* New York, NY: Longman.

Araya, D., & Peters, M. A. (Eds.). (2010). *Education in the creative economy: Knowledge and learning in the age of innovation.* New York, NY: Peter Lang Publishing.

Avoke, M. (2005). *Special education needs in Ghana: Policy practice and research*. Winneba: University of Education.

Azzam, A. M., & Robinson, K. (2009). Why creativity now? *Educational Leadership,67*(1), 22-26.

Baer, J., & Kaufman, J. C. (2008). Gender differences in creativity. *The Journal of* Creative *Behavior, 42*(2), 75-105.

Baer, J., & McKool, S. S. (2009). Assessing creativity using the consensual assessment technique. In C. S. Schreiner (Ed.), *Handbook of research on assessment technologies, methods, and applications in higher education* (pp. 65-77). Hershey, PA: IGI Global.

Baillie, C. (2002). Enhancing creativity in engineering students. *Engineering Science and Education Journal, 11*(5), 185-192.

Ball, P. (2010). *Assessing creativity in design: Emerging themes for engineering, an engineering subject centre guide.* Retrieved on 12th October, 2020 from http://exchange.ac.uk/book/export/html/812.html

Banahene, N.O.O.& Sarfo,F.K.(2010).*An introduction to general principles and methods of teaching*. Accra: Marlik Ltd.

Barnett, R. (2012). Learning for an unknown future. *Higher Education Research and Development, 31*(1), 65-77.

Barron, F., & Harrington, D. M. (2001). Creativity, intelligence, and personality. *Annual Review of Psychology, 32*(1), 439-476.

Barrow, L. H. (2010). Encouraging creativity with scientific inquiry. *Creative Education,1*, 1-6.

Batey, M., & Furnham, A. (2006). Creativity, intelligence, and personality: A critical review of the scattered literature. *Genetic, Social & General Psychology Monographs*, *132*(4), 355-429.

Biggs, J., & Tang, C. (2009). *Teaching for quality learning at university: What the student does*. Berkshire, UK: Society for Research into Higher Education and Open University Press.

Bill, G. (2013). *Teaching and learning creativity art*. Retrieved May, 15, 2020 from http//wn.com/learning-And-Creativity.com.

Bleakley, A. (2004). "Your creativity or mine?": A typology of creativities in higher education and the value of a pluralistic approach. *Teaching in Higher Education, 9*(4), 463-475.

Bogen, J. E. & Bogen, G. M. (2003). *Split-brains: Interhemispheric exchange in creativity*. Retrieved October 27, 2020 from http://www.its.caltech.edu/~jbogen/text/creat6.ht.

Bridgstock, R., S, Dawson, S., & Hearn, G. (2011). Cultivating innovation through social relationships: A qualitative study of outstanding Australian innovators in science and technology and the creative industries. In A. Mesquita (Ed.), *Technology for creativity and innovation: Tools, techniques and applications* (pp. 104-120). Melbourne: Macmillan.

Bryman, C. H. and Crame (1997), *Research Methods in Librarianship: Techniques and Interpretation*. Orlando, FL: Academic Press, Inc.

Burns, B., & Hoagwood, K. E. (2005). *Evidence-based practice*. North America: Psychiatric Clinics of North America.

Burns, T., MacDonald, L., Sibbald, B., Gask, L., & Roberts, G. (1995). Educational assessment of general practice experience for psychiatric trainees. *Medical Education*, *29*(2), 159–164. https://doi.org/10.1111/j.1365-2923.1995.tb02821.x

Bušljeta, R. (2013). Effective use of teaching and learning resources. *Czech-Polish Historical and Pedagogical Journal,* 5(2), 55–69.

Byers, V. (2017). Creativity, innovation, and change. In *Leadership and Change for the Health Professional* (1st ed.). Open University Press. http://norma.ncirl.ie/3332/

Cambridge Business English Dictionary (2011). Cambridge University Press. Cambridge University.

Cameron, S. (2000). *Technology in the creative classroom*. Retrieved on 10th June, 2020 from ED441260

Caruth, G.D. (2013). Mevlan International Journal of Education (MIJE)vol.3 (2).pp.http://mije.mevlana.edu tr.

Chan, S., & Yuen, M. (2014). Personal and environmental factors affecting teachers' creativity-fostering practices in Hong Kong. *Thinking Skills and Creativity*, *12*, 69-77.

Charyton, C., &Snelbecker, G. E. (2007). General, artistic and scientific creativity attributes of engineering and music students. *Creativity Research Journal*, *19*(2/3), 213-225

Childs, P., Han, J., Chen, L., Jiang, P., Wang, P., Park, D., Yin, Y., Dieckmann, E., & Vilanova, I. (2022). The Creativity Diamond—A framework to Aid Creativity. *Journal of Intelligence*, *10*(4), 73. https://doi.org/10.3390/jintelligence10040073

Craft, A. R. (2006). Creativity in schools. In N. Jackson, M. Oliver, M. Shaw & J. Wisdom (Eds.), *Developing creativity in higher education: An imaginative curriculum* (pp. 19-28). London, UK: Routledge.

Craig, R.I. (2001). *Creativity.* Retrieved on August 27, 2018 from http://www.asaz.org/ASA/edu/think/creative.htm

Creswell, J. W. (2014). *Research Design. Qualitative, Quantitative and Mixed Methods Approaches (4th Ed.)* Lincoln: Sage Publications

Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests. *Psychometrika*, 16, 297–334.

Cropley, A. J. (2020). *Definitions.* Runco & S. R. Pritzke

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery about invention*. New York: Harper Collins.

Csikszentmihalyi, M. (1996). If we are so rich, why aren't we happy? *American Psychologist, 54*, 821-827.

Csikszentmihalyi, M. (1997). *Creativity: Flow and the psychology of discovery and invention*. New York, NY: Harper Perennial.

Darvas, P., Palmer, R. (2004). Demand and Supply of Skills in Ghana: How can Training Programs Improve Employment and Productivity? Retrieved from http://dx.doi.org/10.1596/978-1-4648-0280-5

Day, C. & Sammons, P. (2014). *Successful School Leadership.* Reading, Education Development.

Day, C., Gu, Q., & Sammons, P. (2016). The impact of leadership on student outcomes. *Educational Administration Quarterly*, *52*(2), 221–258. https://doi.org/10.1177/0013161x15616863

Drew L., and Shreeve, A. (2008). Assessment as participation in practice. Proceedings of the 12th improving student learning symposium, Ed.C. Rust, Oxford: OCSLD.

Eisner, E. W. (2002). What can education learn from the arts about the practice of education? *Journal of Curriculum of Supervision, 18*(1), 4-16.

Elias, S. M., Smith, W. L. & Barney, C. E. (2012): Age as a moderator of attitude towards

Encarta (2003). *World English dictionary*. London: Bloomsbury Publishing

Encarta World English Dictionary. (2009). *Microsoft Corporation*. U.S.A: Bloomsbury Publishing Pic.

Esquivel, G. B. (1995). Teacher behaviors that foster creativity. *Educational Psychology Review,* 7(2), 185–202. https://doi.org/10.1007/BF02212493

Etikan, I., Musa, A. S. &Alkassim, S. R. (2016). Comparison of Convenience Sampling and Purposive Sampling. American Journal of Theoretical and Applied Statistics. 5(1),1-4.

European University Association. (2007). *Creativity in education: Report on the EUA creativity project 2006-2007.* Retrieved on 16th September, 2020 from http://www.eua.be/fileadmin/user_upload/files/Publications/Creativity_in_hi gher_education.pdf

Farrant, J.S. (1980). *Principles and practice of education*. England: Longman Group.

Feldman, D.H. (1999). The development of creativity. In R.J Sternberg (Ed.), Handbook of Creativity (pp.169-186). New York Cambridge University Press.

Finn J.D. (2002). Expectations and the educational environment. *Review of Educational Research 42*, 387-410.

Fleming, M. (2008). *Arts in education and creativity: A review of the literature*. Retrieved on 12th June, 2020 from www.artiseducation.com/media/.../arts-education-creativity91.pdf

Florida, R. (2002). *The rise of the creative class how it's transforming work, leisure, community and everyday life*. New York: Basic Books.

Fraenkel, J.R. & Wallen, N. E. (2006). *Educational research*: *A guide to the process.* New York: McGraw- Hill Inc.

Fryer, M. (2006). Facilitating creativity in higher education: A brief account of National Teaching Fellows' views. In N. Jackson, M. Oliver, M. Shaw & J. Wisdom (Eds.), *Developing creativity in higher education* (pp. 74-88). London, UK: Routledge.

Fryer, M. (2012). Some key issues in creativity research and evaluation as seen from a psychological perspective. *Creativity Research Journal, 24*(1), 21-28.

Garibay, C. J. (2015). *Creating a Positive Classroom Climate for Diversity. UCLA Diversity and Faculty Development.* Retrieved from https://equity.ucla.edu/wp-content/uploads/2016/06/CreatingaPositiveClassroomClimateWeb-2.pdf

Gelb, M. J. (1996). *Putting your creative genius to work: How to sharpen and intensify your mind power*. Conant Illinois: Nightingale.

Glăveanu, V.P. (2018). Creativity in and for Society. *Theories Research Applications,* 5 (2),156-158.

Gliem, J.A. & Gliem, R.R. (2003). *Calculating, interpreting and reporting Cronbach's alpha reliability coefficient for likert-type scales.* Columbus, OH: Ohio State University Press.

Goldsmith, R. E. (2000). Characteristics of the heavy user of fashionable clothing. *Journal of Marketing Theory and Practice, 8*(4), 21–28. https://doi.org/10.1080/10696679.2000.11501877

Goodyear, P.&Retalis, S. (2010). Learning, technology and design. In P. Goodyear & S. Retalis (Eds.), *Technology-enhanced learning: Design patterns and pattern languages* (pp. 1-27). Rotterdam, Netherlands: Sense Publishers.

Greene, R. T. (2001). *A model of 42 models of creativity. 1-117*. Retrieved on 12th July, 2020 from http://www.creativityaustralia.com.au/docs/rtgreene-journal-42-models-ofcreativity.pdf

GTEC (2022). *List of Accredited Tertiary Education Institutions as at May 31, 2021* https://gtec.edu.gh/news/C9D953B-D52D-4C

Herbert, A. (2010). *The pedagogy of creativity*. London, UK: Routledge.

Hoff, E. V. (2005). Imaginary companions, creativity, and self-image in middle childhood. *Creativity Research Journal, 17*(2/3), 167-180.

Howkins, J. (2010). *Creative ecologies: Where thinking is a proper job*. St Lucia, QLD: University of Queensland Press.

Jackson, N. (2006). Creativity in higher education: Creating tipping points for cultural change. *SCEPTrE Scholarly Papers, 3*, 1- 26.

Jackson, N., & Shaw, M. (2006). Developing subject perspectives on creativity in higher education. In N. Jackson, M. Oliver, M. Shaw & J. Wisdom (Eds.), *Developing creativity in higher education: An imaginative curriculum* (pp. 89-108). London, UK: Routledge.

Johnson, S. (2001). *Emergence: The connected lives of ants, brains, cities and software*. London, UK: Penguin.

Kaput, K. (2018). Evidence for Student-Centered Learning. *Education Evolving*. http://files.eric.ed.gov/fulltext/ED581111.pdf

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.

Kaufman, J. C. (2006). Self-reported differences in creativity by ethnicity and gender. *Applied Cognitive Psychology, 20*(1), 1065-1082.

Kaufman, J. C., Baer, J., Agars, M. D., & Loomis, D. (2010). Creativity stereotypes and the consensual assessment technique. *Creativity Research Journal, 22*(2), 200-205.

Kazerounian, K.& Foley, S. (2007). Barriers to creativity in engineering education: A study of instructors' and students' perceptions. *Journal of Mechanical Design, 129*, 761-768.

Khan, H. (2017). *The Business Dictionary*. https://www.amazon.com/Business-Dictionary-Hassam-Khan/dp/1545526648

Kim, K. H. (2007). The two Torrance creativity tests: The Torrance tests of creative thinking and thinking creatively in action and movement. In A. G. Tan (Ed.), *Creativity: A handbook for teachers* (pp. 117-142). Hackensack, NJ: World Scientific Publishing.

Kogan, N. (1974). Creativity and sex differences. *The Journal of Creative Behavior, 8*(1), 1-14

Kovacs, A., (1985) The Research process: Essentials of skill development. Philadelphia, USA: F.A. Davis Company.

Kozbelt, A., Beghetto, R. A.& Runco, M. (2010). Theories of creativity. In J. C. Kaufman & R. J. Sternberg (Eds.), *The Cambridge handbook of creativity* (pp. 20-47). New York, NY: Cambridge University Press.

Krista K. (2018). Evidence for Student-Centerer Learning. Education evolving. Retrieved from https://files.eric.ed.gov/fulltext/ED581111.pdf

Kuofi, T. (2015). *Professional background of males in the fashion industry in the Cape Coast metropolis.* Cape Coast, Ghana: University of Education, Winneba.

Lauren,R.(2007).*Fashion design and creativity*. New York: Culture Kioque.

Laurillard, D. (2012). *Teaching as a design science*. New York, NY: Routledge.

Lawhorn, B. (2008). Extracurricular activities: The after-school connection. *Occupational Outlook Quarterly; Winter*, 52(4), p16

Lewin, R. (1993). *Complexity: Life on the edge of chaos*. London, UK: Phoenix.

Loveless, A. (2007). *Report 4 update: Creativity, technology and learning: A review of recent literature. Future Lab: Innovation in education*. Retrieved on 20th July, 2020 from http://archive.futurelab.org.uk/resources/documents/lit_reviews/Creativity_R eview_update.pdf

Lucas, B. & Hanson, J. 2015. Learning to be employable. Practical lessons from research into developing character. Available at: www.cityandguilds.com/learningtobeemployable.

Lutus, P. (2005). *Creative problem solving*. Retrieved on 10th July, 2020 from http://www.arachnoid.com/lutusp/ crashcourse.html.

Maclure, R. (2007).*Overlooked and undervalued*. Central Africa: US Agency.

Matud, M., Rodríguez, C. C., & Grande, J. J. (2007). Gender differences in creative thinking. *Personality & Individual Differences, 43*(5), 1137-1147.

McGill, I.& Beaty, L. (1995). *Action learning: A guide for professional management and educational alert.* London: Kogan page

McWilliam, E. (2007). Is creativity teachable? Conceptualising the creativity/pedagogy relationship in higher education. In *Enhancing higher education, theory and scholarship, 30th HERDSA annual conference* (pp. 1-13): Higher Education Research and Development Society of Australasia. Retrieved on 30th August, 2020from http://eprints.qut.edu.au/15508/1/15508.pdf.

McWilliam, E., & Dawson, S. (2007*). Understanding creativity: A survey of "creative" academic teachers*. Canberra, ACT: Carrick Institute of Teaching and Learning.

McWilliam, E., & Dawson, S. (2008). Teaching for creativity: Towards sustainable and replicable pedagogical practice. *Higher Education, 56*(6), 663-643.

Moran, S., Cropley, D. & Kaufman, J. (2014). The ethics of creativity. NY: Palgrave

Mugenda, M.& Mugenda, G. (2003*). Research Methods: Qualitative and Quantitative Approaches*. Nairobi: Acts Press

Mugenda, O.M. & Mugenda, A.G. (2009). *Research methods: Quantitative and qualitative approaches.* Nairobi. Acts Press.

Mumford, M. D. (2003). Where have you been, where are we going? Taking Stock in Creativity Research. *Creativity Research Journal*, *15*, 107-120.

Murphy, P.&Moon, B. (1990). *Developments in learning and assessment*. New Castle: Athenaeum Press Ltd.

Naiman, D. Q. & Hao, P. (2010). *Assessing inequality*. New York, U.S.A: SAGE. National Accreditation Board, Ghana (2019), *Public College of Education*. Retrieved February 06, 2019 from http://nab.gov.gh/public-colleges-of-education

National Curriculum Action. (2010). *Implementing the mathematics national curriculum*. London: SAGE.

Ngogo, J. L. (2014): Assessment of attitudes of secondary school students towards vocational education and training in Tanzania: Case Study of Mpwapwa District. A Dissertation Submitted in Partial Fulfilment of the Requirements for The Degree of Master of Science in Agricultural Education and Extension of Sokoine University of Agriculture. Morogoro, Tanzania.

Niemi, H. (2002). Active Learning—A Cultural Change Needed in Teacher Education and Schools. *Teaching and Teacher Education,* 18, 763-780.

Nold H. (2017) Using Critical Thinking Teaching Methods to Increase Student Success: An Action Research Project. *International Journal of Teaching and Learning in Higher Education*. 29(1), 17-32.

O'Brien, J. L., (2017). A Study of Parent Perceptions of Advanced Academic Potential in the Early Grades. *Honors Scholar Theses*. 536. Retrieved from http://digitalcommons.uconn.edu/srhonors_theses/536

OECD (1998) *Staying Ahead: In-service Training and Teacher Professional Development*. Paris: OECD.

Okai-Mensa, C.K, Opoku-Asare, N. A. and Siaw, A.O.(2017).Textiles Education in Ghana: A view from Senior High School in the Greater Accra Region. International Conference on Education, Proceedings Development & Innovation. Retrieved from www.incediorgiwp.

Okoro, O. M. (2009). *Principles and methods in vocational and technical education*. Enugu : ABIC Publishers.

Orodho, D. (2009): A Guide to writing Research Proposals and Reports. Kisumu: Option Press.

Palinkas, L., Horwitz, S., Green, C., Wisdom, J., Duan, N., &Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration & Policy in Mental Health & Mental Health Services Research*, 42(5), 533-544.

Parkhurst, H.B. (1999). Confusion, lack of creativity as a construct. *Journal of CreativeBehaviour, 33*(1), 1-21.

Patton, M. (1990). *Qualitative evaluation and research methods*. Beverly Hills, CA: Sage.

Petocz, P., Reid, A., & Taylor, P. (2009). Thinking outside the square: Business students' conceptions of creativity. *Creativity Research Journal, 21*(4), 409-416.

Petty, R. E. (1994). Multiple roles for affect in persuasion. In J. Forgas (Ed.), *Emotion and social judgments* (pp. 181–200). Oxford, England: Pergamon Press.

Plsek, P. E. (1996). *Working paper: Models for the creative process*. Retrieved on 20th July, 2020 from http://www.directedcreativity.com/pages/WPModels.html

Plucker, J. A., & Makel, M. C. (2010). Assessment of creativity. In J. C. Kaufman & R. J. Sternberg (Eds.), *The Cambridge handbook of creativity*. New York, NY: Cambridge University Press.

Puccio, G. J., Mance, M., & Murdock, M. C. (2011). *Creative leadership: Skills that drivechange*. Thousand Oaks, CA: Sage.

Qutoshi, S., & Poudel, T. (2014). Student Centered Approach to Teaching: What Does It Mean for the Stakeholders of a Community School in Karachi, Pakistan? *Journal of Education and Research, 4*(1), 24-38.

Ray, L.(2019).Definition of Fashion Designing work-Chron.com. Retrieved from http://work.chron.com/definition-fashion-designing-25262.html

outcomes: An Extension of Holland's Theory. *Research in Higher Education*, 53 (5), 550 – 575.

Reid, A.&Petocz, P. (2004). Learning domains and the process of creativity. *The AustralianEducational Researcher, 31*(2), 45-62.

Reid, A., &Solomonides, I. (2007). Design student' experience of engagement and creativity. *Art, Design and Communication in Higher Education, 6*(1), 27-39.

Rhodes M. (1961). An analysis of relativity. The Phi Delta Kappan, 42, 305-310

Robinson, K. (2011). *Out of our minds: Learning to be creative*. Oxford, UK: Capstone.

Rooney, D. (2010). Creatively wise education in a knowledge economy. In D. Araya & M. A. Peters (Eds.), *Education in the creative economy: Knowledge and learning in the age of innovation* (pp. pp.179-199). New York, NY: Lang.

Rosner, D. K., & Ryokai, K. (2008, September). Spyn: augmenting knitting to support storytelling and reflection. In *Proceedings of the 10th international conference on Ubiquitous computing* (pp. 340-349). ACM.

Runco, M. A. (2003). Education for creative potential. *Scandinavian Journal of Educational Research, 47*, 317-324.

Runco, M. A. (2011). Divergent thinking. In M. A. Runco & S. R. Pritzker (Eds.), *Encyclopedia of creativity* (2nd ed., Vol. 1, pp. 400-403). Amsterdam, Netherlands: Elsevier.

Russ, R. W., & Dillon, J. A. (2011). Associative theory. In M. A. Runco & S. R. Pritzker (Eds.), *Encyclopedia of creativity* (2nd ed., pp. 66-71). Boston, MA: Academic Press.

Sapsford, R., & Jupp, V. (2006) Data Collection and Analysis. London, SAGE Publications Ltd

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

Schirrmacher, Robert (1998). Art and creative development for young children. Albany, New York.

Schofield-Tomschin, S. (1999). Home sewing: Motivational changes in the twentieth century. In B. Burman (Ed.), *The culture of sewing: Gender, consumption and home dressmaking* (pp. 97-110). Oxford, UK: Berg.

Scott, G., Leritz, L.& Mumford, M. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal, 16*(4), 361-388.

Seel, R. (2006). *Emergence in organisations*. Retrieved on 30th October, 2020 from http://doingbetterthings.pbworks.com/f/RICHARD+SEEL+Emergence+in+O rganisations.pdf

Seelig, T. (2012*). Ingenius: A crash course on creativity*. London, UK: Hay House

Seymour, D. W. (2006). *Industrial skills*. London: Pitman Publishing

Silver, H. F., & Perini, M. J. (2010). *Classroom curriculum design: How strategic units improve instruction and engage students in meaningful learning*. Ho-Ho-Kus, NJ: Thoughtful Education Press.

Simonton, D. K. (1990). History, chemistry, psychology, and genius: An intellectual biography of historiometry. In M. A. Runco & R. S. Albert (Eds.), *Theories of creativity* (pp. 92-115). Newbury Park, CA: Sage.

Smith, R. A. (2000). Gardner on education: Destination and navigation.Arts Education Policy Review, 101(5),36 – 40.

Smith, S. J. (2001). *Vocational education and the world of work*. Boston: Allen and Baco Inc

Smith-Bingham, R. (2006). Public policy, innovation and the need for creativity. In N. Jackson, M. Oliver & J. Wisdom (Eds.), *Developing creativity in higher education*: *An imaginative curriculum.* London, UK: Routledge.

Stacey, R. D. (2000). *Strategic management and organizational dynamics: The challenge of complexity* (3rd ed.). New York, NY: Financial Times Prentice Hall.

Sternberg, R. J. (2005). Creativity or creativities. *International Journal of Human Computer Studies–Special issue: Computer support for creativity, 63*(4-5),370-382.

Sternberg, R. J. (2007). Creativity as a habit. In A.-G. Tan (Ed.), *Creativity: A handbook forteachers* (pp. 3-25). Singapore: World Scientific Publishing.

Sternberg, R. J., Kaufman, J. C., & Pretz, J. E. (2002). *The creativity conundrum: A propulsion model of kinds of creative contributions.* New York, NY: Psychology Press.

Sternberg. R. J. &Lubart, T. (1996). Investing in Creativity. *American Psychologist,* 15(7), 677- 688.

Swirski, T. (2012). *Becoming a creative practitioner in a complex society: Fostering a capability approach in higher education pedagogy*. (Doctoral Thesis, Macquarie University, Sydney, Australia).

Tety, J.L (2016). *Role of instructional materials in academic performance in community secondary schools in Rombo district*. Open University of Tanzania

Tharp, T. (2003). *The creative habit: Learn it and use it for life*. New York, NY: Simon and Schuster.

Torrance E. P. (1974). *Torrance tests of creative thinking: Norms-technical manual*. Bensenville, IL: Scholastic Testing Service.

Tosey, P. (2006). Interfering with the interference: An emergent perspective on creativity in higher education. In N. Jackson, M. Oliver, M. Shaw & J. Wisdom (Eds.), *Developing creativity in higher education* (pp. 29-42). London, UK: Routledge.

Trochim, William M.K. (2006, October 20). *Research Methods Knowledge Base*. Retrieved from http://www.socialresearchmethods.net/kb/contents.php

Turnbull, A., & Eickhoff, M. (2011). Business creativity–Innovating European entrepreneurship education. *Journal of Small Business and Entrepreneurship*, *24*(1), 139-150.

UNESCO. (1996). Our creative diversity: Report of the World Commission on Culture and Development. Retrieved on 23rd June, 2020 from http://unesdoc.unesco.org/images/0010/001055/105586e.pdf

Uwaifo, V. O. (2010). Technical education and its challenges in Nigeria in the 21st century. *International NGO Journal, 5*(2), 040 -044.

Waldrop, M. (1992). *Complexity: The emerging science at the edge of order and chaos*. London, UK: Penguin.

Walker, C., & Gleaves, A. (2008). An exploration of students' perceptions and understandings of creativity as an assessment criterion in undergraduate-level studies within higher education. *Irish Educational Studies, 27*(1), 41-54.

Wallas G. (1926). The Art of Thought. New York, NY Harcourt, Brace and Company.

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

Weisberg, R. W. (2006). *Creativity: Understanding innovation in problem solving, science, invention, and the arts*. Hoboken, NJ: Wiley & Sons.

Williams, A., & Askland, H. (2012). *Assessing creativity: Strategies and tools to support teaching and learning in architecture and design. Final report.* Newcastle, NSW: University of Newcastle.

Winn,D.& Banks,F., (2012).CAD and Creativity: a new pedagogy. In PATT 26 Conference, Technology Education in the 21st Century 26-30 June 2012, Stockholm, Sweden.

Zacko-Smith, J. D., Puccio, G. J., & Mance, M. (2010). Creative leadership: Welcome to the 21st century. *Academic Exchange Quarterly*, *14*(4), 133-138.

Zhang, G., Zhao, Y., & Lei, J. (2012). Looking forward to a special issue on educational innovations in China. *On the Horizon, 20*(2), 104-109.

APPENDICES

College Code: ……..

Appendix A: Questionnaire for College of Education Tutors

I am a Ph.D. student at Kenyatta University in the Department of Educational Communication and Technology and I am researching on the topic: Technological Teaching Strategies of Vocational Skills Tutors and Students' Creative Skills Achievements in Fashion Design in Ghana Colleges of Education. You have been chosen to partake in this study by responding to this questionnaire. Please assist in the contribution of information toward this study by filling in the questionnaire below. The information provided is purely for academic purposes and confidentiality will be assured.

INSTRUCTIONS

Please put a tick (√) against the appropriate response in the space provided.

Section A: Demographic Information

1. Gender

   i. Male ( ) Female ( )

2. Age:

   i. 30 - 35 years ( )

   ii. 36 - 40 years ( )

   iii. 41 - 45 years ( )

   iv. 46years and above ( )

3. How long have been teaching fashion designs at the college level?

   i. Less than 5 years ( )

   ii. 5 – 10 years ( )

iii. 11 – 15 years ( )

iv. 16 – 20 years ( )

v. 21 years and above ( )

4. 1What is your highest qualification?

i. Ph.D. ( )

ii. Master's degree ( )

iii. Bachelor's degree ( )

iv. Other (s)…….(indicate)

Section B: The factors that affect teaching creatively among Teachers in fashion design.

Please show the extent to which you agree or disagree with the following statement of Teacher factors that affect creative teaching of Sewing in College of Education by ticking ( ) the appropriate column in each case. Using the following five-point Likert scale for your responses:

Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD).

Statement	**SA**	**A**	**N**	**D**	**SD**
1. Practicing traditional method of teacher-centered instruction bring out students' creativity.					
2. Practicing traditional method of teacher-centered instruction do not allow me to creative enough.					

3. Focusing on students' interest and adopting a student-centered approach do not brings out students creativity innovatively.					
4. Focusing on students' interest and adopting a student-centered approach brings out creative idea from my students.					
5. Posting a question and allowing classroom discussion among students has been great at creating new ideas.					
6. Posing a question and allowing interactive brainstorming is great at bringing out new ideas.					
7. Posing a question and allowing interactive brainstorming is do notbring out new ideas.					
8. Classrooms are conducive for teaching creativity.					
9. The teachers are afraid to promote risk-taking.					
10. My family supports me financially and that help me to explore new creative ideas from many places.					
11. My family do not supports me financially and that make me not to explore new creative ideas from many places.					
12. The teaching and learning equipment are outmoded for creative teaching.					
13. The teachers are not interested in mastery CAD.					
14. The teachers sometimes do collaboration creative leaning during their workshops.					

15. State two information sources which foster creativity in teaching fashion design in your college.

……

……

……

……

Section C: Pedagogical Strategies and Skill used by Teachers to Promote Creativity in Fashion Design

To what extent do you agree and disagree with the following statement? Tick (√) where appropriate, with reference to the scale: **Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD).**

Statement	**SA**	**A**	**N**	**D**	**SD**
1. Students will have greater inspiration to connect creatively if resources and knowledge from the internet are outsourced.					
2. Innovative teaching strategies include experiments and project-based learning, in which students work independently on projects while receiving guidance from their teachers, foster students' creativity in the field of fashion design.					
3. Developing brainstorming sessions that encourage students to digest material imaginatively and generate fresh, creative ideas.					
4. Fostering convergent thinking in pupils via practical exercises and problem-solving techniques boosts their creativity.					

5. Providing emotional support to pupils through classroom interactions does not foster a creative interest in them.					
6. The demonstration approach, which is frequently used in hands-on fashion design classes, fosters innovation.					

Section D: Suggestion of gender influences creative teaching in fashion design.

Suggest four ways which gender can influences creative teaching in fashion design in the College of Education.

i. ……

……

ii. ……

……

iii. ……

……

iv. ……

……

Section E: The Challenges facing Teachers in teaching Creatively in Fashion Design.

To what extent do you agree and disagree with the following statement? Tick (√) where appropriate, with reference to the scale: **Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD).**

Statement	**SA**	**A**	**N**	**D**	**SD**
1. Teaching and learning creativity is not adversely affected by time constraints or high class sizes.					
2. Timely curriculum coverage has little bearing on innovative teaching methods or teaching creativity.					
2. . Insufficient resources don't prevent innovative instruction					
3. The attainment of educational goals and standards does not impact the caliber of instruction or the manner in which it is delivered.					
4. An excessive workload and a lack of staff do not affect the quality of instruction or its transformation.					
5. Insufficient in-service training for fashion design creativity instruction..					

6. What other challenges do you face while teaching fashion design?

THANKS FOR YOUR COOPERATION

APPENDIX B: Questionnaire for College of Education students

College

Code:……

I am a Ph.D. student at Kenyatta University (Department of Educational Communication and Technology) researching on the topic: Technological Teaching Strategies of Vocational Skills Tutors and Students' Creative Skills Achievements in Fashion Design in Ghana Colleges of Education. You have been selected to participate based on your answers to this survey. Please complete the following questionnaire to help with the information contribution for this study. Confidentiality is guaranteed, and the material is only used for academic purposes.

INSTRUCTIONS

Please put a tick (√) against the appropriate response in the space provided.

Section A: Biographic Data

1. Sex:

   i. Male ( )

   ii. Female ( )

2. Age:

   a. Below 18 years ( )

   b. 18 – 25 years ( )

   c. 26 – 30 years ( )

   d. 31- 35 years ( )

   e. 36 – 40 years ( )

3. Have you had any sewing experience before being enrolled in the College of Education to pursue Vocational Skills Programme?

a) Yes ( )

b) No ( )

4. Have you had any informal sewing experience?

a) Yes ( )

b) No ( )

Section B: The factors of creative learning among Students in Fashion design.

To indicate your level of agreement or disagreement with the following statements regarding the student aspects that influence creative sewing learning in the College of Education, please check (√) the appropriate row in each case. On the five-point Likert scale that follows, please rate your responses as follows: **Agree (A), Strongly Agree (SA), Neutral (N),Disagree (D), and strongly disapprove (SD).**

Statement	**SA**	**A**	**N**	**D**	**SD**
1. Practicing sewing beyond the classroom improves my creativity					
2. Finish assignments and going beyond my classroom coursework improves my creativity					
3. Thinking beyond what the tutor is telling me and implementing it improves my creativity					

4. Engaging my community with questions on fashions gives me new creative ideas					
5. Researching online materials on fashion boosts my creativity					
6. My family hardly inspires me to try a new idea.					
7. Lack of financial support hinders creative idea.					
8. Resources and structures are stimulating creative learning					

Section C: **Students' views on pedagogical strategies to improve creativity in fashion design**

Please check (√) the appropriate column in each case to indicate how much you concur or disagree with the subsequent assertions about pedagogical practices that affect creative learning of sewing at the College of Education. Please rate your answers on the following five-point Likert scale**: Strongly Disagree (SD)., Agree (A), Strongly Agree, Neutral (N), and Disagree (D).**

Statement	**SA**	**A**	**N**	**D**	**SD**
The tutors use information and resources from the internet, which gives me more inspiration for making creative connections.					

Teachers support the development of creativity in fashion design by using educational strategies including experiments and project-based inquiry, in which I am given the freedom to work alone on a project while still being able to ask questions.					
In order to encourage creative information processing, the tutors design workshops in which I am free to discuss and generate fresh creative ideas.					
Through practical exercises, tutors encourage convergent thinking, and my creativity is aided by problem-solving techniques.					
My interest in creativity is not aided by tutors' emotional support during classroom interactions.					
My creativity is encouraged by the demonstration method that is frequently used in fashion design practical classes.					

Section D: The curriculum content and creative learning among Students in Fashion design

Please show the extent to which you agree or disagree with the following statements of curriculum content that affect creative learning of sewing in College of Education by ticking (√) the appropriate column in each case. Using the following five-point Likert scale for your responses: **Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D.) and Strongly Disagree (SD).**

Statement	**SA**	**A**	**N**	**D**	**SD**
1. The subjects taught in the program are current					
2. The curriculum encourages experiments, observations, and fieldwork to help pupils become self-sufficient.					
3. The program is important since it has given me abilities that are applicable to the fashion and design industry today.					
4. The curriculum is learner-centered, which piques my interest in the subject matter					
5. program emphasizes process and skill acquisition, giving students the ability to address problems both now and in the future.					
6. The curriculum addresses the social and economic demands of the present.					

Section E: The Challenges facing Students in Learning Creatively in Fashion Design..

To what extent do you agree and disagree with the following statements? Tick (√) where appropriate, with reference to the scale: **Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD)**

Statement	**SA**	**A**	**N**	**D**	**SD**
1. My learning has not been impacted by a lack of training facilities.					
2. My learning is unaffected by my family's and my teachers' lack of passion.					
3. My creative accomplishments are unaffected by my teacher's lack of Teaching and Learning Materials (TLMs).					
4. The lack of tutors has no bearing on students' ability to learn in the classroom					
5. Social and cultural vices about fashion design have no bearing on my creativity learning					
6. There is not enough time for hands-on work.					
7. The need to be ready for the final exam of the semesters					
8. My creative learning in fashion design is unaffected by the absence of a realistic setting.					

9. The college administration's lack of administrative support has hampered my ability to learn fashion design creatively.					

6. Please apart from the challenges above what, other challenges do you face while learning fashion design?

   i. ……

   ii. ……

   iii. ……

   iv. ……

Section F: Assessing the student's ability and creative achievement in fashion *design*.

To what extent do you agree and disagree with the following statements? Tick (√) where appropriate, with reference to the scale: **Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D)and Strongly Disagree (SD)**

Statement	**SA**	**A**	**N**	**D**	**SD**
1. My ability to make unusual associations while designing and sewing makes me more creative					
2. I have a large number of ideas and solutions in design and actual sewing					
3. I am often caught dreaming about a particular fashion design					
4. I find myself concerned about improving or modifying what the tutor teaches us					
5. I find myself asking many questions which sometimes are not understood by my colleagues					
6. I complete projects or assignments that are difficult and that require abstract thinking at the right time.					
7. Do your family inspire you to try new ideas?					

8. Do your family encourage you when you achieve something creative?					
9. My family supports me financially and that helps me to explore new creative ideas from many places.					

10. Kindly list two ways in which a student can achieve creativity in fashion design?

    a. ……

    b. ……

    c. ……

THANKS FOR YOUR COOPERATION

APPENDIX C: Interview Guide for College of Education Principal's

College Code:……

I am a Ph.D. student at Kenyatta University (Department of Educational Communication and Technology) researching on the topic: Technological Teaching Strategies of Vocational Skills Tutors and Students' Creative Skills Achievements in Fashion Design in Ghana Colleges of Education. You have been chosen to partake by responding to this interview guide. Please assist in the contribution of information which will be used for research purposes only. The information provided is purely for academic purposes and confidentiality will be assured.

INSTRUCTIONS

Please put a tick (√) against the appropriate response in the space provided.

Section A: Demographic Information

1. Sex:
   a. Male ( )
   b. Female ( )
2. How many years have you been in post as a principal?
   a. Less than 5years ( )
   b. 5 – 10 years ( )
   c. 11 years and above ( )

Section B: Interview Questions

1. How is creativity in Fashion design viewed by college community in general?
2. How do you ensure that the fashion design teachers are well updated with the vocational skills curriculum changes?
3. In your opinion, what factors contribute to the attitude of teachers and students towards creative teaching and learning?
4. What challenges do Fashion Design teachers and students encounter when using outmoded sewing equipment in workshops?
5. Suggest strategies that you think could be employed in your institution to instill a positive attitude among fellow teachers and students towards teaching and learning creativity.

THANKS FOR YOUR COOPERATION

APPENDIX D: Documentary Analysis Checklist

College Code…….

Instruction:

Please read through the statements and tick (√) where appropriate or comment where appropriated with the reference to the YES and NO

Statement	YES	NO	Comment
1. The college has a current and relevant syllabus to teach creativity.			
2. Do students receive their course outline before the academic year?			
3. The syllabus is available at the right place.			
4. Does the college have enough computers for students to practice creative CAD usage?			
5. Does the college have enough sewing equipment to boost student's creativity?			
6. Structures are well constructed for free movement.			
7. The college has television to help watch and compare others creativity.			
8. The college has a lot of fashion design text books to promote creativity.			
9. Wi-Fi is always available for research on creativity.			
10. The college has a stand by generator for power back-up.			

THANKS FOR YOUR COOPERATION

APPENDIX E: A MAP OF THE STUDY AREA-ASHANTI REGION

APPENDIX F: MAP OF GHANA

APPENDIX G: Letter of Approval of Research Proposal

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School **DATE:** 13th September, 2019

TO: Vida A. Amegbanu **REF:** E83F/25173/18
C/o Department of Educational Communication & Technology
Kenyatta University

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge the receipt of your revised Research Proposal entitled **"Technological Teaching Strategies of Vocational Skills Tutors and Students Creative Skills Achievements in Fashion Design in Ghana Colleges of Education"** as per recommendations raised by the Graduate School Board of 7th August,2019.

You may now proceed with your Data collection, subject to clearance with the Chief Executive Officer, National Council for Tertiary Education, Accra, Ghana.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking Forms per semester. The form has been developed to replace the progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D. studies.

Thank you.

KENYATTA UNIVERSITY * OFFICE OF DEAN * GRADUATE SCHOOL * BOX 43844 - 00100 NAIROBI
16 SEP 2019

REUBEN MURIUKI
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Department of Educational Communication & Technology
Registrar (Academic) Att; Mrs. Lucy Njenga

Supervisor

1. Prof. Samson Ondigi
   C/o Department of Educ. Comm. & Tech.
   KENYATTA UNIVERSITY

2. Dr. Elizabeth Oigo
   C/o Department of Fashion Design & Marketing
   KENYATTA UNIVERSTY

RM/cao

Committed to Creativity, Excellence & Self-Reliance

APPENDIX H: Research Authorization

APPENDIX I: A Letter Requesting for Research Permit from National Council of Tertiary Education Accra, Ghana

Educational Communication and Technology Department,
School of Education,
Kenyatta University,
Nairobi, Kenya.

29th October, 2019

The Executive Secretary,
National Council of Tertiary Education,
Accra, Ghana

Dear Sir,

PERMISSION TO COLLECT RESEARCH DATA IN SELECTED COLLEGES OF EDUCATION IN THE ASHANTI REGION OF GHANA

I am a Ghanaian and PhD student of Kenyatta University, Nairobi, Kenya. I am conducting a research entitled, **"Technological Teaching Strategies of Vocational Skills Tutors and Students Creative Skills Achievements in Fashion Design in Ghana Colleges of Education"**.

I write to officially seek for permission to conduct a research in some selected colleges of education in the Ashanti region.

Attached is the photocopied of my research authorization letter from Kenyatta University graduation school.

I hope my permission will be given the needed consideration and attention.

Thank you.

Yours faithfully,

VIDA ADZO AMEGBANU

APPENDIX J: Research Permit from National Council of Tertiary Education

NATIONAL COUNCIL FOR TERTIARY EDUCATION
(NCTE)
REPUBLIC OF GHANA

In case of reply the number and date of this letter be quoted
My Ref. No.
Your Ref.

P. O. Box MB 28
Accra - Ghana
GA-452-0871

14th November, 2019

Dear Sir/Madam,

INTRODUCTORY LETTER – VIDA ADZO AMEGBANU

We wish to introduce Vida Adzo Amegbanu, a PhD student of Kenyatta University, Nairobi, Kenya.

Miss Amegbanu is conducting a research entitled, **"Technological Teaching Strategies of Vocational Skills Tutors and Students Creative Skills Achievements in Fashion Design in Ghana Colleges of Education".** In this regard, She wants to collect data from Colleges of Education in Ashanti Region.

It would be appreciated if the necessary assistance is accorded her to enable her collect the required data.

Yours faithfully,

DR. EMMANUEL NEWMAN
HEAD, PLANNING, RESEARCH AND POLICY DEPT.
FOR: EXECUTIVE SECRETARY

Distribution

The Principal: All Colleges of Education in Ashanti Region

Office Location: GA-452-0871 East Legon—Trinity—IPS Road (Lagos Avenue). Adjacent Chartered Institute of Bankers Ghana, Accra - Ghana
Tel: +233-302-918790 +233-20-9989414 +233-20-9989415