

Exploring the Impact of Pedagogical Strategies in Drawing Instruction on Drawing Skills Satisfaction: A Case Study on Ghanaian Communication Design Students

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This study delves into the understanding of Communication Design students' perceptions of drawing instructions and drawing skills satisfaction. While Ghanaian communication design students have good performance in design skills they seem to have low confidence in drawing skills. Two questionnaires about learning strategies and satisfaction, based on Motivational Strategies for Learning Questionnaire (MSLQ), were issued to 220 participants. The results show that there was no significant difference between students' perception of drawing teaching strategies based on gender. Also, the drawing learning strategies components demonstrated positive, significant relations with each other. Besides, the result showed that the Drawing Practice ($\beta = .323$, $t = 6.379$, $p < .05$) and Assessment of Drawing ($\beta = .210$, $t = 3.435$, $p < .05$) with Class Level factor ($\beta = -.097$, $t = -3.779$, $p < .05$) negatively and significantly with student's drawing skills satisfaction.

Keywords: Drawing, pedagogical strategies, design process, drawing satisfaction



INTRODUCTION

Drawing as a means of expression dates back into antiquity and it is the simplest and most efficient means of communicating visual ideas, and it helps us to understand the world, think, feel, shape and communicate ideas, it is fun, accessible and invaluable (Makowska, 2012; Quillin & Thomas, 2015). Morkeh (2011) echoes that drawing was the first means of expression and representation invented by man and it is still extremely valid both as an artistic representation of reality and as a means of expressing pure imagination. Gilbert (1998) notes that drawing is a universal language and is usually understood wherever one goes. To be able to draw means above all, to be able to see, to understand rationally, to feel emotions and to master the techniques which fully allow us to express our thoughts and moods (Morkeh, 2011).

According to Ernest (2006), drawing is one of the most important branches of study in schools of art and architecture as well as schools of engineering and some others of sciences. Consequently, drawing forms the basis of all art creations. Ernest further notes that the pedestal of visual art is the performance and skill of drawing and perfection is achieved through constant practice and dedication. Drawing is the essence of the artist and designer's expression. As an effective means of communication and thinking, drawing operates on many levels and it is important for the artist and designer to not only comprehend these differences, but to also achieve a certain level of skill in the discipline of drawing. Ferguson (1992) identifies three useful kinds of drawings in creative design groups: the thinking sketch, the talking sketch, and the prescriptive sketch. He notes that thinking sketch is used to focus and guide nonverbal thinking, whilst talking sketches is considered as drawing surface in support of the group discussion. Drawing is considered as generative learning activity that promotes student engagement (Ligorio et al., 2016). With all its importance and relevance to education, Hill (2015) notes that as learners progress through their education drawing activities are least considered and utilized in teaching and learning in most academic disciplines.

Using Drawing in Design Process

Design is a complex domain that requires innovation. The success of a design output depends not only on the skills and capacity of the designer, but a non-routine problem-solving activity that relies strongly on human experience, knowledge and to a large extent on creative thinking using sketching (Hsiao & Chou, 2004). The creative design process is characterized by the exploration of a large number of solutions extending beyond the designer's own knowledge (Gero et al., 1988).



Of particular importance in the first stages of creative design process is the process of searching for design alternatives using drawing and sketching which has a positive effect in expanding the range of design ideas.

According to Hodge (2008), there are multiple uses of sketching in the design process; rapid concept development, basic composition, client communication, visual exploration and refining visual solutions. On rapid concept development, Hodge notes that sketching is an excellent way to quickly explore concepts and bases for composition or layout. Tovey (1989) has indicated “the existence of drawing permits the designer to consider several alternative design ideas simultaneously”.

van der Lugt (2002) stated that idea generation techniques, designers tend to make extensive use of sketching when generating design ideas. Design thinking researchers regard this activity of sketching as a means to spur creative thought. The interaction that designers have with their sketches is seen as essential to creativity in design activity.

Purcell et al (2006), reckon that a characteristic of the design process in all areas of design is the use of a number of different types of drawings. The different types of drawings are associated with different stages of the process with one type, the relatively unstructured and ambiguous sketch, occurring early in the process. Designers place great emphasis on the sketch often because it is thought to be associated with innovation and creativity. Because of this emphasis researchers have also begun to focus on the sketch and its role in design.

Anzai (1991), also notes that, in those disciplines concerned with the design of objects or artifacts, there has been a long tradition of using drawings and other pictorial forms as part of the design process. This can involve the use of quite abstract diagrams, such as functional diagrams or sketch plans and sections, in the early part of the design process, together with unstructured forms of pictorial representation such as sketching. In addition, less abstract and more realistic visual representations such as perspectives may also be employed. In the later part of the process highly structured and detailed representations are used to document a design that has been developed. Designers also spend considerable time looking at representations of previous designs that act as precedents in the design process.



On the benefits of sketching in the design process, Preston (2010) comments that sketching allows the designer to dig deeper to evolve stronger and more innovative concepts that are fluid and trigger more ideas. Preston further notes that the activity of sketching lend itself to and taps into various situations and environments for inspirations to the designer. Although, the new technologies have come to complement the way sketching is done and developed, Preston (2010) holds a different view to the use of the new technologies. He posits that “holding a pencil in your hand that gets your creative juices flowing in a much different way than holding a mouse”. In such situation, we will be looking at the psycho-motor skills and cognitive skills development together and related. Preston noted that sketching allows the designer to see “some ‘artistic’ influences in your design work”. Preston further argued that “the more you practice, the better you will become at sketching”. Continuing with the benefit of sketching, Preston (2010) notes a strong correlation between strong ability to sketch with the ease of generating varied ideas on paper on the spur of the moment. He also noted that could also lead to developing varied skill-set.

Studies carried out in the western hemisphere have widely explored the role of drawing in visualization. However, in Ghana little attention has been paid on this phenomenon. Though, a few studies in the field have explored other factors on drawing skills and ideation (Appiah & Cronje, 2012). Regarding the existing gap in the drawing education and drawing skills satisfaction, this study examined the relationship between gender and studio pedagogical strategies on drawing skills satisfaction in communication design students in Ghana. In this study, the relationship between the indicators of studio practice, i.e. instructor feedback, drawing assessment, drawing practice, drawing in design process with drawing skills satisfaction was particularly examined.

Background to the Study

The Department of Communication Design offers undergraduate communication design program which provides two years (four semesters) of mandatory foundational drawing courses scaffold for first and second year students. With an average student’s enrollment of the drawing courses hovering around 160 - 180 per semester for each year level, around 88-95% of the enrolled students pass each drawing course each semester. This represents a typical refer rate between 5 -12% for the drawing courses in general at the Department of Communication Design.



The objective is to improve learners' drawing skills essential in their future professional design work – to communicate and through a language of a drawing, awareness to develop design concepts. The studios' purpose is also to facilitate their creative discoveries and to develop independence from computers at the early stages of the ideation process. Consequently, an appropriate set of subjects with clearly determined tasks have been selected. These subjects require from learners drawing lines and shapes, evolution of thoughts by sketching and deeper analysis of form and space. The students are methodically taught basic anatomical drawing using basic shapes, including measurement and manipulation of components, perspective, object drawing and shading; as well as composition. Each drawing course is taught over a 13-week semester via weekly 2-hour lectures and 4-hour independent study (with tutorials). There are weekly live studio model drawing and submissions assignments. In addition, drawing and sketching are mandatory in concept development stages (design process) for all communication design studio projects. A journal/portfolio is kept by student to showcase the research, work on mind-map and methodological work-in-progress. There are three assessment items: a mid-semester examination, in-studio sketching and assignments, and a final portfolio examination. For the assignments, students participate in an independent study to generate drawings and rapid-visualizations.

However, it has been observed over the recent years that the Communication Design students show lackadaisical attitude toward drawing over time. The Design students do not see sketching as fun, do not consciously and rigorously apply it in the design process (brainstorming about topic, idea development (thumbnails), comprehensive and final design) and rather students finish their final design work before attempting to do the thumbnail sketches (Appiah and Cronjé, 2012), resulting in weak final design concept with little originality. Consequently, the present study tried to probe into the factors that may cause Drawing learning anxiety and satisfaction among communication design students in KNUST.

Research Questions

The study therefore runs on the following research questions:

1. Are there any significant difference between the mean scores of males and females on the drawing teaching strategies and drawing satisfaction questionnaire?
2. What relationship, exists between drawing practice, assessment of drawing, assessment feedback, drawing in design process and drawing skills satisfaction?



3. To what extent, if any, is the drawing skills satisfaction influenced by the drawing practice, assessment of drawing, assessment feedback and drawing in design process, when examined simultaneously?

METHODOLOGY

Drawing on statistical survey of quantitative study, two questionnaires about learning strategies and satisfaction, based on Motivational Strategies for Learning Questionnaire (MSLQ), were issued to 220 participants. The population for the study was the department of Communication Design in the Faculty of Art. The total population for this research was therefore 615. In order to produce a credible data for analysis, the researchers decided to use all the year classes thus from first year to final year to help in evaluating the soundness of the assumptions.

A purposive sampling method was adopted for this study. The main rationale in selecting the sampling technique was based on the accessibility and availability of participants. The sample of the study covered all the undergraduate year levels (year one to year four) in the Department of Communication Design. Out of a target population of about six hundred students (615), two hundred (200) responded to the questionnaire. Forty six (46) students from level one hundred, forty three (43) student from level two hundred, sixty (60) from level three hundred and fifty one (51) from level four hundred. The questionnaire used to elicit responses from students to answer the research questions and these were put together by the lead investigator. They were intended to ascertain opinions, perceptions and satisfaction from the population. The respondents were assured of their anonymity and confidential treatment of the information acquired. This established rapport between the researchers on one part and respondents on the other end, leading to accurate, frank and comprehensive information being obtained. The response instructions mentioned categorically the modes of the completion of questionnaire. The researcher specifically indicated that students select the number that represents their preferred response using a scale provided. In respect of biographic information, the personal data of respondents were sought for, analyzed and interpreted.

The survey questions were pre-tested to help the researcher ascertain the relevance of some of the questions in meeting the objectives of the study. This also helped the researcher to get abreast with the data collection procedure involved in the study.



The wording of questions was carefully done to acquire the requisite information with minimum distortion. The language was simple, clear and precise not ambiguous, suggestive, leading, antagonistic or embracing in order not to invade privacy. Double barreled questions were equally avoided. All questions requiring one mode of response were grouped together.

Administering of Questionnaire

The questionnaire was grouped into two sections of which SECTION A comprises of demographic information about the respondent. This includes, the gender, age and academic level. SECTION B is made up of close-ended questions with five options of responses to choose from. These questions have been grouped into five topics, which are; Drawing practice, Drawing feedback, Drawing within the design process, Assessing drawing, Students satisfaction. The final questionnaires were distributed to the respondents drawn from the sampled population.

Data Collection

All questionnaires were delivered by the researchers for maximum response rate and effective collection of the questionnaire. The researchers, took the students through the questionnaires and gave them ample time to response after studio. Data collected from the field was assembled, synthesized, critically evaluated (analyzed). The data collected were coded and entered into the computer. They were analyzed using the Statistical Package for Social Sciences (SPSS) software.

Reliability statistics

This approach is used to know if the questionnaires given out was reliable and can solve the problems stated. The Cronbach's alpha was used to determine the validity of the results gathered. The questionnaire used to collect data was designed in line with the objectives of the study. As can be seen from the table below, it has a Cronbach's alpha of .867 which indicates a very good reliability statistics.

Table 1: Reliability Statistics

Variable	Description	No of items	Cronbach Alpha
Assessment	Extent of assessment of drawing exercises. e.g. Lecturers assess each stage of the process and our drawing and sketches. (+)	5	.580
Drawing Practice	Extent to which teachers help and direct drawing exercises. e.g. Lecturers give us training in drawing practices... (+)	7	.786
Assessment Feedback	Extent of provision of feedback on work. e.g. Lecturers give feedback to us regarding... (+)	3	.725
Drawing in Design Process	Emphasis on the use of drawing in design process. e.g. Lecturers ensure that we take keen interest in the idea development... (+)	4	.552
Drawing Satisfaction	Extent of satisfaction in drawing activities. e.g. My level of satisfaction with drawing and sketching in the creative process. (+)	2	.564

Data Analysis

The relationships between the variables of drawing teaching strategies and scale of satisfaction were investigated using Independent t-test and Pearson product-moment correlation coefficient. Multiple regression analyses were also conducted to find out if there were any teaching strategies-satisfaction associations. All analyses were tested for significance at the .05 level.

RESULTS

Demographic information

One hundred and ninety eight (198) students from the Department of Communication Design of the Kwame Nkrumah University of Science and Technology (KNUST) were involved in this study. Table 2 presents the information regarding their demographics. The respondents were made up of one hundred and eighteen (118) males and eighty (80) females. This represents 59.6% for male and 40.4% for female respectively. The respondents to the questionnaire fall within four age groups. The four age groups and the number of students who fall in each age group are shown in the table below.

As shown in table 2, thirty-four (34) of the respondents thus (17.2%) are aged between 18 and 20. The majority of them, a hundred and thirty-two (132) of the respondents thus (66.7%) are aged between 21 and 23. Twenty-four (24) respondents, representing 12.1% are aged between 24 and 26 while eight (8) respondents, representing (4.0%) are aged 27 and above. This information is displayed as well in the bar chart below.

Table 2: Demographic Information for Participants

Variable	Frequency (n)	Percent
Gender		
Male	118	59.6
Female	80	40.4
Age of participants (years)		
18-20	34	17.2
21-23	132	66.7
24-26	24	12.1
Above 27	8	4.0
Level of Participants		
100	46	23.2
200	41	20.7
300	60	30.3
400	51	25.8

Forty-six (46) of the respondents were in their first year of the four year program. This constitutes 23.2%. Level 200 students amounted to forty-one (41), representing 20.7%. The highest number of respondents are in their third year of the four year program. There were sixty (60) of them, representing 30.3%. The final year students involved in the study were fifty-one (51) in number amounting to 25.8% of the sampled population.

Research 1: Are there any significant difference between the mean scores of males and females on the drawing teaching strategies and drawing satisfaction questionnaire?

The drawing teaching strategies were compared according to gender: male or female students. The first hypothesis, H_{O1} was tested with independent sample t-test at 95% confidence level and results are presented in Table 3 Based on gender ($p = 0.261$), the null hypothesis was also not rejected

and therefore concluded that there was no significant difference between students' perception of drawing teaching strategies based on gender.

Table 3: Mean Difference in Perceptions of Drawing Teaching Strategies Based on Gender (N Male = 118, N Female = 80)

Gender		N	M	SD	Mean Difference	T	df	P
Drawing Practice	Male	118	3.6610	.62362	.09673	1.064	196	.586
	Female	80	3.5643	.63397				
Assessment Feedback	Male	118	3.6412	.79905	-.04626	-.417	196	.677
	Female	80	3.6875	.71225				
Drawing in Design Process	Male	118	3.7479	.51836	.18538	2.45	196	.015
	Female	80	3.5625	.52546				
Drawing Assessment	Male	118	3.6610	.48605	.04602	.613	196	.886
	Female	80	3.6150	.56279				
Drawing Satisfaction	Male	118	3.4944	.50961	.09852	1.369	196	.189
	Female	80	3.3958	.47761				
OVERALL	Male	118	3.6411	.43853	.07608	1.200	196	.261
	Female	80	3.5650	.43669				

Evaluation of the dimensions indicated that there was significant difference in students' perception for one dimension – drawing in design process. In this dimension, males had better perception (Mean for Drawing in Design Process = 3.7479) compared to females (Mean for Drawing in Design Process = 3.5625).

From the findings it was clear that the students generally have a positive perception of drawing. The general mean of 3.6 shows that they have a positive perception. While the males have a mean of 3.66, the females have a mean of 3.56. To find out if there is a significant difference between their perceptions of drawing, the results of the ANOVA test was used. The test was performed

with a significance value of $\leq .05$. For it to be concluded that there is a significance difference between students' perceptions of drawings, the significance value has to be less or equal to 0.05. However, in this reported research, the value was .289, which is way higher than .05. It therefore can be concluded that art and design students do not differ in their perception of drawing.

Furthermore, there is general positive perception for assessment of drawing, feedback and drawing practice with total mean range of 3.24 to 3.64 is very close to "Agree" on the questionnaire which is denoted by 4. The males registered a mean of 3.66 while the females registered a mean of 3.61, all indicating positive perceptions. This is an indication that there is no significance difference between the perceptions of art and design students regarding drawing feedback.

It is clear from results that the students generally have a positive perception of their attitudes toward drawing, however, the males and the females differed on the Drawing in Design Process variable.

Research 2: What relationship, exists between drawing practice, assessment of drawing, assessment feedback, drawing in design process and drawing skills satisfaction?

Correlations were analyzed between the two components as well as across variables and their corresponding components. Table 4 shows Pearson product moment correlation results for all continuous variables.

Drawing Learning Strategies

Drawing Learning Strategies components demonstrated positive, significant relations with each other, ranging from small to medium correlations. Students' perception of overall drawing practice was significantly positively, moderately related to each of the sub-components, instructor feedback ($.452, p < .001$), drawing assessment ($.461, p < .001$) and drawing in design process ($.498, p < .001$). Instructor Feedback was also moderately correlated with drawing in design process ($r = .454, p < .001$) and drawing assessment ($r = .345, p < .001$). Drawing in design process had a medium relationship with drawing assessment ($r = .543, p < .001$). What does this mean in real terms to the overall aim?

Student's Drawing Satisfaction

Student's drawing satisfaction component demonstrated positive relationships with each of the drawing learning strategies components, ranging from small to medium correlations. Student's drawing satisfaction was positively associated with drawing practice ($r = .548, p < .001$) and assessment feedback (.288, $p < .001$), again was moderately associated with drawing in design process (-.430, $p < .001$) and was also positively associated with drawing assessment (.438, $p < .001$).

Table 4: Correlation between Drawing Satisfaction and other Variables

Variable	Mean	SD	1	2	3	4	5
Drawing Satisfaction	3.46	.499**	1				
Drawing Practice	3.62	.628**	.548**	1			
Assessment Feedback	3.66	.764**	.288**	.462**	1		
Drawing in Design Process	3.67	.528**	.430**	.498**	.454**	1	
Drawing Assessment	3.64	.518**	.438**	.461**	.354**	.543**	1

** Correlation is significant at the .01 level (2-tailed)

Research 3: To what extent, if any, is the drawing skills satisfaction influenced by the drawing practice, assessment of drawing, assessment feedback and drawing in design process, when examined simultaneously?

A multiple linear regression analysis was performed with Drawing Satisfaction as the dependent variable and Drawing teaching strategies, class level (freshmen, sophomore, junior and senior) and gender as the independent variables. This initial regression analysis provided an examination of all variables entered in the regression equation, regardless of their statistical significance. Collinearity diagnostics from the regression output revealed no collinearity problem. In addition, assumptions were met regarding linearity, homoscedasticity and normality of residuals.

Table 5 reports the results of the multiple regression analysis on the predicted measures and dependent variables. Using enter method, a significant model emerged ($R^2 = .402$), $F(6, 191) = 21.414$, $p < .001$). All six predictors, the independent variables explained 40.2% of the variance in Drawing Satisfaction.

Table 5: Summary of Regression Results with Gender, Class Level, Teaching Strategies toward Drawing Entered for Full Model Explaining Drawing Satisfaction

Independent Variable	B	SEb	B	Partial	t	P
Drawing Practice	.305	.055	.385	.370	5.505	.000
Drawing Feedback	-.041	.044	-.063	-.067	-.935	.351
Drawing in Design Process	.137	.070	.145	.140	1.956	.052
Drawing Assessment	.165	.067	.171	.175	2.463	.015
Gender	.004	.059	.004	.005	.066	.948
Class Level	-.100	.026	-.222	-.265	-3.799	.000
F = 21.414		Multiple R = .634				
df = 6/191		R square = 40%				
p = .000		Adj. R. Square = 38%				

Subsequently, a Stepwise regression analysis was used to determine the individual contribution of drawing teaching strategies in predicting drawing satisfaction. A reduced model explaining the predictive ability of drawing teaching strategies is presented in Table 6. The independent variables of the study show strong relationship with the dependent variable. The variables when compared on an individual basis, the two variables were positively and statistically significant, with the value of Drawing Practice ($\beta = .323$, $t = 6.379$, $p < .05$) and Assessment of Drawing ($\beta = .210$, $t = 3.435$, $p < .05$) with Class Level factor ($\beta = -.097$, $t = -3.779$, $p < .05$) negatively and statistically significant with Satisfaction scale.

Table 6: Summary of Regression Results with Drawing Teaching Factors Entered for Final Model Explaining Drawing Satisfaction

Model	Independent Variable	B	SEb	B	t	P
1	Drawing Practice	.323	.051	.407	6.379	.000
	Class Level	-.097	.026	-.216	-3.779	.000
	Assessment of Drawing	.210	.061	.218	3.435	.001
F = 41.200		Multiple R = 624				
df = 3/194		R square = 39%				
p = .000		Adj. R. Square = 38%				

The regression coefficient for Drawing Practice Option is 0.323, which suggests that design students' drawing satisfaction is sensitive to Drawing Practice Option and increase by 32% due to it. The regression coefficient for Assessment of Drawing is 0.210, which suggests that design students' drawing satisfaction is sensitive to Assessment of Drawing and increase by 21% due to it. The regression coefficient for Class level is -.097, which suggests that design students' drawing satisfaction is sensitive to Class Level and decrease by 9.7% due to it. That is to say students' interest in drawing decrease over time.

Discussion

The use of drawing has been the subject of considerable discussion in art and design instruction but there is little agreement on the particular nature that it should take. This is due to the fact that there are countless different applications of drawing depending on how it is created and the intended use. This is perhaps due to the suppleness of the drawing as a teaching, learning and communication tool, that it can be useful in such different disciplines as fine art, design, science, engineering and architecture. The object of this study was to ascertain the key constituents of drawing instructions within the art and design studio pedagogy and consider their impact on students' drawing skills satisfaction. Grounded on this review of the literature the authors concluded on an established constituents of drawing *instruction* making it plausible for educators and learners to build on the structure that is vital in improving teaching and learning of drawing.



Undoubtedly, drawing is an opening for learners to express, ideate and reflect on their creativity, from peers, instructors, and targeted audience. It is expected that art and design educators may use this study as a lens when reviewing their own practices and ask questions such as: Should drawing in the ideation process be abstract or concrete representation and what would be the impact on communication and visual concept development if we moved from one to the other? The key findings of this paper in relation to the components of the drawing instruction (assessment, drawing practice, drawing in design process and assessment feedback) may act as a reference to those intending to use, or currently operating, it within their own teaching practice.

These four components are the core aspects of the drawing instruction found across the literature, and each of them has a number of potential applications. While there are no inherently “hard” or “rigid” applications, there are areas that point to a best practice approach where possible. Adams (2013) points to the potential value of formative feedback on drawing in art and design education and the creative process provides a good scenario for undertaking formative assessment within the design studio.

Similarly, the assessment can impact on the student’s perceptions of the drawing skills satisfaction and it may be worth considering who will be assessing for the student’s drawing skills and what the students gain from assessment and instructor’s feedback (Adams, 2013). An issue that is apparent from the literature is that students can become uncertain of the purpose of the assessment of drawings (Eshun & de Graft Johnson, 2010; Eshun & Adu-Agyem, 2010) and whether it is purely for formative purposes or if it affects the student’s scores. It is equally important when applying innovative teaching and learning method to ensure that the students are aware of the impact on their drawing, academic performance and creativity development. Consequently, whether it is scored separately or considered as part of final design work, students show a preference for formative assessment and process-focused feedback over summative and product-focused feedback especially within the design studio (Adams, 2013).

Since the length of the drawing practice varies according to individual studio programs, consequently, it is up to each student to decide the duration of their independent drawing study bearing in mind each student has special drawing needs and limitations. Similarly, whether the drawing practice takes place during regular drawing studio sessions or within the creative design



process or at home, skill satisfaction will best be decided by the student and will be dependent on the drawing format and project requirement.

Scaffolding has been discussed previously and can often be a factor that, while not directly part of the drawing practice, can influence student success in later stages of the course. Ego as a factor is difficult to define due to its nature, and it is important to ensure that the drawing practice is not a platform for experts to demonstrate their knowledge but rather that it is a learning opportunity for the student. Tutor instruction to the drawing practice is important to ensure that all those providing feedback are aware of the current stage and requirements of the students (Adams 2013; Rose. 2014; Wekesa, 2013), Earlier studies have argue that increasingly as technology permeates through the creative design process, design educators' awareness is needed on emerging technologies and how they can be integrated in students' drawing practices (Schenk, 2005: Appiah & Cronje, 2010 and Makowska, 2012).

Findings of the study reveal that students are slightly satisfied with the overall drawing practice, all the dimensions of pedagogical strategies, their satisfaction level is also not at high level and they willingness to put efforts is also at moderate level. When further inquired it is revealed that pedagogical strategies have significant impact on the drawing skill satisfaction of design students, which conjectures that if educational institutions wants to improve students drawing satisfaction of their students, better provision of assessment would be a good tool to do so. Drawing practice is the dimension that is associated with the students' drawing skills satisfaction. It means that drawing practice are the physical manifestation of the lessons learnt and experience are matters of consideration for students. Students don't rate drawing on the basis of gender and physical appearance but on the grounds of quality of education and interaction.

Satisfaction is also having positive and significant relationship with students' willingness to put more work efforts during the creative process. If the students' satisfaction level is high they will be willing to put even more efforts then their routine efforts. It can be concluded that better provision of quality teaching and learning environment contributes towards increased level of students' satisfaction and which ultimately increases their willingness to excel in their design studies.



Schenk (2005) and Moore (2015) conclude by affirming the importance and benefits of drawing to art and science education and that the inadequate drawing skill and experience will affect the creative potential of the student.

Conclusion

Thus, while, generalization must be made cautiously since our sample was restricted to one tertiary institution in Ghana, from the discussions above, the researchers can confidently conclude that students of the Communication Design have positive perception about drawing in their creative process. This include their teacher's attitude towards their drawing, drawing feedback, and assessment of drawing in the department and satisfaction with their drawings.

Limitation and Future Implementations

This exploratory study targets satisfaction of only communication design students, more studies should be conducted from the point of view of other stakeholders like instructors, students, employers, etc. Furthermore, we have considered students of only one academic department, future comparative studies may be conducted across various art and design disciplines so that policy making strategies could be derived.

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