

ASSESSING THE PERFORMANCE OF STUDENTS WITH DIFFERENT BACKGROUND AND STUDYING CERAMICS

Samuel Nortey, Robert Amoanyi & Emmanuel Eyam Donkor
Faculty of Art, Kwame Nkrumah University of Science and Technology
Accra Rd, Kumasi, Ghana
e-mail : sammynort@gmail.com

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Abstract: For almost a decade, the Ghanaian educational system for ceramics studies at the tertiary level has allowed senior high students with various academic backgrounds to specialize in ceramics at the tertiary level. Though a very laudable idea, there has yet to be an assessment of their performance in a studio-oriented ceramic programme to inform policy and institutional decisions. This study, therefore, assesses the performance of ceramic students with diverse academic backgrounds. The study used quantitative and qualitative approaches, revealing that students with no background in art struggle with ceramic studio assignments, especially those that studied Home Economics and General Arts. Though students with a science background appear to do well in the soil science-related courses of ceramics, there are still challenges with art concepts and art history. It is recommended that there is a need for counseling and orientation of mind for students who did not choose ceramics as their first choice and those without art backgrounds.

Keywords: Ceramics, Performance, Academic Background, Assessment, Ghana.

1. Introduction

Like any other country that places a premium on education, Ghana has a well-defined educational structure that shapes students from kindergarten to tertiary education. According to (Bodjawah et al., 2019), education through art is one of the areas in which society comes to understand a subject matter through interactions between visuals and text (p. 133). Therefore, it calls for interested individuals with a passion for understanding the phenomenon of the subject and striving toward the field of study. (Hulleman et al., 2016) reiterated that for one to perform better and engage with learning and attendant issues, there must be academic background motivation. This means artists must be on top of their practice to ensure that their education is well informing and capable of transforming society. To do this, we need motivated people to study various disciplines, such as ceramics, and be drivers of education through their practice .

In Ghana, the educational system has the primary schools for six years, then the Junior High School level for three years, after which pupils write the Basic Education Certificate Examination (BECE) before entering the Senior High Schools (SHS). The students specialize in General Science, Business, General Arts, Agricultural Science, and Technical and Visual Art at the SHS level. These specializations at the SHS level define the programme trajectory at the tertiary level. For example, those who studied Visual Arts at SHS cannot choose science-related programmes at the university or study engineering. Likewise, science students at SHS cannot choose art at the tertiary level.

However, within the last decade, there has been a review of admission criteria that allows non-art students at SHS to study Ceramics. The study of ceramics in Ghana has been classified under art. Students who studied Visual Arts at the SHS level gain admission to study art-related courses at the university. In addition, most of these students admitted to studying ceramics initially chose something other than it as their first choice. Careful observation reveals that most do not even choose ceramics but gain the opportunity to be admitted into the programme when

their grades need to be more competitive for their first choices. The nature of the ceramics programme is studio intensive, as well as understanding soil chemistry and its industrial applications. (Norrey & Bodjawah, 2015) confirmed from empirical studies that most students in art studio programmes have enormous challenges with ideation, conceptualization, and infrastructure. Significantly, there is a significant cause of anxiety and stress when students transition from senior high to university studies. This stress and fears are not well managed and affect students' performance and achievement at the tertiary level (Lowe & Cook, 2003) (Yorke, M. & Longden, B., 2004)).

This study is very significant in three ways. First, the results provide very vital information to policy formulation on how to teach students who do not have a background in ceramics but are currently studying ceramics. Secondly, it offers the opportunity to see the challenges of students of diverse backgrounds and their performance in studying ceramics. Finally, it provides the opportunity for other institutions running ceramic programme to be well informed on background studies and their effects on a good performance at the tertiary level and provide students with equitable learning opportunities. This paper, therefore, looks at assessing the performance of students with different backgrounds in their study of ceramics at the University level (Pujianto et al., 2019).

1.1 Theoretical Framework

The theoretical framework for this study stems from background motivation vis a vis performance and getting the best out of students studying ceramics at the university. There are various theoretical perspectives regarding background motivations and their influence on academic performance. This paper works with the theoretical framework that students' cognitive abilities and background knowledge are among the best single predictors of academic success (Kuncel et al., 2004). The theoretical relationship between prior background knowledge and its ability to study ceramics is under broader perspective discussion. For example, the expectancy-value theory by (Eccles & Wigfield, 2002) looks at the capability of the student to perform a task, whether with background knowledge or not. We extract from the expectancy-value model, which incorporates three values; intrinsic, utility, and personal importance, and places the discussion within the framework of "How much can your background influence the study of ceramics" or "How much are you motivated to study ceramics."

2. Methods

The study employed qualitative and quantitative research approaches to address the literature gap. (Lyons, 2006) explained that combining quantitative and qualitative research approaches provides a more rigorous understanding of students' decisions, attitudes, and backgrounds. The population for the study was first to final years BSc and BFA ceramic students. A purposive sampling technique was used to select the various levels of years, and 196 students were sampled using a simple random sampling technique. We collected data through observations, interviews, and surveys from the respondents. A survey of 4 sections was designed, piloted, validated, and distributed to participants. All participants consented through discussions and penned their signatures to be part of the study. In all, 170 students responded to the survey. The completed surveys were coded and analyzed using the Statistical Package for Social Scientists (SPSS vs 17). We conducted the chi square test in order to establish significant relationships between the variables. For these tests, we drew crosstabulations for each variable and performance. Additionally, we retrieved the students' Cumulative Weighted Average (CWA) from the department's examination officer to confirm the reliability of students' examination results and other performances.

2.1 Limitations

Though the study employed statistical analysis to assess the significant relationship between the various variables, other stakeholders used in promoting good performance in academic settings were not studied. For example, teachers and how they handle both studio and theory courses were not part of the study. The study did not include their teaching styles, availability of resources such as infrastructure, state of equipment, and materials. The study focused on the students' general backgrounds and how they responded to available teaching styles and infrastructure conditions. Another limitation of the study was using only the cumulative weighted average (CWA) as an indicator of performance. (Walton & Spencer, 2009) affirmed that grades are the key performance indicators, but they do not necessarily show how much a student knows or their creativity.

3. Results And Discussion

3.1 Sample Characteristics

The study sampled 170 BSc and BFA Ceramic students, and out of sampled respondents, 35.88% (61 respondents) offered ceramics in SHS, and 64.12% (109 respondents) did not study ceramics prior to their tertiary education. Regarding gender, 67.06% (114 respondents) are males, and 32.94% (109 respondents) are females. (Nortey, S., 2022) explained the gender disparity of ceramic studies in Ghana and how other factors, including lower numbers, lead to their marginalization in contemporary and academic spaces. Out of the 170 respondents, 34.12% (58 respondents) are first years, 44.71% (76 respondents) are second years, 4.12% (7 respondents) are third years, and 17.06% (29 respondents) are fourth years. We recorded lower numbers among third years because, per the programme structure, third years students intern during the second semester to have industrial field experience. Regarding the grading system, the first class ranges 70 percent and above, the second-class upper ranges 60-69, the second class lower is 50-59, and the pass category is 49-45. A CWA below 45% is a fail, and such students go on probation for two semesters. After the supplementary examination for them, if the student cannot pass, they are repeated regardless of which academic level.

3.2 Nature of Programmes at SHS

The Senior High School (SHS) education system in Ghana is discipline-oriented. Successful candidates from the three-year Junior High School (JHS) programme are stratified into three-year discipline programme at the SHS level. At the end of the three years of SHS education, the students sit an external examination, enabling them to access tertiary education. In Ghana, reflecting a broader consensus, these students aim to enter tertiary institutions, especially universities, to sign a profession such as ceramics.

The programmes at the SHS have core and elective subjects. The core subjects are mandatory for every student at SHS, irrespective of the elective course discipline. The elective subjects distinguish the various course disciplines.

The core subjects are English, Mathematics, Integrated Science, and Social Studies.

For instance, in science-disciplined courses, students study elective (add) mathematics, chemistry, physics, and biology. Business discipline has business management, costing, and accounting. The General Arts program has economics, geography, literature in English, elective (add) mathematics, and many more. The Home Economics discipline has management in living, general knowledge in art, clothing and textiles, food and nutrition, and other subjects depending on the SHS choice.

The Visual Art programme is the only one with Fine Art subjects, painting, picture making, sculpture, graphic design, and ceramics. Under the Visual Art programme, these subjects demand appropriate infrastructure, requisite materials, studios, and equipment to facilitate understanding and development of skills. The ceramic subject, for example, requires a potter's wheel for throwing basic table wares, a studio for hand-building activities and a kiln for

firing, and a laboratory to test on different clay soils.

3.3 Background and Performance

The research project was interested in studying the significant effect of students who studied visual art or other course disciplines at SHS and performance in ceramics. Table I presents the performance of the students who offered ceramics at SHS and those who did not by accessing their Cumulative Weighted Average (CWA) grades. Of the 61 respondents who offered ceramics in SHS, 14.8% (9 respondents) are in first class with a CWA of 70. Above, 44.3% (27 respondents) are in 60 to 69 CWA (second class upper), 37.7% (23 respondents) have a CWA between 50 to 59 (second class lower), and 3.3% (2 respondents) are in 49 and below (pass). Of about 109 respondents who did not offer ceramics in SHS, 17.4% (19 respondents) are in 70. Above CWA (first class), 39.4% (43 respondents) are in 60 to 69 CWA (second class upper), 41.3% (45 respondents) are in 50 to 59 CWA (second class lower), and 1.8% (2 respondents) are in 49 and below (pass). While the majority of the respondents who read ceramics in SHS (61) are in 60-69 CWA (44.3%), a significant majority of the respondents who did not read ceramics in SHS (109) are in 59-50 CWA (41.3%). This result shows that background information plays a crucial role in a better understanding of the ceramics programme. Though the number of non-ceramic background students are doing well, a significant number still need help understanding the course, especially in studio ceramics. The critical assessment shows a higher number of second-class lower students for those with non-ceramic backgrounds than those with ceramic backgrounds, as evident in table I.

Table 1. Background and Performance

What is your current CWA?			
Did you offer art at SHS?		Number of students	Percent
yes	70 and above	9	14.8
	60-69	27	44.3
	59-50	23	37.7
	49 and below	2	3.3
	Total	61	100
no	70 and above	19	17.4
	60-69	43	39.4
	59-50	45	41.3
	49 and below	2	1.8
	Total	109	100

Source: Fieldwork 2021

3.4 Gender, Level of Year and Performance

Table II presents the performance of the gender category of students in terms of CWA. Of the 114 male respondents, 19.3% (22 respondents) are in 70 and above CWA (first class), 43.9% (50 respondents) are in 60 to 69 CWA (second class upper), 33.3% (38 respondents) are in 50 to 59 CWA (second class lower), and 3.5% (4 respondents) are in 49 and below (pass and fail). Of the 56 female respondents, 10.7% (6 respondents) have a CWA of 70 and above (first class), 35.7% (20 respondents) have a CWA ranging between 60 and 69 (second class upper), 53.6% (30 respondents) are in the 50 to 59 category (second class lower). Interestingly, none are in the pass-and-fail category. The results showed that females' performance is comparatively lower

than that of males. Most male respondents are in 60-69 CWA (43.9%), while most female respondents are in 50-59 CWA (53.6%). Four males had a CWA of 49 and below (pass and fail), but no female had a CWA of 49 and below (pass and fail). Interestingly, in other disciplines outside the art fraternity, many studies have shown that females have a stronger motivation for academic activities than males (Asimaki & Vergidis, 2013; Carvalho, 2016; Richardson & Watt†, 2006). Significantly, ceramic studies in Ghana are different. However, the results of females in the 49% and below category are better than that of the males. The percentage of those in the first-class category is far lower than that of the males. A little over 10% of the females are in the first-class category, while approximately 20% of males are in the first-class category. This result indicates a support system for females if we desire females to have a progressive studio and academic path in ceramics (Ponimin & Guntur, 2020).

Table 2. Performance stratified by Gender

What is your current CWA?			
Did you offer art at SHS?		Number of students	Percent
yes	70 and above	9	14.8
	60-69	27	44.3
	59-50	23	37.7
	49 and below	2	3.3
	Total	61	100
no	70 and above	19	17.4
	60-69	43	39.4
	59-50	45	41.3
	49 and below	2	1.8
	Total	109	100

Source: Fieldwork 2021

Table III shows the performances of students from 1st year to 4th year in terms of their CWA. Of the 58 first-year respondents, 10.3% (6 respondents) are in 70 and above CWA (first class), 56.6% (34 respondents) are in 60 to 69 CWA (second class upper), 27.6% (16 respondents) are in 50 to 59 CWA (second class lower), and 3.4% (2 respondents) are in 49 and below (Pass). Accounting for 76 second-year respondents, 6.6% (5 respondents) are in 70, and above CWA (first class), 36.8% (28 respondents) are in 60 to 69 CWA (second class upper), 56.6% (43 respondents) are in 50 to 59 CWA (second class lower). There are no results for students within the 49% and below category. Most of the male respondents are in 60-69 CWA (43.9 percent).

The inference could be drawn from the results that there is a steady drop in CWA for students as they go through the various academic levels. (James, R. et al., 2010) confirmed that first-year students compared to other academic levels, have more explicit objectives, are more consistent in working throughout the semester, and manage their academic workload more strategically, despite feeling overwhelmed by the task they have to complete (p.4). One can explain that the first-year courses in ceramics and even in most courses are basic introductions to various programme subjects. Consequently, it entails foundational courses such as Introduction to Ceramics, CEA 160 Drawing Fundamentals, CEA 158 Traditional and Contemporary Ghanaian Ceramics, CEA 156 Introduction to Basic Design, and many more.

Significantly, the first-year courses are preparative grounds for the students to understand the task ahead of the intensive studio practice nature of ceramic studies. Though a

critical analysis of the content does not broadly reflect the factor diversity of the various backgrounds (Norley et al., 2013), it is comparatively easier to understand by students with various backgrounds. In this light, the performance of the students of the two categories is comparatively better. Results for the second and third years showed fascinating patterns. A majority of the results fall between second-class upper- and second-class lower divisions. Findings from the qualitative approach (observations and interviews) confirm myriads of challenges for students as they progress through the academic years. Students do experience financial difficulties while studying and often have to look for paid jobs to supplement their studies (Crisp et al., 2009; Longden, 2006; Lowe & Cook, 2003). According to (Cleary-Holdforth, 2007; Field, S., 2012) , the need for these students to find work to support their studies has implications for the rates of non-attendance at lectures. Within the Ghanaian context, every first-year student must pay full tuition before formally being admitted to start university studies. For continuing students, there are options of paying in bits, and these students have to look for extra-paid jobs to pay their tuition fees. Students who cannot pay fees are either not allowed to write their final exams or their results are only released once full payment is made. It becomes more daunting for ceramic students who may have to buy other materials to complete their studio assignments and projects (Ponimin, 2018). Therefore, ceramics' first years develop attitudes toward their academic excellence and shape their future engagement by improving their perceptions about themselves (Hernandez-Pina, F., Rosario, P., Tejada, J.D., Claire, P. & Lara, E., 2006; Lerdpornkulrat et al., 2018).

Interviews also alluded that most of these students take on other responsibilities, such as positions in religious and student political associations, as they progress. Such positions require tremendous time and effort, which obviously affect their studies. (Sequeira I & Daly P, 2012) asserted that there is a long tradition of extra-curriculum activities in higher education, and since these are non-academic, the activities happen outside the classroom. The usual fun and exuberance attached to such activities by the students profoundly affect their academic performance. Students remarked, "I spend more time on organizing my extra-curriculum activity than coming to the studio to do my assignments." Other students also see it as an avenue to build their leadership skills.

Table 3. Performance of Students stratified by Year Level

What is your current CWA?			
Year		Frequency	Percent
1st year	70 and above	6	10.3
	60-69	34	58.6
	59-50	16	27.6
	49 and below	2	3.4
	Total	58	100
2nd year	70 and above	5	6.6
	60-69	28	36.8
	59-50	43	56.6
	Total	76	100
3rd year	60-69	1	14.3
	59-50	5	71.4
	49 and below	1	14.3

	Total	7	100
4th year	70 and above	7	24.1
	60-69	17	58.6
	59-50	4	13.8
	49 and below	1	3.4
	Total	29	100

Source: Fieldwork 2021

3.5 Programme studied at SHS and studying Ceramics

Results on the significant relationship between what students studied at SHS and their performance in ceramics provided significant results. We conducted x tests and drew crosstabulations for each variable and performance. More than 20% of all the crosstabulations have an expected count of less than five; therefore, we used Fisher’s exact test. Results in Table IV show a significant relationship between studying visual art at SHS and good performance at studying ceramics at the university. Out of the 28 respondents who are in first class grade, 25 of them offered visual art during their SHS studies. Also, of these first-class students who studied visual art, 19 of these students offered ceramics during their SHS programme. It shows how background plays a vital role in the studying of ceramics. Suppose we desire to have other backgrounds studying ceramics at the tertiary level. In that case, we must design a flexible introduction that enables students to understand the basic concepts of art, principles, elements, and the manipulation of ceramic materials.

It is also evident in Table IV that comparatively, students who studied Home Economics during SHS and specializing in ceramics at the tertiary level have the most challenges in terms of performance. Out of the 13 respondents who have a Home Economics background, their best performance has been second class lower (50-59) range. For such students, their elective subjects at SHS (Nutrition, Management in Living, Textiles, and Clothing) do not have any bearing on the ceramic courses at the university. These students need help understanding soil chemistry and have challenges with clay manipulation and concept development for their ceramic studio assignments. General Arts students follow; they have at least one student in the first-class region, seven in the second class upper, and 16 in the second class lower regions. Science students have comparatively good results. Out of 23 respondents who studied science at SHS and now offering ceramics, one has first class, 17 are in the second class upper, and five are in second class lower. The study of ceramics has both soil chemistry and art studio component, which seems to play in favour of students with a science background and studying ceramics at the tertiary level. These students placed well to perform better in courses such as colloid chemistry, vitreous state, phase equilibria, and soil chemistry. Such courses facilitate understanding the clay soil, the formulation of glaze recipes, and the composition of clay bodies. They, however, need more art history and studio practice.

From the preceding discussions, we understood that 128 respondents out of the 170 sampled affirmed that they would not be practicing ceramics after they graduate from the programme. This finding should concern artists, educationists, and policymakers greatly. It inadvertently affects resources and the under-utilization of skills and human resources in the ceramics and art industries.

To substantiate this finding, (Nortey, S., 2022) observed how ceramic students migrate into other professions and work in non-technical spaces such as banking, telecommunication sectors, and available positions in the civil servant sector upon graduation.

Table 4. Significance of Variables

Variable		What is your current CWA?				Total
		70 and above	60-69	59-50	49 and below	
Year	1st year	6	34	16	2	58
	2nd year	5	28	43	0	76
	3rd year	0	1	5	1	7
	4th year	17	7	4	1	29
Total		28	70	68	4	170
Gender	male	22	50	38	4	114
	female	6	20	30	0	56
Total		28	70	68	4	170
Which programme did you do at SHS?	science	1	17	5	0	23
	visual art	25	46	34	3	108
	home economics	0	0	13	0	13
	general art	1	7	16	1	25
	business	1	0	0	0	1
Total		28	70	68	4	170
Did you offer ceramics at SHS?	yes	9	27	23	2	61
	no	19	43	45	2	109
Total		28	70	68	4	170
Is your current programme your first choice?	yes	20	16	5	2	43
	no	8	54	63	2	127
Total		28	70	68	4	170
Are you able to submit your studio assignment/lab work on time?	yes	25	45	25	2	97
	sometimes	3	23	39	1	66
	always after extension	0	2	4	1	7
Total		28	70	68	4	170
Do you desire to work as a practicing artist after graduation?	yes	20	15	6	1	42
	no	3	29	35	2	69
	maybe	5	26	27	1	59
Total		28	70	68	4	170

Source: Fieldwork 2021

3.6 Significance of the Various Variables

Table V shows the computed Pearson Chi-square values and Fisher's Exact Test value for each variable with their various P-values. The study finds an association between the Year of students and their performances in terms of CWA. The study also finds no association between the gender of students and their performances in CWA. The result in the table also indicates that students' performances in CWA depend on what they studied at SHS. Also, students' performances in CWA are independent of whether students are offered Ceramics or not. Students' performance depends on the programme they choose as their first choice.

The results, as shown in the table, also indicate that students' performances depend on their attitudes toward assignments. As shown in the table, students' performances are associated with students' desire to work as practicing artists after graduation. (Norley et al., 2013) revealed a similar interesting result of students who had no background in ceramics and were unsatisfied with the study of ceramics and intimated that if given the opportunity, they would not choose to study ceramics again. The findings showed that poor students' attitudes towards assignments account for their low performances, which can be attributed to low knowledge background in art, specifically ceramics. As evident in fig. 3, although students generally have challenges in studio work, students who have little knowledge of ceramics or have not mastered the manipulation of clay seem to have the most challenges. In an empirical study by (Norley & Bodjawah, 2015) (Febriari & Ponimin, 2018), the authors explained that art students' reluctance to complete their studio assignments on time needs to be critically examined. Both quantitative and qualitative data, derived from surveys and interviews, were used to examine students' attitudes and investigate their experiences. The study revealed that although procrastination is a challenge to students, as suggested by empirical studies, students procrastinate because they struggle to conceptualize and ideate concepts. When students have yet to be exposed to developing ideas based on the principles and elements of design, there abound to be challenged with their studio practice. Similarly, such students need help understanding the corresponding art history to study contemporary ceramics. Nonetheless, some non-art students have been brilliant in understanding these concepts of idea development, although they are minimal (Taufik Akbar, & Wisnu Prastawa, 2018).

Table 5. Significance of Variables

	Chi Square			Fisher's Exact	
	Value	df	P-value	Value	p-value
Year	66.810	9	0.000	54.586	0.000
Gender	8.095	3	0.044	7.388	0.053
Which programme did you do at SHS?	47.390	12	0.000	44.749	0.000
Did you offer ceramics at SHS?	0.862	3	0.835	1.039	0.798
Is your current programme your first choice?	44.634	3	0.000	41.711	0.000
Are you able to submit your studio assignment/lab work on time?	29.405	6	0.000	28.611	0.000
Do you desire to work as a practicing artist after graduation?	43.237	6	0.000	38.771	0.000

Source: Fieldwork 2021

4. Conclusion And Recommendations

This study points to the fact that background knowledge is critical in studying ceramics at the tertiary level. Students offered art at the SHS appear to perform better than those who read non-art subjects at the SHS. (Nortey et al., 2013) strongly supported the idea of background motivation as it serves as a platform for students' understanding of the ceramic programme. Looking at the current issue of allowing all other programmes at SHS to offer ceramics at the tertiary level, there must be a system to orient these new students to understand the clay material and the attendant art history that comes with studying ceramics. In addition, our pedagogy must consider diversities in the classroom and a well-designed teaching strategy to cater to most of the deficiencies of those who do not have an art background.

The following recommendations are made;

1. Whereas this current admission practice is maintained, faculty must bear in mind the diversity of the class and design teaching strategies and tactics that would cater to the inadequacies of the various backgrounds of the admitted students to study ceramics.
2. Since the ceramic programme is a conglomeration of studio practice and soil science, the study recommends a tutorial system to be supported by studio assistants to take first-year students through clay manipulation, building techniques, and throwing exercises on the potter's wheel.
3. Faculty must design a financial support system for students to access. This paper suggests a system where students are given some employment within the school, such as providing cleaning, gardening services, and many more, and the allowances they receive can support their studies
4. For better performance, the faculty should consider admitting students who chose ceramics as their first choice. Findings show that such students are more motivated and interested in ceramics studies and obviously perform better. In the case where admitted students in ceramics did not choose ceramics as their first choice, there must be intensive and continuous counseling to orient their minds and set their minds right on ceramic studies.

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