COMMON PROBLEMS ENCOUNTERED IN THE TEACHING OF CERAMICS IN GHANAIAN SECONDARY SCHOOLS

A Long Essay submitted to the Board of Post Graduate Studies in partial fulfilment of the requirements for the Post Graduate Diploma in Art Education

BY

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C E R T I F I C A T I O N

Certified that this essay is an account of the candidate's own research.

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TITLE : COMMON PROBLEMS ENCOUNTERED IN THE TEACHING OF CERAMICS IN GHANAIAN SECONDARY SCHOOLS

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Ceramics, just like all the other visual arts, has not been given the desired attention as some other subjects, under the school system in Ghana. In fact, most scholars of all ages have once ever considered art as unacademic. For example, one learns from History that Aristotle, the Greek Philosopher draws a distinction between liberal subjects that is, studies for the free citizen, and illiberal subjects - the Arts and Crafts practised by slaves; and he would exclude from the curriculum of the free man's children anything which would make the individual "mechanical", and wage earning oriented.

Now, however, with the rapid evolution in industrialization the condescending belief that a vocational linkage for human perception is something for the poor and dullwitted has been seen to be fallacious. Trully, many modern nations have realized that a country's technological and industrial advancement cannot be fully achieved if the arts of that country were left to shatter. Surely, a country that surrenders her creative expressions and abandons the foundations of her arts and crafts will live to regret it.

In the light of the above, one realizes that in the ongoing Ghana's educational reforms, whereby great emphasis is placed on the acquisition of vocational skills, the visual arts have dully been recognized. Yet, owing to certain problems that come by the way of teachers some of the arts such as ceramics, do not receive a healthy attention.

This essay therefore, stressing ceramics more as a vocational subject, seeks to identify problems hindering the teaching of ceramics in the secondary schools and suggests or recommends solutions to some, if not all, of these problems.

The research methodology adopted here is the descriptive and analytical methods. Data collected were through on-the-spot interviews of some ceramics teachers in some secondary schools, as well as questionnaire sent to other teachers in selected schools.

The questionnaire were however, not for a case study of schools that responded but to help get a broad view on problems relating to the teaching and learning of ceramics in schools in Ghana. The analysis thus, has been generalized.

This essay has been divided into chapters. Chapter one covers the introduction which discusses ceramics as a Visual Art and a vocational subject. In chapter two, one finds the literature review about the subject. Chapter three takes a look at the general overview of the teaching of ceramics in secondary schools. Chapter four then, deals with analysis of questionnaire answered by teachers. Finally, the last chapter - five, summarises, offers suggestions, and concludes the essay.

THE PROBLEM AND ITS SETTING

A. STATEMENT OF THE PROBLEM

Ceramics as a subject of study, is greatly encouraged in the current educational reforms where emphasis is on the acquisition of vocational skills. Clay, the basic material for ceramics is also abundant in Ghana. However, ceramics is not a popular subject at the school certificate examination in many secondary schools.

B. OBJECTIVES

The objectives of the essay are:

1. To assess the teaching of ceramics in selected schools in Ghana
2. To identify inherent problems and suggest ways of solving them.

C. ASSUMPTIONS

It is assumed

1. That the teaching of ceramics in secondary schools is not encouraging because of certain problems encounteredby teachers.
2. That students are not seeing the value of the subject so do not take its learning seriously.

D. IMPORTANCE OF THE STUDY

1. The study will expose the flaws and impediments in the teaching of ceramics in Ghanaian secondary schools.
2. It will help revive the sinking image of ceramics as an art form that can be taught and offered at the school certificate examination
3. It will kindle students' interest to take the study of ceramics more seriously.

E. DELIMITATION

For convenience, studies were concentrated on schools in the Central Region; with some questionnaire also sent to ceramics teachers in some other schools in all the other regions.

F. DATA COLLECTION

Data was collected through:

1. The administration of questionnaire to ceramics teachers in selected schools.
2. Personal interviews with some ceramics teachers.
3. Consultation with some lecturers in the ceramics section of the College of Art, U.S.T.; and also the use of books, journals and theses located in the College of Art, U.S.T., and other libraries.
4. Suggestions and opinions of respondents obtained from both questionnaire and personal interviews were included in the summary and suggestions.

G. LIMITATIONS

1. Some of the questionnaire sent to teachers were not responded to. Out of 48 questionnaire sent to respondents only 29 received attention. Out of this, 3 respondents stated their schools do not offer ceramics.
2. Because secondary schools were on holidays the author couldn't get some pictures he needed for illustration.

H. ABBREVIATIONS

1. M.S.L.C. - Middle School Leaving Certificate
2. J.S.S. - Junior Secondary School
3. S.S.S. - Senior Secondary School
4. S.C.E. - School Certificate Examination
5. 'O' Level- Ordinary Level
6. 'A' Level- Advanced Level
7. B.A. - Bachelor of Arts
8. S.T.C. - Specialist Training College
9. P.T.A. - Parent-Teacher Association

I. DEFINITION OF TERMS

1. Pre-heating : The very beginning of firing wares where very little heat is needed to help make drying of wares thorough.

2. Grog : Powdered fired clay

3. Chemical water : Chemically combined water which is the result of the hydrating process or hydrolysis by which clay is formed.

4. Physical Water : Ordinary water added to clay to make it become more plastic and workable.

5. Washing : The process of soaking clay to become liquid and seiving it to remove unwanted materials.

6. Turning tool : A metal tool used to trim clay ware especially one thrown on the potter's wheel.

7. Kidney tool : A ceramic tool shaped like the kidney

8. Green state : Unfired clay ware

9. Bisque : Ware which has had one firing and unglazed.

10. Glost : Firing glazed ware

11. Scooping : Removal of core clay from a modelled solid piece to give it lighter weight.

12. Mortar : Plaster sand mixed with water to become paste used to join bricks in building a kiln.

13. Kiln furniture : Refractory materials used for packing wares in a kiln for firing (eg. bats, props etc.)

14. Bats : Flat refractory materials on which ceramic wares are packed for firing.

15. Props : Cylinderically shaped refractory materials used to support the bats for firing (anything that does the same work).

16. Foot : The ring at the base of a cup or bowl which rests on the bat when packed for firing.

CHAPTER ONE

I N T R O D U C T I O N

1.1 CERAMICS - A VISUAL ART AND A VOCATIONAL SUBJECT

Ceramics is one of the Visual Arts, and, in order to talk about it more effectively, it first needs to be considered within the general frame work of the concept "Art" as a single subject entity taught and studied in secondary schools.

Art as a school subject, has suffered in terms of its teaching and learning. There has often been the false notion that Art is not a subject for the academically inclined. A few years ago, it was a common thing in the primary school for example, for the Art period to be used for firewood fetching, games, or some other purpose. This situation arose presumably for two reasons. In the first place, most teachers believe rather unfortunately that Art implies drawing only. Thus, a teacher who cannot draw is not one to teach Art or even direct any activity towards the learning of it. Secondly, Art has never been a subject that counted towards certification in the elementary school, especially during the days of the M.S.L.C., nor the 4-year Teacher Training College. Heads of such schools and institutions did not bother themselves whether it was taught or not. For marks, pupils usually bought items like brooms and locally made grinding bowls, and baskets to show. In some cases teachers accepted eggs and rats from pupils. Thus, the study of art depended on the innate ability of the child rather than on the guiding principles of art education, and as Kojo Fosu puts it, "Art, then, was not considered as an academic subject that could be taught and learnt but rather, unfortunately, as a chance study solely dependent on talent."[1]

In any case, while some teachers ignorantly and injustly stifled the artistic potentials in such pupils, other pupils entered secondary schools

and offered art as one of their examination subjects. It is at this stage that art assumes some kind of importance. At this level, students are required to select and present work in three art disciplines, which would be noted later, in order to satisfy the requirements of the West African School Certificate Examination.

It must however be emphasised that examination in this context does not imply that students study for examinations only, but that, the mere mention of it is incentive enough to motivate students to be more serious with a particular subject which they might deem unimportant.

Under the J.S.S./S.S.S. programme, Visual Art has been subdivided into - General Knowledge, Basketry, Ceramics, Graphic Design, Leather Work, Picture Making, Sculpture, and Textiles. In the old secondary school system however, emphasis was mostly on Drawing and Painting, Graphic Design, Sculpture, ceramics, and Textiles. Picture making as appears in the S.S.S. programme for example was an aspect of Drawing and Painting. There was also, until recently, no theory paper in the S.C./G.C.E. 'O' level like the General Knowledge in Art Paper that S.S.S. students have. For practical examinations students are made to choose from specific areas. Under Drawing and Painting, one has to select from either composition of still-life objects; analytic study from nature; or figure drawing. In Textiles, one selects from batic; tie/dye; printing; and in some schools, weaving: The choice however, depending on students interest.

In the case of sculpture, the choice is between carving and modelling. In Graphic Design, students choose from poster designing, lettering and calligraphy some of which may be expressed in such forms as success and greeting cards; and book binding. In ceramics one either produces works which are wheel thrown or moulded, or hand built. Thus, in all, students are examined 'O' level) in three areas.

It must be stated here that it was not until three years ago that a compulsory theory paper was introduced as Art Paper One. Prior to this change Paper One carried questions on composition in still-life objects and drawing from Nature, from which students answered questions on one part only. Graphic Designing and Imaginative Composition also alternated for Paper Two, while Paper Three catered for Figure Drawing as an alternative to Sculpture, Ceramics, Textiles and the others.

Currently, the new compulsory theory paper on History and Appreciation of Art goes with two other papers chosen from any section or area as the student wishes.

'A' level Art has always had an optional theory paper on Appreciation. 'A' level students thus, have three options in all since they also choose two out of the many disciplines discussed earlier on.

It must be stated that, for one reason or the other, ceramics is often left out when students are choosing options to be examined in. This then, is the task that the essay seeks to research by means of interviews, library research and personal experience in the classroom, to analyse the situation and identify inherent problems that hinder the progress of ceramics in Ghanaian schools. It is intended also to suggest possible solutions to pertinent problems that teachers and students of ceramics face, that leads to its unpopularity as an examination subject at both 'O' and 'A' levels.

The topic is tackled from both the teaching and learning points of view so as to offer a fair view of the issue at stake, find out how students' interest in the subject can be generated and sustained in order to gain confidence to choose and to be examined in it; as well as how to promote its teaching.

As a vocational subject, ceramics has an edge over the other art disciplines in terms of its raw material - clay, which is readily available countrywide. In addition, the products of indigenous ceramics is seen every-

where in Ghana because the art is practised all over the country. In terms of patronage there are few questions even over imported ceramics in Ghana, and it is obvious that people have greater need for ceramic wares than paintings in their homes. Similarly, though wood is abundant, and a few hand-made tools at little or no cost are enough among other things for the sculptor to establish himself in business, how many Ghanaians want to own sculpture pieces, is a question to be answered.

In this direction, ceramics has a lot to offer. There is no doubt that a potter will always be in business because the local people need his products for everyday use. Unlike the painter or sculptor who most often works alone until he can train someone to acquire his skills and be competent in sculpting, the potter has jobs for others the moment he sets up a studio, without necessarily having to train them. Clay preparation for example needs no skilled labour. Studio potters like Ekem and Mbro, located at Winneba in the Central Region employ a lot of hands - both skilled and unskilled, and this, offer them jobs for a living. In addition, clay is not toxic and it is in abundance locally. Bricks and roofing tiles which are durable and cheaper can be produced locally with almost 100% locally obtainable raw materials as well as locally manufactured equipment and tools. Also the acquired technology in ceramics could be used to improve upon indigenous skills as well as traditional production methods.

Of course, it must not be misconstrued that the above analysis is intended to disqualify the other disciplines as authentic vocational potentials. The arguement rather is that, ceramics, comparatively, looks more viable in terms of self employment and industrialization as far as its raw material base is concerned. This essay therefore, seeks to throw more light onto ceramics as a subject of study so that it can be seen in its right perspective, as a potential area of employment opportunity that can offer prospects for development, for both the student and the country as a whole.

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1. KOJO FOSU, "Intellectual Dimensions of Ghanaian Visual Art of the Last Decade". Presentation at N A F A C '92 Colloquiom, Great Hall, U.S.T., Kumasi, 1992, P.1

2. WEST AFRICAN EXAMINATION COUNCIL, "SC/GCE Syllabus", 1989-92

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

Literature specifically on problems facing the teaching of ceramics especially in secondary schools in Ghana is very limited.

However, a little has been written on the problems that face the teaching of art in general. This presupposes that ceramics as an art subject has a fair share in these problems.

Many scholars are of the opinion that the major problem facing art education in schools has been the initial lack of respect for art as an academic subject.

One of these scholars is Kojo Fosu (1991).[1] According to him, Edusei (1991) states that the early stages of the teaching of art in contemporary Ghanaian schools were unconventional. In the primary schools, in particular, art was more informally taught than all the other subjects. It formed part of the extra-curricula activities rather than the scheduled course on the regular time table. It was frequently a punitive devise meted out to recalcitrant school children who were condemned by school teachers to produce art and craft objects like baskets. When it was decided to be taught only those childred judged by the teacher as talented were selected for art lessons; and, in fact, teaching merely meant giving art materials to the children and ordering them to just draw. In this wise, the learning of art was devoid of any systematic guiding principles. Everything depended on the child's own initiative. Art therefore, was not considered to be any useful subject worthy of academic pursuit.

Supporting the above, Agyei (1990)[2] also argues that in Ghana, despite official pronouncements on the relationship between art and culture, visual art has always been considered a frill in the school programme rather than a priority area of study. For this reason little attention has been given to its teaching and learning. He further states that art has therefore

been of little or no importance to most educational leaders in Ghana.

Opoku Asare (1987)[3] similarly states that though art has occupied a place in the school and college curriculum, it has neither been accorded the respect it deserves nor recognized as an important aspect of general education. Rather, art has either been regarded as a frill, hobby or subsidiary subject even at the training college and university levels.

Kodua-Manuh (1979)[4] laments the situation of art and observes that, the seriousness with which students learn other subjects changes when it comes to art. Hardly do they use their free periods to practise art, and those who do it are discouraged with remarks like "art is a waste of time", "we don't need art".

Certainly, such misguided assumptions on art has created an in-built inferiority complex for those who chose to study the subject. The negative psychological complex is even carried over to the advance study and practice of art as a profession.

On ceramics specifically, Kweifio (1981)[5] states that, very little research material is available on the teaching and learning of pottery in Ghana and existing literature from the few research reports on problems of teaching and learning of art in Ghanaian schools makes very little reference to pottery in general education. This situation is very unfortunate because pottery is one of the many traditional art forms widely practised in Ghana and that even its inception into school education has been a fairly long time.

Opoku-Asare (1987)[6] writes that Modern developments in art education began at Achimota in 1927. In 1936 H.V. Meyerowits, a sculptor and designer became the art and craft supervisor. He developed the art department into a school of art and craft offering a three-year specialist course based on indigenous African and Ghanaian traditions. The curriculum included basketry, pottery, terra cotta modelling and brick and tile making.

Kweifio-Okai (1981)[7] also states that pottery education was introduced as far back as 1938 when Mayerowits included among other things pottery education in the general school curriculum. The pottery section established at Achimota was headed by one David Cardew and Michael Cardew. Thus, the training of pottery teachers began at Achimota and was in 1952, transfered to the College of Technology in Kumasi where teachers were trained as two year specialists. From here the course was transfered to the premises of the former post-secondary school of Winneba now Specialist Training College, where among other things teachers are trained as Diplomates in Art Education.

According to Geological Survey reports Ghana has many clay deposits scattered all over. Among the major deposits are those at Saltpond, Bokaso, Kibi, Okwan, Awaso, Cape Coast, Anfoega, Mfensi and Anyinasi. Inspite of the abundance of clay, other factors make problems persist with the teaching and learning of ceramics in schools.

Quarm (1991)[8] on his part identifies the unavailability of basic conventional materials and equipment in Ghana as the major problem besetting the teaching of ceramics in schools and colleges. Another problem is the shortage of qualified personnel for teaching ceramics in the junior and senior secondary schools. He however expresses the feeling that ceramics is a potential field in which one can acquire vocational skills for livelihood. It is thus, gratifying to note that pottery/ceramics is being given due recognition in the current educational reforms.

Ampofo Ayeh (1981)[9] writes that the ceramic industry has a promising future with regard to self sufficiency in production. He states further that a country's level of industrialization depends basically on the iron and steel industry and when ceramics is well catered for it has the advantage of playing the role of supplying refractories and other essential products to service the iron and steel industry.

Mettle Nunoo (1978)[10] states that if the right attitude is accorded the traditional arts in school education, learners would appreciate the economic possibilities attached to developing various rural art forms like pottery.

Blege (1986)[11] commenting on the aims and objectives of vocational education states among other things that one way of achieving the aims of education is to provide the individual with a vocational skill that will enable one live in the current changing world.

Ponsioen (1968)[12] also states that when the most educated youth are provided with a suitable training and work opportunities they work hard to win and to develop their talents and potentials.

It is therefore realized from the foregoing that ceramics has a potential which learners can exploit as a vocation to make a living. It is also found that literature on the topic is mostly on Art in general. With this background literature, this essay seeks to tackle the problems facing the teaching of ceramics specifically. Opinions and suggestions of ceramics teachers and experts, and the author's personal experience would be employed to show how teachers could be relieved of some of their frustrations and make the study of ceramics in secondary schools more interesting.

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CHAPTER THREE

BROAD OVERVIEW OF THE TEACHING OF CERAMICS

3.1 PREAMBLE

Prior to the current reforms in general education in Ghana, art in general was not accorded any importance as a course of study, as has been noted earlier on, in the elementary and secondary education. In fact, in the primary schools particularly, the teaching of art was not given any healthy attention. The production of art and craft works like, brooms and baskets were often meted out to offending school children as punitive measures. Thus, from its infancy the intellectual content of art was jeopardized. The sicuation further, in advance stages of learning, created a complex of inferiority in students who even had the impulse to pursue the learning of art, as in the secondary schools, the few students who offered to study art were laughed at.

Now, however, the country's general education is being changed and redirected with the idea or objective of trying to equip students with basic technical and vocational skills which would enable them to earn a living once they leave school. For this reason, many schools now teach art more seriously.

In the secondary schools, art is a compulsory subject for all forms one to three students. At this stage all aspects of the subject are taught but whether this is done at all, is another issue altogether. Such all round teaching is to expose students to all that the subject entails so that students would be able to know which subjects to choose to study for their final examination.

It must however be noted that, the teaching of art differs from school to school for many reasons. This may happen either because the art teachers are specialists in certain fields only and therefore cannot teach other areas; some schools may not have the requisite materials for certain

disciplines and so would not teach those; or, that there would be no versatile art teachers in the school to offer the particular needed expertise. For these and other reasons to be discussed in the essay, some aspects of the subject suffer to the advantage of others. Most often than not, in this regard, it is ceramics that lags behind. Other reasons for this unfortunate situation include the fact that many schools do not have art teachers whose special field is ceramics; the absence of some essential equipment like the potter's wheels for thrown wares; and most importantly, kilns to fire the wares. In effect therefore, ceramics is not a popular subject and is not taught in many schools in the country.

3.2 CERAMICS TEACHERS

Even though ceramics is not very popular in many schools as said above, a few schools are well known for it and have well established ceramics sections in their Art Departments. Notable among these are Ebenezer and Achimota Secondary Schools, both in Accra, Adasadel in Cape Coast, and Winneba Secondary School, Winneba.

Ceramics teachers are mostly products of the Specialist Teacher Training College (S.T.C.) Winneba who hold the Teachers' Diploma in Art Education and most often have specialised in ceramics.

Other teachers are products of the University of Science and Technology, Kumasi, who hold the Diploma in Rural Art and Industry; or B.A. in Art with ceramics as the special field. There is also another category of teachers from U.S.T. who hold the Post-Graduate Diploma in Art Education.

Generally, the number of art teachers vary from school to school. While some have only one art tutor, others have two, three, or even four, especially, in sixth form schools. List of schools that responded to the questionnaire, number of art teachers in each school, number of ceramics teachers and their qualifications, is however provided in Table 1.

In schools where there are many art teachers, they teach according to their areas of specialization as for example in the case at Technology Secondary School in Kumasi and Achimota College in Accra. Of course, specialized teaching (with regard to visual arts) is very strong in the S.S.S. programme. The 'Visual Arts' is an integral part of the vocational skills programme. It is however, an elective subject with twenty one (21) periods a week alloted to it on the time table. It is noteworthy here that, in such an economic situation of judicial use of expertise and knowledge, the teaching of ceramics, particularly in the upper forms benefits students who select it for their examinations.

3.3 SCOPE OF WORK

The teaching of ceramics broadly involves both theory and practicals. The theory aspects deals with identification of ceramic products, raw materials, equipment and tools. It also deals with analytical study of products; historical and contemporary ceramics; raw material classification, prospecting and testing. There is also care and maintenance of tools and equipment, material processing techniques, and methods of production. In addition, terminologies are also taught.

Practical ceramics on the other hand deals with clay digging, clay preparation, drawing and designing, creating articles with clay, decorating, drying and firing, and glazing. The chart overleaf is a vivid summary of topics for S.S.S. visual arts.

Since most schools do not have potters' wheels, much of their practical work involves ceramic sculpture. Students are taught to model or build forms with clay slabs, as well as by the coiling and pinching methods. In schools where potter's wheels are available, students are taught to throw pots in addition to modelling exercises.

Summary of Topics for S.S.S. Visual Arts

YEAR ONE	YEAR TWO	YEAR THREE
1. Ceramics as a vocation	8. Tools, equipment and raw materials	17. Raw materials, equipment and tools
2. Tools, equipment and raw materials	9. Drawing and Designing	18. Drawing and Designing
3. Drawing and Designing	10. Creating objects with clay - Brick and Tiles (Press Mould)	19. Hand building and construction
4. Creating objects and Finishing	11. Ceramic sculpture	20. Wheel Work
5. Decorating and finishing	12. Wheel Work	21. Kiln Firing - Electric Kiln
6. Drying and firing (Indigenous)	13. Decorating and Finishing	22. Glazing and Glaze Defects
7. Glazing	14. Kiln construction	23. Establishing small-scale ceramic industry
	15. Firing-Wood Kiln	24. Costing, Pricing and Marketing
	16. Glazing	

It is common for students especially those in lower forms to model masks, figures of domestic animals, household utensils, and other free forms that portray students own impressions of things around them. Such works are only significant as rudimentary exercises in ceramics for beginners. They are mostly left unfired and end up being destroyed and clay recycled after class discussion, appreciation, and sometimes, marking has taken place. Occasionally, one or two works are kept for record purposes.

It must however be stated that works like flower vases, pots and other free forms produced by students in upper forms are comparatively better than those of the beginners. Such works are usually fired where possible and kept in the art department.

REFERENCE

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CHAPTER FOUR

ANALYSIS OF DATA

This chapter deals with analysis of data from questionnaire sent to ceramics teachers in various secondary schools in Ghana. The table below shows schools that responded to the questionnaire. It includes the number of art teachers in each school, number of ceramics teachers and their qualifications. Schools marked with astericks do not offer ceramics. The analysis involves only the twenty-six (26) schools which offer ceramics.

TABLE 1

List of Schools, Art Teachers, Ceramics Teachers and their Qualifications

	Name of School	Art Teachers	Ceramics Teachers	Qualification
1.	Nsaba Secondary School - Agona Nsaba	2	1	Dip.
2.	Swedru Secondary School - Agona Swedru	2	1	B.A.
3.	Winneba Secondary School - Winneba	2	1	Dip.
4.	St. Francis Secondary School- Oda	2	1	Dip.
5.	Oda Secondary School - Oda	2	1	Dip.
6.	Akwamuman Secondary School - Akosombo	2	1	B.A.
7.	Osino Secondary School - Osino	1	1	Dip.
8.	Abuakwa State College - Kibi	3	1	Dip.
9.	Afantsepem College - Cape Coast	2	1	Dip.

Table 1 (cont'd)

	Name of School	Art Teachers	Ceramics Teachers	Qualification
10.	Mfantseman Girls - Saltpond	2	1	B.A.
11.	St. Monicas - Mampong Ashanti	2	1	M.A.
12.	Eduman Secondary School- Eduman	2	1	Dip.
13.	Ebenezer Secondary School- Accra	3	1	Dip.
14.	Technology Secondary School - Kumasi	4	2	P.GD/B.A.
15.	* Ghana Secondary School- Bawku	1	-	-
16.	Sunyani Secondary School- Sunyani	3	1	Dip.
17.	Achimota College - Accra	7	-	-
18.	Twene Amanfo Secondary School - B/A	2	1	Dip.
19.	Assin Manso Secondary School - Manso	2	1	Dip.
20.	Ghana National College - Cape Coast	2	1	B.A.
21.	Adisadel College - Cape Coast	4	2	Dip./B.A.
22.	Odumaseman Secondary School - B/A	1	1	M.A.
23.	* Ghana Secondary School - Koforidua	3	-	-
24.	Nungua Sec.School - Nungua	2	1	Dip.
25.	Asamankese Secondary School	2	1	Dip.
26.	* Kpando Sec. School- Kpando	2	-	-
27.	Ahmadiyya Sec. School-Potsin	2	1	Dip
28.	Wesley Grammar - Dansoman	3	1	P.GD
29.	Bechem Presec. - Bechem	1	1	Dip.

TABLE 2 : Aspect of Ceramics Taught

Subject	Frequency	%
Pottery	26	100
Brick & Tile	0	0
Total	26	100

Table 2 deals with specific subject areas ceramics teachers teach. The table shows that only pottery is taught by respondents.

TABLE 3 : Ceramics Studio

Studio Facility Response	Frequency	%
Yes	5	19.2
No	21	80.8
Total	26	100.0

Table 3 shows whether schools of respondents have studios for ceramics. As indicates in the table, 5 respondents representing 19.2% say that their schools have studios; while 21, representing 80.8% say they do not have.

TABLE 4 A & B : Respondents that have tools and equipment

TABLE 4 A : Tools respondents have in their schools

TOOLS:- 1. Turning 2. Modelling 3. Sackboard/Pin 4. None		Frequency	%
A	1	5	19.2
B	2	0	0.0
C	3	1	3.8
D	1, 2	0	0.0
E	1, 3	8	30.8
F	2, 3	6	23.1
G	1, 2, 3	2	7.7
H	4	4	15.4
Total		26	100.0

TABLE 4 B : Equipment respondents have in their schools

EQUIPMENT:- 1. Potter's Wheel 2. Kiln 3. Pugmill 4. None		Frequency	%
A	1	6	23.1
B	2	4	15.4
C	3	0	0.0
D	1, 2	6	23.1
E	1, 3	0	0.0
F	2, 3	0	0.0
G	1, 2, 3	3	11.5
H	4	7	26.9
Total		26	100.0

Table 4 A shows schools that have various ceramics tools. The table indicates that 5 respondents being 19.2% say their schools have only turning tools. 1 respondent representing 3.8% has sackboard and rolling pin only. 8 respondents, being 30.8% have turning tools and sackboard/pin. 6 respondents being 23.1% have modelling tools and sackboard/pin together. 2, representing 7.7% have turning and modelling tools as well as sackboard, together. No respondent has either modelling tools only or turning tools and modelling tools together. But 4 respondents being 15.4% do not have any tools at all.

Table 4 B shows various equipment respondents have in their schools. The table shows that 6 respondents being 23.1% have potter's wheel only. 4, being 15.4% have kiln only. 6, being 23.1% have potter's wheel and kiln. 3 respondents being 11.5% have potter's wheel, kiln and pugmill. No respondent has only pugmill, potter's wheel and pugmill together, and also, kiln and pugmill together; while 7 respondents being 26.9% do not have any equipment.

TABLE 5 A & B : How Clay is obtained and stored

TABLE 5 A : How Clay is obtained

Source	Frequency	%
Free	22	84.6
Bought	4	15.4
Total	26	100.0

Table 5A shows whether respondents buy clay or get it free. From the table, 22 respondents representing 84.6% get clay free, while 4, also representing 15.4% buy clay.

TABLE 5 B : How clay is stored

Storage Facility	Frequency	%
Cement bins	2	7.2
Damp box	0	0.0
Polythene	18	69.2
Metal/Plastic containers	6	23.1
T o t a l	26	100.0

Table 5 B also shows how respondents store their clay. The table indicates that 2 respondents being 7.2% use cement bins. 18, being 69.2% use polythene. 6, being 23.1% use metal or plastic containers. But nobody uses damp box.

TABLE 6 : Distance from clay source

Distance	Frequency	%
1 - 5 km	7	26.9
6 - 10 km	4	15.4
11 km/above	10	38.5
Around school	5	19.2
Total	26	100.0

Table 6 shows the distance from respondents' schools to the place they get clay. The table shows that 7 respondents, representing 26.9% get clay from within 1 - 5 km. 4, being 15.4% get clay from within 6 - 10 km. 10 respondents being 38.5% get clay from a distance of 11 km and above; while 5, representing 19.2% get clay around their schools.

TABLE 7 : Practical work taught by respondents

Activity	Frequency	%
Throwing only	0	0.0
Modelling only	11	42.3
Both throwing and modelling	15	57.7
Total	26	100.0

Table 7 shows practical works respondents teach students. The table shows that 11 respondents being 42.3% teach modelling only; 15, being 57.7% teach both modelling and throwing; and no respondent teaches only throwing.

TABLE 8 A & B : Whether students works are fired or not, and by what means

TABLE 8 A : Whether students works are fired

Response	Frequency	%
Yes	18	69.2
No	8	30.8
Total	26	100.0

Table 8A shows whether respondents fire works produced by students or not. The table indicates that 18 respondents representing 69.2% fire students' works while 8, representing 30.8% do not.

TABLE 8 B : Means of Firing

MEANS: 1. Open (trd.) 2. Firewood kiln 3. Electric 4. Sawdust 5. None		Frequency	%
A	1	0	0
B	2	3	11.5
C	3	5	19.3
D	4	7	26.9
E	2, 3	3	11.5
F	5	8	30.8
Total		26	100.0

Table 8 B also shows the means by which respondents fire students' works. From the table, 3 respondents representing 11.5% use firewood kiln only. 5 respondents use electric kiln. 7 being 26.9% use saw dust. 3, being 11.5% use both electric and firewood kilns. Nobody uses the traditional open firing, while 8, being 30.8% do not do any firing.

TABLE 9 : Problems connected with Firing

	Kind of Problem	Frequency	%
1.	Firewood Acquisition	5	19.2
2.	Cracks/Breakages	12	46.2
3.	Power cuts	0	0
4.	Kiln breakdown	1	3.8
5.	Lack of kiln furniture	11	42.3
6.	None	8	30.8

Table 9 shows various problems which respondents face in connection with firing. The table indicates that 5 respondents being 19.2% have problem with acquisition of firewood. 12 respondents being 46.2% have problem with cracks and breakages of works. 1 respondent faces a problem with breakdown of kiln. 11, being 42.3% have problem with getting kiln furniture. Nobody has problem with power cuts; while 8 respondents representing 30.8% do not face any problem.

TABLE 10 : Whether respondents have glazes

Response	Frequency	%
Yes	2	7.7
No	24	92.3
Total	26	100.0

Table 10 shows respondents who have glazes in their schools. It indicates that out of the 26 respondents 2 representing 7.7% have glazes, while 24, representing 92.3% do not have.

TABLE 11 : Students interest in Ceramics

Response	Frequency	%
Yes	21	80.8
No	5	19.2
Total	26	100.0

Table 11 indicates whether students have interest in ceramics or not. The table shows that 21 respondents being 80.8% say their students are interested in the subject; while 5, representing 19.2% say their students are not.

TABLE 12 : Whether Students offer Ceramics at SCE

Response	Frequency	%
Yes	3	11.5
No	23	88.5
Total	26	100.0

Table 12 shows schools where students offer ceramics as an examination paper at the School Certificate Examination.

The table shows that 3 respondents representing 11.5% say their students offer ceramics, while 23, being 88.5% say their students do not offer it.

TABLE 13 : Interest of Heads of Schools in Ceramics

Response	Frequency	%
Yes	10	38.5
No	16	61.5
Total	26	100.0

Table 13 shows whether Heads of schools have interest in ceramics or not. The table indicates that 10 respondents being 38.5% say their Heads are interested in the subject, while 16, being 61.5% say their Heads are not.

TABLE 14 : How Ceramics is financed

Source	Frequency	%
Funds from administration	7	26.9
Funds from P.T.A.	0	0.0
Funds from Art Department	2	7.7
Students Contributions	5	19.2
No funds	12	46.2
Total	26	100.0

Table 14, indicates the source from which respondents get money to support the ceramics course. The table shows that 7 respondents representing 26.9% get money from school administration. 2, being 7.7% get money from the Art Department. 5, being 19.2% get money through students contribution. No respondent gets money from the P.T.A.; while 12 respondents being 46.2% do not get money from any source.

TABLE 15 : Whether ceramics should be taught in schools or not

Response	Frequency	%
Yes	26	100
No	0	0.0
Total	26	100

Table 15 shows respondents' views as to whether ceramics is a necessary subject to be taught in secondary schools. The table indicates that all the 26 respondents feel ceramics should be taught in schools.

CHAPTER FIVE

SUMMARY, SUGGESTIONS, CONCLUSION

5.1 SUMMARY

Data collected through personal interviews of ceramics teachers and questionnaire administered in some secondary schools in Ghana points to the fact that ceramics teachers have common problems to contend with.

Generally, ceramics teachers face financial and logistic problems. This is evident in the lack of the required tools, equipment, and materials. There are also technical, administrative and other social problems.

In some cases however, some of these problems could somehow be controlled. For example, talking about tools, most of the ceramics tools could be improvised without even any cost. Tools like the cutting wire, turning tools, and even the kidney tool, could be designed by the teacher himself from thrown away metal as well as other material pieces.

Perhaps, the root cause of most of the problems facing ceramics teachers is the lack of finance. In secondary schools, art departments do not receive any grants. Students pay thirty cedis (¢30.00) per term as art fees. The amount is often used to buy a few items like pencils and crayons. It is thus, impossible to acquire ceramic equipment for the school.

In fact, the absence of potters wheel does not encourage at all, the teaching of ceramics because it is the wheel method with its production skills that students should know in order to enjoy ceramics. With the potter's wheel, the student learns how to throw and produce items like bowls, mugs and vases he feels he can use himself, and this urges him on to take the learning of the subject more seriously. In a similar way, if works produced by students are not fired to permanence these works become of no use since clay products cannot be used in their green state. It is no wonder therefore that most ceramics teachers interviewed mentioned the two equipment as the most effective problem they are grappling with.

Another finance problem involves the procurement of materials. In certain schools, clay, glazes and firewood are difficult to obtain. Most of the schools are sited far from known clay deposits and such materials can only be obtained the hard way. A typical example of such a situation is the case with Technology Secondary School, U.S.T., Kumasi. The school, even though does not buy clay, it normally has to travel over forty-five kilometres to Asokwa, a village beyond Obuasi for clay. Similarly, Winneba Secondary School apart from buying the clay travels over a distance of about thirty-five kilometers to Abonko for it.

This means that where the school does not own a truck, one has to be hired to go for the clay, and, the financial obligation in such a deal is such that sometimes students do not get clay to work with. Similarly, the firing of students works is not done, and even where kilns are available, the green wares stay on the shelf for a longer time because there is no money to purchase firewood or kiln furniture in the case of schools with electric kilns.

There are also technical problems like cracks and breakages which, of course, may not be very difficult to handle. But with electric kilns, when elements get spoiled it constitutes a big problem because getting replacement is not easy.

Again, the situation whereby schools do not have ceramics studios as indicated in table three, poses another problem. This is because, clay works need time to dry well before they are fired. So, if they are at a place where all other class activities go on, the tendency of the works being destroyed before firing is great.

Lack of expertise is also another problem to be considered. That is, if the art teacher or teachers in the school did not specialize in ceramics, the subject is not given the necessary attention. This is what has happened

in Achimota for some time now. After one Mr. Agbolosu - a ceramics teacher from S.T.C. left the school around the late 1970s, ceramics has not been the same. The school now has seven art teachers - two textiles specialists, one sculptor, one painter, and three graphic designers. For this reason, even though the school has facilities for ceramics, only ceramic sculpture is done. In view of this students offer sculpture, textiles, graphic design and book binding for the School Certificate Examination.

Another militating factor is that of negative attitude towards ceramics. As has been mentioned elsewhere in the essay, art has always occupied the periphery of general education. It is just beginning to enjoy some recognition as to its unique role in education since the inception of the J.S.S. vocational skills programme. In spite of this some heads of institutions still have a very low opinion about art. Such heads are found to be difficult in yielding to the demands of art teachers for funds to procure the necessary materials. This uncompromising attitude basically stems from lack of interest in the subject, and hence difficulty of getting it promoted.

One can also not afford to overlook students' disinterest in ceramics. Table 13 under section four shows that majority of students have interest in ceramics. This is a reflection of the case with S.S.S. students. In schools where ceramics has been offered the students do not have any alternative. But in the old system, students disinterest is quite glaring. Most students find ceramics dirty and absent themselves from class when it is time for clay washing. Also they refuse to go to clay sites to dig clay.

5.2 SUGGESTIONS AND RECOMMENDATIONS

As has already been said, some ceramics problems can be solved with little difficulty. Technical problems like cracks and breakages normally occur during drying and firing either because of uneven thickness in students' works especially in sculpture, or that works might have been dried too rapidly.

It might also happen that the joining of cut-portions or edges are not done well so that during firing handles of cups and bowls may peel off. Beside these, the most outstanding cause for cracks and breakages is the type of firing technique employed. If works are not bone dry and firing also not critically observed there is bound to be such cracks and breakages.

In this light, the initial pre-heating must be slow and the overall process carefully monitored. Pre-heating can be done for six to four hours. This ensures and allows wares to be completely purged of any retained physical or chemical water. When firing is done with, the kiln should be allowed to cool down considerably before opening to remove the contents.

In modelling especially where large pieces are involved, grog must be added to the clay being used. Scooping should be adequate so that the walls are not left too thick to make firing difficult. Drying of works should be gradually done in an airy and shady place and never in sunlight or under a fan, since these speed up the process causing uneven drying, warping and firing breakages.

One other thing which needs taking note of is the aspect of ceramics taught. It could be inferred from table 2 that pottery is the only aspect of ceramics taught in secondary schools. This is so because for examination purpose pottery is the only area that can be conveniently handled at that level. It is suggested that brick and tiles production be introduced. For, after all, students do not learn for examinations only. There is the need to teach them about bricks and tiles as building materials that can be used to construct kilns as well. In view of their architectural use in Ghana today some knowledge on them will be very useful to students who acquire such vocational skills in them to develop them as their future careers when they complete school even at the S.S.S. level. Wooden moulds for bricks and tiles can easily be made by any carpenter when given the specifications. If there happens to be brick and tile factory in the area

students could be sent there on field trips to obtain first hand information on the techniques of production.

Another area which should receive attention is the firing of students' works. Interviews conducted reveals that because some schools do not have kilns teachers fire some of the students' works outside the school premises where possible. Such a situation does not help students in the sense that if the place where the firing is being done is far from the school, it may be impossible for the students to be taken there to take part in the firing. Besides, such an arrangement can take place only when the potter is firing his own works so that he can add the students works which time may also be inconvenient for students to be present.

Again, the survey shows that in most schools teachers fire students works with saw dust. This of course is a necessary improvization in the absence of a conventional kiln. This shows how resourceful some ceramics teachers can be.

In any case, it is not always true that improvization helps in the achievement of very good results or the required experience students need. For example, an improvised saw dust kiln only does low temperature firing. So that where it is possible to glaze students works this cannot be done unless it is the teacher's aim to teach glazing technique without firing.

It is therefore necessary that the appropriate facilities for firing be made available to promote the desirable learning conditions. The students need to acquaint themselves with the right technology of firing and this could only be achieved better with the conventional kiln even if it is the firewood firing type. Every school offering ceramics then must at least acquire a firewood kiln. A cheaper way is to teach the students to produce the bricks themselves as a class exercise, and a mason brought in to help in using the bricks to construct a kiln for the school. The teacher would also have to seek technical assistance in case he cannot do it himself. In

this connection the design of a firewood kiln highly capable of doing both bisque and glost firing is provided in the appendix A.

One problem with the use of firewood kiln is that in glost firing when the kiln is heated, particles are likely to drop from the ceiling of the kiln into wares to destroy them as in fig. 1. This may happen particularly where the mortar used for the building of the kiln is very thick. It is advised that very thin mortar be used for the work and efforts made to wash the inside of the kiln with kaolin before subsequent firings.

Another problem with firing especially in glost firing is the lack of kiln furniture. Quarm (1991)[1] researching into the development of Alumino-silicate Refractories from locally available materials identifies bats as the greatest problem with firing ceramic wares. Where only few bats are available for glost firing the recommended packing technique as illustrated in fig. 2 is appropriate. In this case, the rim and foot of the bowl or cup must be cautiously cleaned. It is worthy stating here that with this packing technique the author has once been able to pack two hundred and fifty (250) mugs using few bats instead of the normal fifty of those mugs. Bricks can aptly substitute for props where unavailable.

The problem with glazes cannot be left out. It is interesting to note that in the secondary schools bisque firing includes examination pieces. Though this is good the application of glazes on such wares would render the bisque fired works more desirable and useful. Again glazes enhance the aesthic appearance of wares, reduce their porosity and increase their strength. It must be noted that unglazed table wares like bowls and cups are useless though flower vases can be used unglazed.

Glazing is very vital in ceramics to enrich students' learning experiences especially where they actively participate in such practical activities. Where kilns are available teachers must look for glazes and take students through glazing exercises. Glaze could be obtained from Ekem

Fig.1 Open bowls spoiled by particles from ceiling of kiln that dropped into them, Winneba Secondary School

Fig.2 Packing with few bats during glost firing Winneba Secondary School

Pottery and Ceramics Factory at Winneba. On the other hand the teacher can seek help from any local ceramics studio so that occasionally, selected students' works could be glost fired. This will help a great deal in boosting students morale and interest in ceramics.

The potter's wheel is very important to the field of ceramics. Thrown pottery cannot be done without the wheel. It is imperative for every school that has offered to do ceramics to get one. It is possible to have one manufactured locally. If unavailable, teachers can still depend on the slab and coiling methods to produce items like flower pots and decorative pieces. Fig 3 and 4 show samples of works produced through the slab and coiling methods respectively.

One other avenue the art teacher can employ to arouse students' interest in art is the formation of an art club. The club could undertake educational trips to workshops of the local painter, carver, or potter so that students would draw inspiration from these artists.

With the art club the teacher can organize seminars and where possible invite a colleague from another school to talk to students about the potentials and opportunities in art. During speech and price giving days the teacher should use the club to help decorate the assembly hall or ground, provide illustrations, do writing of prize winners' names and mount exhibitions with students works for the occasion. This would not only make the function grand but also offer other students, parents and invited guests a chance to see what art can do in students' lives. This will create room for the teacher to win the financial favours from the head of the institution who hitherto may have proved difficult with funds.

The problem of finance is the most striking that needs to be given special attention. It is a fact that if this problem is solved almost all other problems will disappear.

Fig. 3 Works produced through slab method
Author's collection

Fig.4 Samples of works produced through coiling method
Ceramics Section, College of Art, U.S.T.

In secondary schools and colleges, financial administration has often been a big headache for the heads. Most often times government grants or subventions are not given till the schools vacate. It is no wonder then schools without adequate resources to sustain their programmes often vacate earlier than the scheduled time. Under such conditions funds reserved for the development of the various departments are spent on sectors that are deemed more sensitive. Invariably, art becomes the most affected because it is the least important in the scale of preference. No amount of pressure on the administration will be effective to cause a release of funds for art in general. The art master then has to wait even though art deserves the same respect and funds due other subjects.

The ceramics teacher would have to be very tactful. He must adopt every means possible to protect the ceramics as an important means of helping to solve the financial problems of the school. He must sit down with the head and sell to him the idea of and prospects in establishing a production unit in the department to produce at least coolers and flower vases which do not require glazing if such facilities are not available in the school. The head must be made to understand the viability of the production unit as an important income generating venture in the school which will sell its products some proceeds of which could be siphoned into the school's central funds as income for development. Discuss also the need to increase art fees to an appreciable level in order to be able to purchase required materials. This idea will have to be approved by the P.T.A. This strategy was adopted by the author while teaching at Winneba Secondary School. In his case the author also mentioned the role of the ceramics production unit at the Ebenezer Secondary School in Accra as an example.

The suggestions were readily taken and after a P.T.A. meeting, it was agreed that each student should pay one hundred(₵100.00) cedis towards the purchase of a kiln which the school lacked. The monies collected was given to the art department and with the help of Mr. Ekem - a professional in

ceramics, firewood kiln was put up. Fig. 5 shows the art masters in the school inspecting the kiln after construction.

The agreement in this case was for the school to provide the necessary inputs which would be managed by the art department and under the direct supervision of the ceramics teacher. The outcome was that in the 1990-91 academic year, two students (one for 'O' level and the other for 'A' level) offered and passed in ceramics. The last set of students to offer ceramics for the 'A' level left the school ten years earlier. Fig. 6 shows the 'O' level student working on her examination piece. In addition the author was able to secure for the school an amount of about three hundred thousand cedis (¢300,000.00) made through sales of bowls and cups produced by the production unit.

5.3 CONCLUSION

From the foregoing therefore, it could be seen that if ceramics is well catered for in schools it would be a very viable venture for income generation for the school and students will also benefit from it since it is a potential area to offer them a vocation.

The suggestions made therefore need be considered in the interest of strengthening the teaching of ceramics. These suggestions may not be the absolute since situations and conditions differ from school to school. In any case, most of them are common instances.

It is hoped that when these suggestions are adopted the ceramics teacher would be relieved from the main frustrations he faces in the performance of his duty and offer students a better apportunity for studying art in general and ceramics in particular.

Fig.5 Completed firewood kiln being inspected by the Art Teachers of the School Winneba Secondary School

Fig.6 A form five student working on her examination piece
Winneba Secondary School

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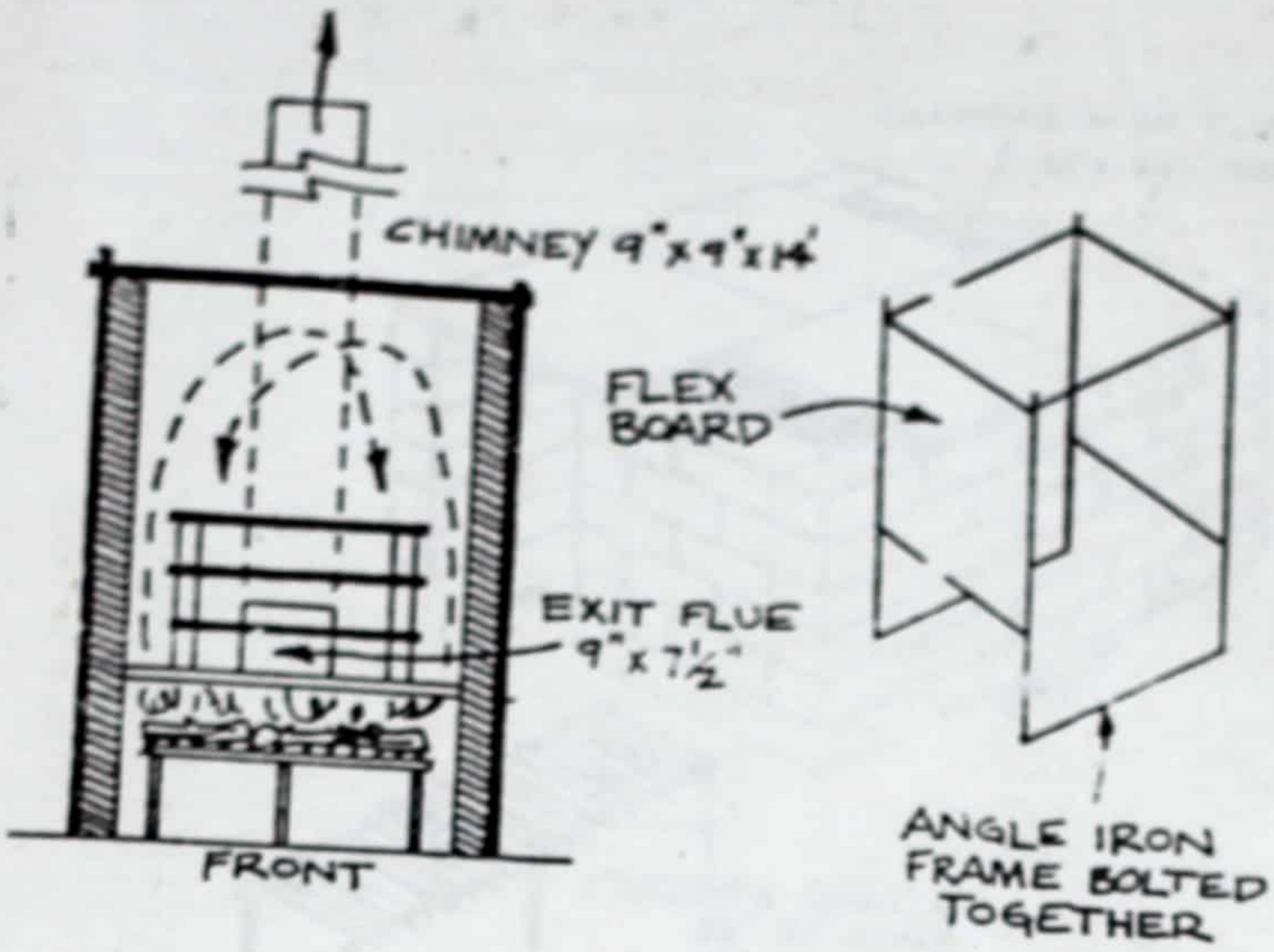
1. ALBERT E. QUARM, "Development of Alumino-Silicate Refractories from Locally available materials for Kiln Furniture", Unpublished M.A. Thesis, Department of Art Education, College of Art, U.S.T., Kumasi 1991, P. IV.

2. THE MINISTRY OF EDUCATION, Visual Art Syllabus for Senior Secondary Schools, Wisdom Press Ltd., Accra, 1991.

DOWN DRAFT FAST-FIRE WOOD KILN

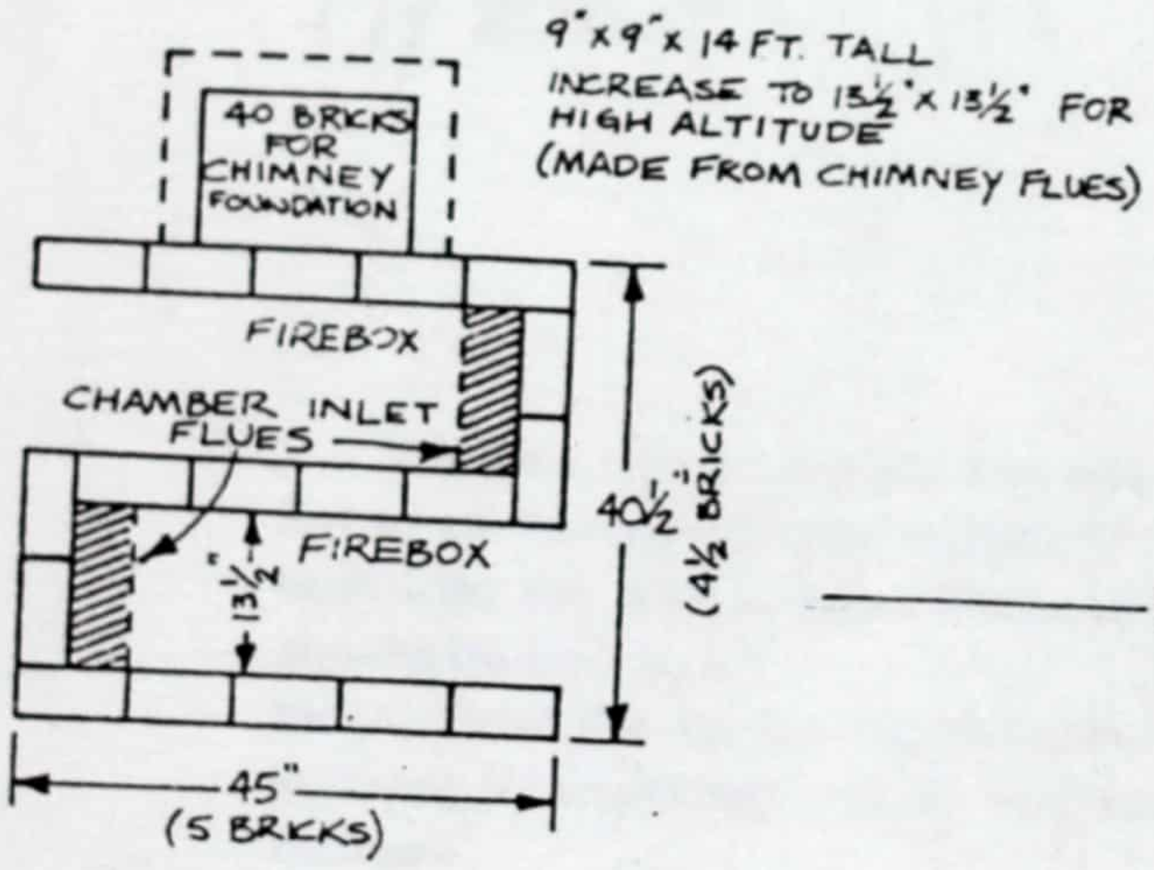
A. Cross Section



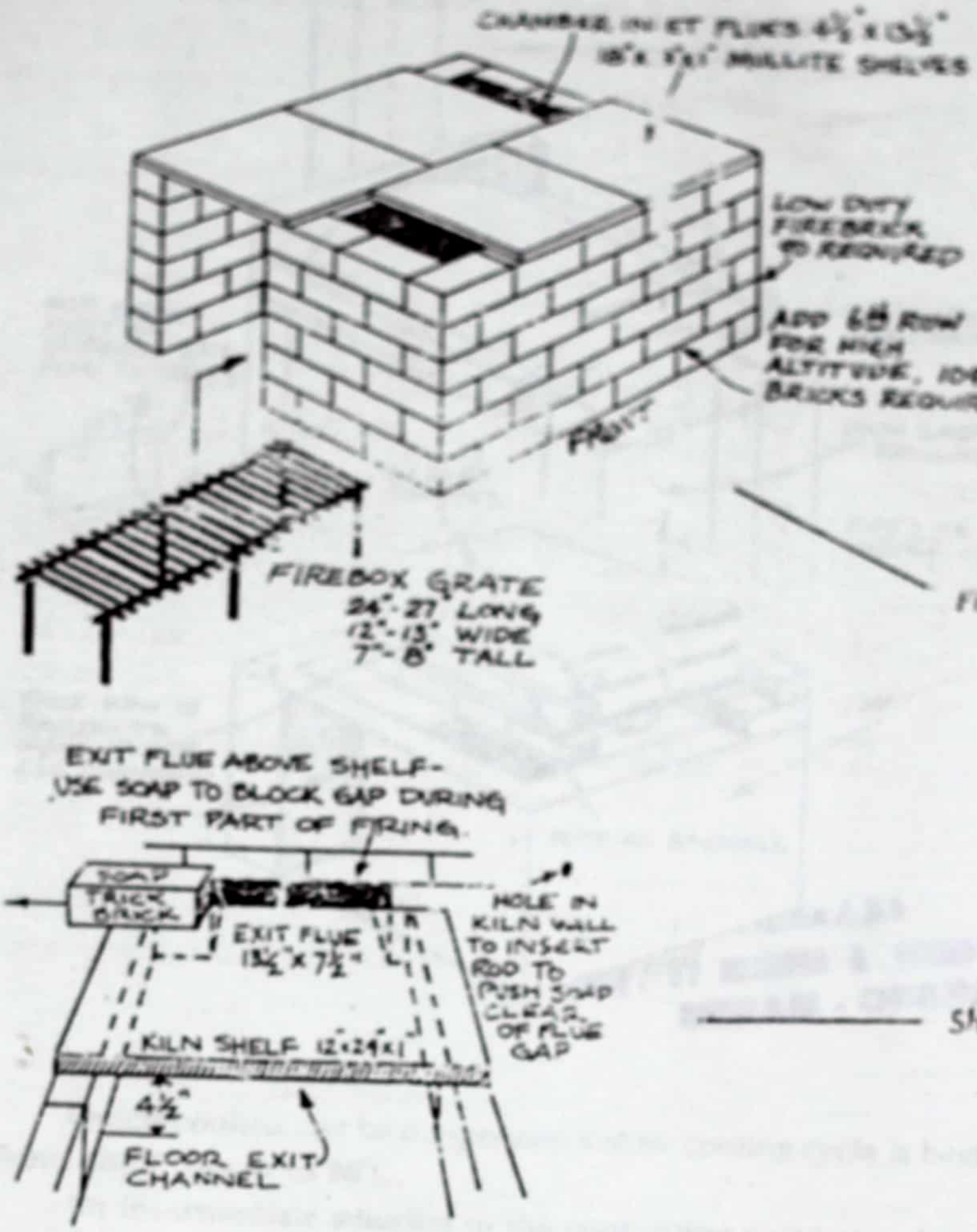
Construction details.
Chimney: for high altitude, 13½" × 13½" for 3', then 12" with 12" OD flue liners

- The chimney height should be three times the height of the kiln's chamber plus the height of the firebox, plus 1 additional foot for every 3 feet of horizontal travel of the flue gases. For altitudes over 4,000 feet, an additional 3 feet of chimney or more may be needed. Also increase chimney diameter by 50% and exit flue size (square inches of area) by 40%.

This fastfire wood design can be enlarged to almost any size between 12 and 50 cubic feet. It can be built with insulation bricks or hard bricks (hard bricks will lengthen the firing time).



B. Top view of foundation layout



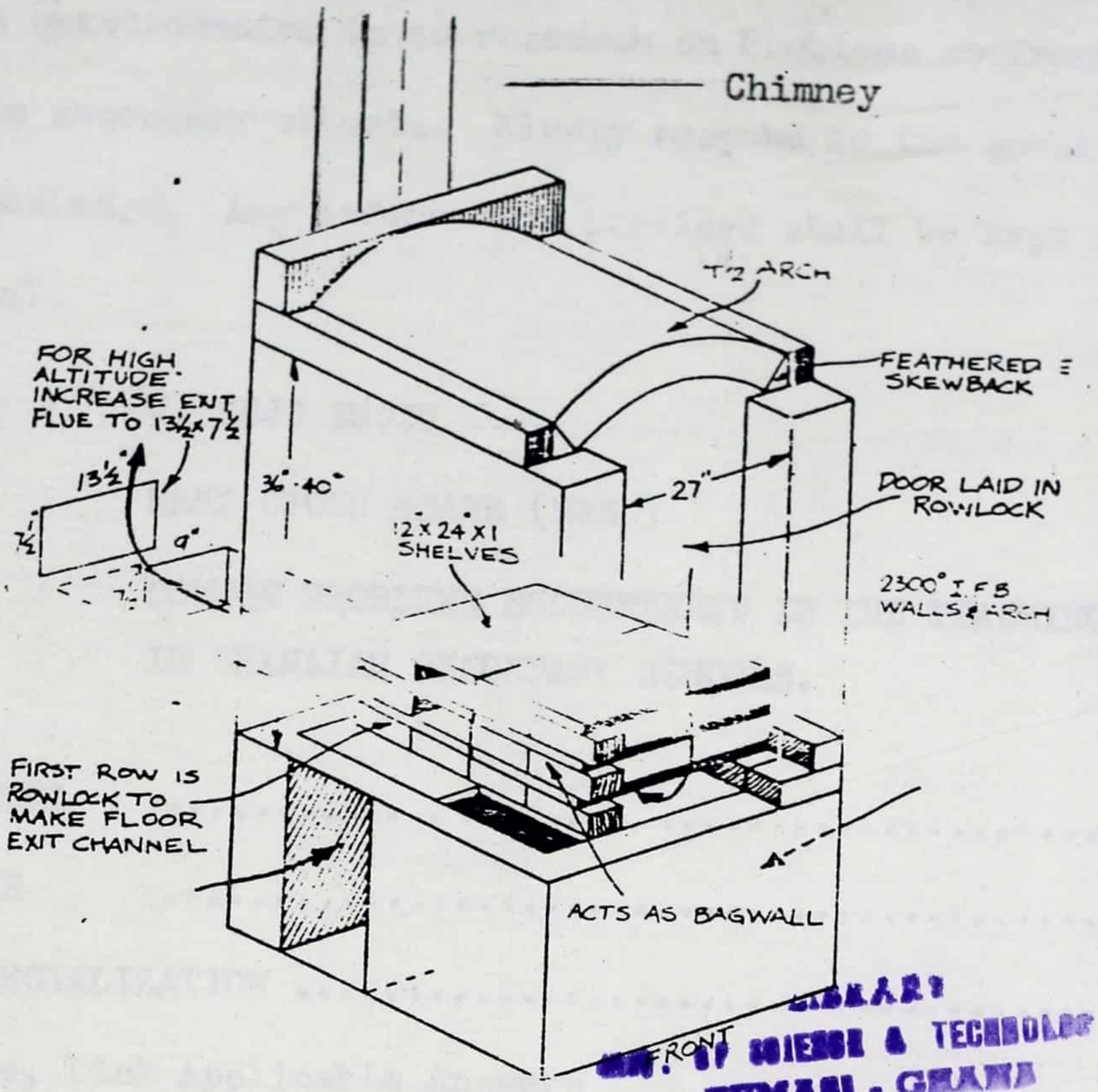
Firebox construction.

Shelf and exit flue details.

The kiln can be designed to use wood, gas or oil. Oil drip plates or forced oil burners can be mounted in the firebox area. Gas ports can be built into the side walls at floor level using removable bricks. Gas ports should be 4½" × 4½" if gas is used, the inlet flues must be blocked and the firebox mouth bricked up and sealed with mud. The kiln stacking arrangement acts as the bagwall and flame deflector for the gas burners.

D. THE FULL VIEW OF THE KILN

Also showing inside view



Quick cooling *can* be dangerous; a slow cooling cycle is best, especially from 590°C down to 90°C.

An intermediate solution to the continuing problems of fuel shortages and rising costs is to have kilns capable of extremely fast firings and efficient fuel consumption. The illustrated fastfire wood kiln is an example of a finely tuned downdraft kiln capable of firing to Cone 10 in 3½ hours using ¼ cord of wood of any kind.

The bottom firebox section is made with straight, hard, refractory bricks. The actual kiln chamber and arch are laid with 1260°C (2300°F) insulation firebricks 4½" thick backed by flexboard

There are three important design principles that should be kept in mind when building an effective fastfire wood kiln:

* The firebox area should be 10 times the horizontal cross-section of the chimney. For fastfire, increase firebox area by 20%.
* More than half of the firebox volume should be below the grate bars. In other words, the grate level should stand at more than half of the firebox height, the larger lower half being the ash pit, and the upper portion the combustion area.

QUESTIONNAIRE

This questionnaire is to research on Problems confronting ceramics teachers in secondary schools. Kindly respond to the questions to the best of your knowledge. Any information provided shall be kept strictly confidential.

CANDIDATE : J. KOJO DUODU

SUPERVISOR : NANA OPOKU ASARE (MRS.)

TOPIC : COMMON PROBLEMS ENCOUNTERED IN THE TEACHING OF CERAMICS IN GHANAIAN SECONDARY SCHOOLS.

NAME OF SCHOOL .....

TUTOR'S NAME .....

FIELD OF SPECIALIZATION .....

* NB: Please, Tick Applicable Answers

1. How many Art teachers are in your school? .....
2. How many are ceramics teachers? .....
3. Which area of ceramics do you teach? (Pottery, Brick/Tile) (Yes, No)
4. Do you have a ceramics studio? (Yes, No)
5. Which ceramics tools and equipment are available in your school?

   a. 1. Turning tools,
      2. Modelling tools,
      3. Sackboard/rolling pin,
      4. None (A.1), (B.2) (C.3) (D.1,2) (E.1,3) (F.2,3) (G.1,2,3) (H.4)

   b. 1. Potter's wheel
      2. Kiln
      3. Pugmill,
      4. None (A.1) (B.2) (C.3) (D.1,2) (E.1,3) (F.2,3) (G.4)

6. A. How do you obtain clay (Bought, Obtained Free)

   b. How do you store clay (Cement Bins, Damp Box, Polythene, Plastic/metal containers).

7. How far is the nearest clay deposit from your school?
(1-5km; 6-10km; 11km and above; Around school).

8. a. What do you teach for practical ceramics?
(Throwing only; Modelling only; Both throwing and Modelling)

b. What modelling method do you use? (Slab, Coiling, Pinching).

9. a. Do you fire students works (Yes, No)

b. If Yes by what means? 1. Traditional Open firing
2. Firewood kiln only
3. Electric kiln only
4. Saw dust,
5. None

(A.1) (B.2) (C.3) (D.4) (E.2, 3) (F.5)

10. What problems do you encounter in firing?
(Acquisition of firewood; Cracks/breakages; Power Cuts; Breakdown of Kilns; Kiln furniture, None).

11. Are your students interested in Ceramics (Yes, No.)

12. a. Do your students offer ceramics for certificate examination (Yes, No)

b. If No, why?

13. Is the Head of School interested in ceramics or art in general (Yes, No)

14. How is ceramics financed (Beside Art Fees)?
(Funds from Administration; P.T.A.; Art Department; Students contributions; No funds).

15. Should ceramics be taught in secondary schools?
(Yes, No) Give reasons

16. Any extra information?

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