

African Research Review

An International Multi-Disciplinary Journal, Ethiopia

Vol. 3 (4), July, 2009

ISSN 1994-9057 (Print)

ISSN 2070-0083 (Online)

Pedagogical Content Knowledge: A Key Factor in Teaching Painting (Pp. 153-163)

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Abstract

Fine Art teachers have more instructional responsibilities and demands placed on their time, compelling them to proceed from one lesson to the next without adequate preparation and reducing the amount of time and energy they have to be thoughtful in their planning and reflection. In order to support fine art teachers in their teaching, professional development opportunities are to be made available. Research has shown that even when students complete a fine art-degree programme and pedagogical course requirements necessary for teacher professionalism, they may still graduate and begin teaching without a firm grasp of how to teach specific painting concepts. Realizing this fact, this paper attempts to utilize those ideas on the components of pedagogical content knowledge, otherwise known as topic-specific pedagogy, to create learning opportunities that make painting more comprehensible to students.

Key words: Fine art curriculum, students' learning difficulties, pedagogical content knowledge, painting.

Introduction

Painting, a two dimensional art, is an aspect of fine art. It is a medium of expression in some media to project images in visual forms which are inherently embedded as self expression, such that, media of dry or wet colours and other various materials are used to communicate to other either joy or sorrow.

Aesthetically, painting is used as means of interior and exterior decoration. The importance of painting as means of dating time cannot be over emphasized. Cave paintings have helped in keeping history alive. Besides, painting serves as record keeping. No wonder, painting has undoubtedly been described by art educators as effective medium of past events. Painting skills, once acquired and developed provide job opportunities to young ones in media advertising industries, education sector, etc. painting has also been used to criticize policies as well as to educate people. For instance, in most of our dailies either at the centre page or back page, cartons are used to sensitize the public on government agenda or programmes that concern the populace. Cartoons can equally be used to educate the public on family planning, electoral processes and other programmes relating to environmental issues.

In spite of these usefulnesses of painting to mankind, painting has been seen to be very difficult for students (Wiseman, 2003). Several people have attributed this difficulty to students' poor drawing skills and poor understanding of colour theory. In addition, lack of pedagogical content knowledge (PCK) on the part of the fine art teachers in is a contributing factor. As first described by Shulman (1986, 1987), PCK is a teachers' unique knowledge of how to create learning opportunities that make particular content more comprehensible to others. Such learning opportunities may include, but are not limited to, metaphors, demonstrations, activities, and examples that are tailored to the needs of particular group of learners.

Perhaps a productive path for art educators to follow in providing solution to students' learning difficulties with painting is what Shulman (1986) has tagged "pedagogical content knowledge". PCK is regarded as the link between two kinds of knowledge, that is content knowledge and pedagogical knowledge. While content knowledge refers to one's understanding of the subject matter, pedagogical knowledge refers to one's understanding of teaching and learning processes independent of subject matter, pedagogical

content knowledge refers to knowledge about teaching and learning of particular subject matter that takes into account the particular learning demands inherent in the subject matter.

PCK, the knowledge required in re-representing and re-reformulating a subject matter in order to make it comprehensible to the learners has four major components as identified by Grossman (1990): (a) knowledge and beliefs about the purposes of teaching a subject at different grade levels, (b) knowledge of students understanding, conceptions and misconceptions of particular topics in a subject matter (c) knowledge of curriculum materials available for teaching particular subject matter as well as knowledge about both the horizontal and vertical curricula for a subject and (d) knowledge of instructional strategies and representations for teaching particular topics (pp.8-9). Utilizing the PCK components in Grossman's (1990), four fundamental questions which provide direction for this paper needs to be raised when planning to teach any topic in fine art. These questions are:

1. why are you teaching what you're teaching?
2. What are your students' typical understandings and misunderstandings of a subject?
3. How much do you know about curriculum and curriculum materials?
4. Have you thought about the strategies and representations you could use for particular topics?

Traditionally, in art education programme teachers are taught content knowledge and pedagogical knowledge. The link between the two kinds of knowledge is usually lacking. Shulman is of the opinion that this kind of knowledge, that is the PCK is the major key to successful teaching. PCK, is acquired largely through experience, discussion with more experience colleagues, imitation, reflection on things seen and heard, attendance at professional conferences and reading teacher journals (Van Driel, De Jong and Verloep, 2002).

Theoretical Framework

There have been numerous attempts to describe the nature and characteristics of teacher's knowledge which includes content knowledge (facts, structures, beliefs, etc), pedagogical knowledge (managing the classroom, instructional strategies etc), pedagogical content knowledge (how you make a subject

understandable to others). It is not the purpose of this paper to present a critical review of literature on PCK, rather the paper attempts to utilize those ideas on the components of pedagogical content knowledge (PCK) to formulate a framework to help clarify the knowledge that good art teachers possess, and how that knowledge is applied in teaching painting.

In studying art teachers' knowledge, the authors draw on the work of Shulman and colleagues who outlined a theoretical framework for examining a specialized knowledge base for teaching (Shulman, 1986, 1987; Wilson, Shulman and Richert, 1987). Within this specialized knowledge base, Shulman (1986) defines PCK as interwoven pedagogy and subject matter knowledge necessary for good disciplinary teaching. PCK refers to the most appealing manner in which teachers organize and present subject matter by telling, explaining, guiding, illustrating, demonstrating, and using texts, computers, media, or workbooks in order to re-package subject matter into a form that is accessible to students. PCK as a construct of teacher knowledge, has three attributes as agreed by scholars. Firstly, since PCK refers to particular topics it is to be discerned from knowledge of pedagogy, of educational purposes, and of learner characteristics in a general sense. Secondly, because PCK concerns the teaching of particular topics, it may turn out to differ considerably from subject matter knowledge per se. Finally, it is developed through an integrative process rooted in classroom practice, and that it guides the teachers' actions when dealing with subject matter in the classroom. PCK is acquired from prior education, the teachers' personal backgrounds, the teaching contexts, and through experience in the 'doing' of teaching. Therefore, PCK produces effective teaching on the part of teacher who possesses it.

Pedagogical content knowledge growth among beginning teachers is generally slow incremental and it is related to the time required for these teachers to plan, gather resources, teach, reflect and reteach specific topics with increased effectiveness and fluency as observed by Clermont, Borko and Krajcik (1994). Growth of art teachers' PCK also appears to be dependent on the motivation, creativity and pedagogical reasoning skills of the teacher.

The teacher is central to educational process and his pedagogical reasoning skills that is thought processes or procedural knowledge require in producing a plan for teaching a lesson, a unit or a course, will result in far-reaching outcomes.

Objectives of Teaching Painting

One of the important activities to be carried out by the teacher in preparing to teach painting is specification of instructional objectives. What learning goal is each student expected to reach? More precisely, what new capability should the learner possess at the completion of instruction? Objectives constitute statement of what the instructor plans to include into a learner and also what the learner ought to get out of such a lesson. The objectives may be derived from a course syllabus, stated in a textbook taken from a curriculum guide, or developed by the teacher. Wherever their sources, the objectives of teaching painting at secondary school level as specified by the Nigerian Educational Research Council (NERC no date p12) are to:

1. develop various skills needed for the application of pigments to any surface with various paint media.
2. acquire the basic knowledge of colour mixing, relationships and how colours affect each other.
3. learn the control of colour.
4. have experience in working with opaque and transparent colours.
5. plan and organize composition into meaningful expression.

In addition to the objectives specified by NERC, the following objectives are identified by the authors:

1. explore different ideas, concepts, themes, materials, techniques, tools, media and processes which enable students to communicate visually at a more sophisticated level and expand their artistic awareness.
2. explore traditional as well as contemporary artists, across time and place, seeking to discover similarities and differences between them and themselves.
3. develop respect for multiple viewpoints by comparing their values of art works (painting) with those of others
4. have experiences in the preparation, maintenance, and care of materials, tools, equipment and facilities.

If objectives are clearly and specifically stated, learning and teaching become objective-oriented in the sense that having a clear idea of objectives enables the teacher to select most suitable teaching/learning strategies and activities to help his students achieve the stated objectives and at the same time stated

objectives students to be aware of the behaviours and skills they should exhibit after instruction.

Teachers Knowledge of Fine Art Curriculum and Curriculum Materials

In traditional forms of curriculum development, curriculum is derived centrally (by curriculum experts) and disseminated to school via directives, guidelines, or advisory bulletins. In some educational jurisdictions, the new curriculum is policed by inspectors from ministry of education and Teaching Service Commission (TESCOM) (in case of Nigeria) to ensure proper implementation in the classroom. In some cases, the curriculum is spelled out in remarkable details, even to the extent of giving lesson-by-lesson directions, in an effort to make its implementation effective. The curriculum developers specify the knowledge and skills required to implement the new curriculum and in some cases, may assist teachers in acquiring them via in-service programmes or explanatory booklets. Sound knowledge of curriculum allows teachers to operationalize the plans of others, teach in a way prescribed by the curriculum developers and assess students learning in a way that is designated by others.

However, to some extent, classroom teachers have some degree of freedom to interpret and adapt whatever official text or curriculum guide that has been prescribed. For instance, a teacher can stress certain points in a text and give scant attention to others, he/she can supplement or replace official text with his/her own teacher-made materials; he/she can direct students to the internet or even introduce lessons or units that are completely unrelated to the assignment text. This freedom to modify the official curriculum has led many to conclude that the real curriculum is whatever teachers actually choose to do in their classrooms. It is only when the teachers have learned which topics are the most central and which are peripheral that teachers can accurately judge the depth to which a topic should be covered and hence the amount of time to spend on it.

Based on the preceding discussion, it is clear that a sound knowledge base in pedagogy, art content and curriculum knowledge is essential in implementing art curriculum in the classroom. The art curriculum with respect to painting at secondary school in Nigeria includes the following topics:

1. Free hand drawing from observation, memory and imagination
2. Colour study (Plant life)

3. Figure painting
4. Still life (three or more objects from the home)
5. Plant life (three or more objects)
6. Figure painting (with dress on)
7. Landscape painting, selected section
8. Painting of a head or a portrait
9. Pictorial design (using a few figures)
10. Composition

The document (i.e. the officially prescribed fine art curriculum) urged teachers to seek to know the features of the fine art syllabus they operate, such features include the content, organization, orientation and set objectives as such a knowledge will guide the fine art teachers in planning his/her lessons.

One way to implement fine art curriculum is through provision of adequate curriculum materials designed to be educative for art teachers. Curriculum materials including arts and crafts textbooks, teacher guides and technology based instructional materials (e.g. computers), whether supplied by the schools or ministry of education are to be made available for effective teaching of painting. Learning and instructional materials (LIMS) such as poster paint, water colour, local colours, dyes, crayons, pastel, brushes, paper, boards, bits and pieces of materials are very useful in painting class. Fine art teachers are expected to accustom to using such materials to plan and structure student activities. Stressing the usefulness of curriculum materials in teaching and learning process, Ball and Cohen (1996) suggest that curriculum materials can be educative for teachers by offering support for teachers in thinking about: (1) content beyond the level suggested for students (2) underlying pedagogy and (3) developing content.

Students' Learning Difficulties with Painting and Effectives Teaching Strategies

In an attempt to create visual forms from the imagination, the painter is in fact, engaging in mental exercise of solving artistic problems. The problems of choice and mixing of colours, problems of perspective and foreshortening, proportional problem, problem of where and how to apply colours as well as compositional problems are among the numerous problems facing students when engage in painting.

The painting students always encounter difficulties in selecting palette of colours. Most paint manufacturers have produced over one hundred colours from which students are expected to choose from and this can constitute a problem for a novice student. From teaching experience of the authors, most students create a painting using ready mixed paints or colours but the result would appear unnatural and the beauty to be derived from personalizing painting with individual mixes is missing. In providing solution to this learning difficulty, PCK of the painting teacher comes into play. It is the PCK that allows the teacher to instruct the students that when selecting colours a warm (reds oranges, yellow) & cool (blue, green, purple) tone of the hue should be included. Equipped with PCK, teachers instruct students that the choice of colours to be used in painting depends on the subject matter vis-à-vis, landscapes, still life and figure studies – all require a different balance of colours. In using colours students should start with a basic palette and add extra colours, depending on the mood the colour temperature and the subject matter. It is the PCK that made the painting teacher realized that students must be well grounded in colour theory. In fact a basic knowledge of colour theory is necessary in order to create a palette of colours.

Problems of where and how to apply colours are some of the difficulties students encountered in applying colours on surfaces. Equipped with PCK, the teacher instructs the students to adopt glazing, undercoat or washing techniques. These techniques involves initiating lightest palette of various grades of monochromic pigments on the prepared surface Followed by intermediate mixed colours of various pigment, then tinted of various grades of pigments depending on the subject matter. The students are made to understand that glazing in simple term, refers to laying of colours layer by layer or washing of colour over one another from lightest colour to darkest colour. Once the first layer dries, a second wash is laid. Gradually, colours are built up then followed by third the fourth darken colours are introduced to strengthened the painting.

Foreshortening is another difficult aspect in painting exercise which most painting students always try to avoid. This is because of students' inability to interpret figures or scenes correctly. Equipped with PCK, the teacher instructs students to be mindful of the interpretation of the figure to be painted, since, foreshortening is illusionary, that needs the science of mental ability and power of observation to represent foreshortening accurately in painting. The teacher makes the students to understand that, be as it may,

foreshortening is necessary at times but should not be over done. The difficulty students encounter in painting foreshortening in figures or scenes can only be solved by constant checking the correctness on their body in a mirror.

There are many rules, complex ones, that governs perspective as it involves the painting of scenes or objects on a two-dimensional surface to create a three-dimensional appearance. This complexity stems from parallel lines that tend to meet at a point on a horizontal line and object becoming smaller and even narrower as it recedes in the distance. These are difficulties students encounter in painting especially, when it comes to what is referred to as eye level and vanishing point. To solve perspective difficulties, students should be made to understand that the point where the two parallel lines meet is called vanishing point while the horizontal line on which the point converge is referred to as the eye level. The teacher, equipped with PCK, instructs students to understand that, toned palettes best interpret receding scenes while tinted or dark colours best interpret advancing scenes. Instructionally, the students are taught to draw diagonals on a rectangle in perspective and to determine the centre line and the middle of the figure by intersection. Then, draw diagonals from half and quarter, where they intersect the centre lines, determines divisions. Students are instructed to make divisions on vertical and to draw lines to vanishing point and to place figures anywhere on lines in correct perspective. The teacher also makes the students to understand that perspective and foreshortening work together. Perspective can also be found in figures and still life paintings.

Composition can be described as the organizational format of any imaginary images or ideas expressed in a concrete manner. Composition has been a recurring problem for painting students and it requires determination and constant practice to solve, constant and periodic objective criticism during formative and summative evaluation of students' agreement or work.

One of the principles of art is proportion whose application in painting has always constituted itself difficult for students to grasp. Proportion deals with recording in visual forms the relationship of various forms of figuratives and still life objects. Misinterpretation of the relationship on a two-dimensional surface in visual forms may bring the painting to a dismal end. The students must therefore, be encouraged to measure accurately using the power of observation when painting. Right from the beginning, until you get the feel of

your proportion you will get a better start by measuring accurately. If there is extreme action, curve your measuring lines each part separately.

In conclusion, to solve various difficulties encountered by students during painting exercise, it requires regular and constant practice and power of observation as well as correct and accurate measurement of various parts.

Implications for Instruction and Teacher Development

The general message presented in this paper to those who are involved in professional development of fine art teachers is that teacher need to be provided with knowledge that will enable them to vary and improve the ways and methods used to teach a specific topic (e.g., painting). In the same vein, Gomez (1990) perceived similar need when he observed that many new teacher function in a professional desert, abandoned by the institutions and neglected by overburdened school personnel. When pedagogical content knowledge is missing, fine art teachers result to “teach as they have been taught” or assuming that their “expertise” will get them through a class. These strategies ultimately lead to a frustrating experience for both students and teachers. Therefore, it is not a good practice to depend on individual teachers possess the necessary fine art content knowledge but little knowledge or preparation in pedagogical to teach painting. This is so because such individuals who do not possess the necessary pedagogical content knowledge and reasoning skills would not be able to maximize students’ learning of principles and concepts involved in painting. In order to be able to “transform subject matter knowledge into a form accessible to students, teachers need to know a multitude of particular things about the content that are relevant to its teachability” (Geddis, 1993 p.676). Among several ways of cater for this essential need of teacher is the establishment of mentioning relationship between secondary school fine art teachers and university lecturers with the intention of promoting their professional development. Besides this, belonging to a professional association will go a long way in professional development of fine art teachers.

This is so because being a member of a professional body will allow one to know what is going on, the latest developments in teaching techniques, new emphase in programme content and many other trends that are happening continuously in a growing profession. Through associations, an effective channel of communication exists by way of the publications, meetings and announcements that periodically made.

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