UNIVERSITY OF CAPE COAST

ASSESSING THE PEDAGOGICAL CONTENT KNOWLEDGE OF ACCOUNTING TEACHERS IN SENIOR HIGH SCHOOLS IN THE CENTRAL REGION OF GHANA

LETICIA BOSU

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BY

LETICIA BOSU

Thesis submitted to the Department of Arts and Social Sciences Education of the Faculty of Education, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy Degree in Curriculum Studies

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:.....Date:.....

Name: Leticia Bosu

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature:.....Date: .....

Name: Dr. Cosmas Cobbold

Co-supervisor's Signature: .....Date: .....

Name: Dr. Yaw A. Ankomah

ABSTRACT

Accounting teachers' ability to identify the learning difficulties of their students is a crucial part of teachers' Pedagogical Content Knowledge. Accounting is a subject that most students have difficulty in learning, which is exhibited in their performance. Timely identification of the learning difficulties of accounting students by accounting teachers in order to provide timely intervention measures will be of much importance to the students and all stakeholders in education.

The purpose of this study was to find out the pedagogical techniques senior high school accounting teachers use to identify and address the learning difficulties of their students. Descriptive design was used to survey 72 accounting teachers in the Central Region. Questionnaire was used to sample the views of the respondents whilst descriptive statistics were employed to analyse the resulting data.

The outcome of the study revealed that accounting students commit minor errors and careless mistakes; large class size also poses difficulties to students' learning. Accounting teachers confirmed that during scoring and grading of students' scripts, they are able to identify their students' learning difficulties. Strictly adhering to accounting laws and principles was the major intervention measure accounting teachers used to address their students' learning difficulties. It is recommended that accounting, teachers become extra careful and methodical in presenting facts in class; they are entreated to spend quality time with students so as to diagnose their problems early enough to address them in time. Central and local governments should provide some more classrooms to ease the pressure on the already existing ones.

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While all these people have contributed in diverse ways in bringing this study to a successful completion, I absolve all of them from any shortcomings of this study. All shortcomings are entirely my responsibility.

DEDICATION

To my mother, Rose Amankwaa, and my siblings Stephen, Sarah and Gortle.

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CHAPTER ONE

INTRODUCTION

Background to the Study

For any instructional programme to succeed and survive the test of time, teachers' impacts are paramount. Teachers serve as the agents to deliver the programme as required. However, their conduct in the classroom is a crucial factor of their professionalism which is broken further into the skills of teaching and knowledge in the specific subject area. These two components of professionalism serve as the potent forces that help in appraising a teacher's performance.

Many studies have demonstrated that knowledge is a powerful force in learning and instruction, and it is also pervasive, individualistic and modifiable (Alexander, 1996). The debate over the kinds of knowledge teachers should have in order to be effective in the classroom looms large. This is due to the fact that most observers agree that successful teachers draw on specialized knowledge in their instructional work with students, but specifying and measuring this knowledge has proven elusive and controversial in education.

A teacher who is highly knowledgeable in a subject area still needs the skills of teaching that particular subject. Such skills are technically referred to as pedagogy. Pedagogy involves classroom management, motivation,

communication, and students' involvement in lessons. Teachers' ability to impart knowledge to students depends mostly on the pedagogical strategies that are employed during teaching and learning. For instance, the teaching methods that teachers use have a significant impact on students' ability to grasp the subject matter.

Most people would agree that an understanding of the content is paramount for teaching. Yet, what constitutes understanding of the content is only loosely defined. In the mid-1980s, a major breakthrough initiated a new wave of interest in the conceptualization of teacher content knowledge. Shulman (1986) and his colleagues proposed a special domain of teacher knowledge that they termed Pedagogical Content Knowledge (PCK). What provoked broad interest was the suggestion that there is content knowledge unique to teaching (a kind of subject-matter-specific professional knowledge). The continuing appeal of the notion of pedagogical content knowledge is that it bridges content knowledge and the practice of teaching. Thus, a teacher who is a subject specialist but lacks pedagogical skills is as deficient as a teacher who has pedagogical skills but is not knowledgeable in the content area. This underscores the need for teachers to have knowledge in both content and pedagogy to become professionally useful as teachers.

An important aspect of a teacher's PCK is his/ her ability to identify students' learning difficulty. This is particularly important in a mechanical subject like accounting where rules, policies, concepts, principles, formats and procedures are emphasized. It is, therefore, important for the accounting teacher

to be able to determine whether students are following a specific instruction given in class. A teacher's role does not consist of teaching subject matter only. It also involves the ability to detect difficulties that students have in the learning of the subject. These difficulties could be associated with the classroom environment; teaching methods used by the teacher; preconceptions and misconceptions students have about the subject, and the laws and principles that are inherent in the subject, among others. It is when such problems are known that teachers can provide remediation to rectify them to enable students improve their performance.

Statement of the Problem

There are many studies on teaching, students and students' learning, but very little research focuses on teachers and what teachers do in the classroom (Carter & Doyle, 1987). According to Shulman (1986), it is what teachers' know and how they know it that is important rather than how teachers' think and make decisions. That is to say teachers' knowledge and understanding of their subjects take precedence over instructional decision alternatives they formulate and implement. The particular ways teachers attempt to transform their knowledge into representations that make sense to their students are subsidiary to content and pedagogy.

Shulman (1987) asserts that, to teach all students according to today's standards, teachers need to deeply and flexibly understand the subject matter to enable them create cognitive maps, relate one idea to another and address

misconceptions. Teachers' ability to teach this way would depend on their knowledge of the learning difficulties of their students, and appropriate measures for addressing those difficulties (Golemark, 1994).

In Ghana, the annual West African Senior Secondary Certificate Examination (WASSCE) results reveal that accounting students' performance in the accounting paper over the years still needs improvement. This is evident in the chief examiners' reports over the past years about students' performance in accounting as a subject. Between the years 2002 and 2008, the chief examiners' reports repeatedly drew attention to the need to improve students' performance (West African Examinations Council, 2002; 2003; 2003; 2004; 2005; 2006; 2007; 2008). Each year's report stated that candidates' performance did not differ from those of previous years. This gave an indication that weaknesses that were previously highlighted still persisted. The set of questions was of the same standard and difficulty as the previous years. The questions were within the general coverage of the syllabus and within the abilities of the candidates. However, performance level fell below the previous years. The indication from these reports is that students have apparent difficulties in learning and understanding accounting concepts and principles. Research is therefore needed to establish what those difficulties are, their causes, how teachers identify those difficulties and what measures they put in place to address the difficulties.

Purpose of the Study

The purpose of this study was to find out what pedagogical techniques senior high school accounting teachers use to identify and address the learning difficulties of their students. Specifically, the study sought to find out:

1. The major learning difficulties senior high school students' have in accounting.
2. The sources of students' learning difficulties in accounting.
3. How accounting teachers identify the learning difficulties of their students.
4. Measures accounting teachers put in place to address students' learning difficulties.

Research Questions

The following research questions were formulated to guide the study:

1. What are the major learning difficulties of Senior High School accounting students in the Central Region?
2. What do Senior High School accounting teachers in the Central Region perceive as possible sources of students' learning difficulties?
3. How do Senior High School accounting teachers in the Central Region identify the learning difficulties of their students?
4. How do Senior High School accounting teachers in the Central Region address the learning difficulties of their students?

Significance of the Study

The findings of the study will be of much benefit to curriculum developers of accounting and policy makers. This is due to the fact that when developing the curriculum, those difficulties that are identified will be addressed and a lot of emphasis will be placed on that in the curriculum and teachers will also be aware when teaching so as to facilitate students' understanding. Policy makers will also benefit in the sense that possible solutions to those difficulties can as well be implemented in other related subjects or programmes of study. To facilitate this, findings of the study will be made available to the Curriculum Research and Development Division (CRDD) and the Ghana Education Service (GES). The study is also hope to help accounting teachers and other teachers to be aware of the possible learning difficulties that student are bound to encounter and the strategies that will be appropriate to eliminate those difficulties.

It will also help to bring to the fore what accounting teachers perceive as possible sources of learning difficulties in their students. Finally, it will bring to light how accounting teachers identify those learning difficulties of their students in the SHSs.

Delimitation

Penso (2002) categorizes Pedagogical Content Knowledge into two main components: knowledge of the main aspects of the discipline in the teaching context and knowledge about learners and the learning processes. This study is limited to an aspect of the latter knowledge component, that is, how teachers

identify students' learning difficulties and the strategies they use to address those difficulties. Also, the study does not concentrate on the biological, sociological and economic causes of learning difficulties of students. Rather, the study is concerned with the content specific and curriculum-oriented learning difficulties inherent in the teaching and learning of accounting in the Senior High Schools. Finally, the study is limited to only public Senior High Schools in the Central Region and accounting teachers in those schools.

Limitations of the Study

A limitation of this study is that respondents might have been uncomfortable to admit their lack of knowledge about students' learning difficulties. The teachers might assume they could be perceived as personal failures if they were unable to identify students' problems in the teaching and learning of accounting. These factors may have influenced responses and therefore skewed the results of this study. Also, interview and observation of the teaching and learning process could have been done to corroborate the findings from the questionnaire. However, due to time constraint, this could not be done. Despite these possible limitations, it was hoped that the findings of the study could be fairly generalizable to Senior High School accounting teachers in the Central region of Ghana and the nation as a whole.

Organization of the study

The study is organized and presented in five chapters. Chapter One begins with a general background of the study and this leads to the statement of the problem, purpose of the study and research questions. The chapter further states the significance, delimitation, and limitations of the study. Chapter Two looks at a review of literature relevant to the study. It discusses the theoretical framework on which the study was based and related conceptual issues. In particular, the concept of pedagogical content knowledge and its relationship to the present work is exhaustively explained. Empirical studies related to the study are also reviewed. Chapter Three gives a description of the research methods that were used in the study. It describes the research design, population, the sample and sampling procedure, data collection procedures, validity and reliability of the instruments, and data analysis procedures. Chapter Four is devoted to results and discussion of the findings in relation to the research questions. The last chapter, Chapter Five, contains the summary of the research process and key findings, conclusions drawn from the findings and the recommendations made to address the questions posed.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviews literature related to the study. It first takes a critical look at the conceptual framework for the study and discusses the concept of learning difficulties, areas of learning difficulties of students, causes of learning difficulties and strategies for addressing them. Secondly, empirical studies on various aspects of teachers' pedagogical content knowledge are reviewed. Finally, the chapter provides a summary of the literature review and indicates its implication for the current study.

Conceptual Framework: Pedagogical Content Knowledge

Current policies for the teaching profession demand that practitioners have a high level of proficiency regarding the several areas that integrate the teaching-learning processes. Teachers need to meet the challenges of helping themselves and their students to grow linguistically, socially, emotionally and intellectually (Hudelson, 2001). This requires that teachers dwell upon a vast range of knowledge in their work.

The term "teacher knowledge" or "teacher knowledge base" has long been a subject of intense research, and various definitions and explanations have been

offered. The term was primarily regarded as the basic skills required for teaching. It referred to subject matter knowledge and the implementation of pedagogical strategies (Pineda, 2002). Thus, teacher education programmes sought to provide teachers with discrete amounts of knowledge, "usually in the form of general theories and methods that were assumed to be applicable to any teaching context" (Freeman & Johnson, 1998, p.367). Wallace (1991) introduced the term "professional competence" to refer to the minimum requirements for the exercise of a profession. Other authors like Colton and Sparks-Langer (1993), Johnson (1999), and Crookes (2003) used the terms "professional knowledge base" or "professional knowledge" to refer to the sources for teachers' professional, personal and social views, as well as values which are relevant to teaching.

Shulman (1987) developed a knowledge base model for teaching made up of the following seven categories: content knowledge, general pedagogical knowledge, curriculum knowledge, knowledge of the learner, knowledge of educational goals and their philosophical bases, knowledge of educational contexts and pedagogical content knowledge.

The first category, content knowledge, has to do with being knowledgeable about the subject matter. In the context of teaching, content knowledge is what teachers teach. The second, general pedagogical knowledge is explained as the general set of methodologies and strategies that the teacher needs in order to carry out the teaching activity. The third category, curriculum knowledge, is described as the teachers' acquaintance of the curricular programme of the school and how they make use of it to favour their students'

teaching/learning processes. The fourth, knowledge of the learner, refers to the teachers' engagement with the students' learning processes, considering their physical, psychological and cognitive characteristics. The fifth component of Shulman's model refers to knowledge of educational goals and their philosophical bases. This component implies that teachers inquire about the educational system principles and the social expectations they are required to sort out as educators. The sixth category, knowledge of educational contexts, includes the characteristics of schools, classroom, communities and culture. The last aspect, pedagogical content knowledge refers to the "broad principles and strategies of classroom management and organization.

The present study takes Pedagogical Content Knowledge (PCK) as its conceptual framework. Shulman (1987) defined PCK as "the most useful form of content representation, the most powerful analogies, illustration, examples, explanations and demonstration – in a word, the ways of representing and formulating the subject to make it comprehensible to others…"(p. 9). Shulman went on to state that PCK includes a teacher's understanding of what makes the learning of specific topics easy or difficult; the conceptions and preconceptions that students of different ages and background bring with them to the learning of those most frequently taught topics and lessons.

In this definition, it can be revealed that there is a blending of content and pedagogy into an understanding of how particular topics, problems or issues are organized, represented and adapted to the diverse interests and abilities of learners and presented for instruction. This brings to the fore the importance of content,

pedagogy and students and the connections among them. Shulman (1986) emphasized that knowledge of multiple ways of representing content relies on the teacher's understanding of the content, and has as its purpose the transformation of that content into a form that students will understand.

PCK is a construct that consists of what teachers know, what they do and the reasons for which teachers do things. It can be noticed that PCK exists at the intersection of content and pedagogy. Thus it does not refer to a simple consideration of content and pedagogy in isolation; but rather to an amalgam of content and pedagogy, thus, enabling transformation of content into pedagogically powerful forms. Shulman argued that having knowledge of subject matter and general pedagogical strategies, though necessary, were not sufficient for capturing the knowledge of good teachers. To characterize the complex ways in which teachers think about how particular content should be taught, he argued for pedagogical content knowledge as the content knowledge that deals with the teaching process, including "the ways of representing and formulating the subject that make it comprehensible to others" (Shulman, 1987). If teachers were to be successful they would have to confront both issues (of content and pedagogy) simultaneously, by embodying "the aspects of content most germane to its teachability" (Shulman, 1986, p. 9). At the heart of PCK is the manner in which subject matter is transformed for teaching. This occurs when the teacher interprets the subject matter, finding different ways to represent it and make it accessible to learners.

Since Shulman's publication, the concept of pedagogical content knowledge has been extensively investigated. This has led to expansion of its meaning and, therefore, multiple definitions. Geddis (1993), for example, viewed pedagogical content knowledge as a set of special attributes that help someone transfer the knowledge of content to others. Kathryn (1997) also describes PCK as a type of knowledge that is unique to teachers and is based on the manner in which teachers relate their pedagogical knowledge (what they know about teaching) to their subject matter (what they know about what they teach). She went on further to explain that it is the integration or the synthesis of teachers' pedagogical knowledge and the subject matter knowledge that comprises PCK. College of Education and Human Services (2006) also describe PCK as the ability to contextualize classroom practice or clinical practice based upon knowledge of how people learn or change in a particular content area and how that learning or change can best be facilitated. They indicate that professional educators, leaders, counselors and candidates should be able to demonstrate PCK by anticipating and recognising common misconceptions, typical misunderstandings and developmentally appropriate response to instruction and assessment for the content area.

Since its introduction in 1987, PCK has become a widely useful and used notion. For instance, in the area of science education, scholars such as Anderson and Mitchner (1994); Hewson and Hewson (1988); Cochran, DeRuiter, and King (1993); and professional organizations such as the National Science Teachers Association (NSTA, 1999) have all emphasized the value of PCK for teacher

preparation and teacher professional development. The increased emphasis on PCK is based on Shulman's acknowledgement that "pedagogical content knowledge is of special interest because it identifies the distinctive bodies of knowledge for teaching" (p, 9). Moreover, the emphasis on PCK is consistent with the work of many other scholars and recent educational reform documents. The components of PCK as identified by Magnusson, Krajcik and Borko (1999) are orientation towards teaching, knowledge of curriculum, knowledge of assessment, knowledge of instructional strategies, knowledge of context and knowledge of students' understanding.

Orientation Towards Teaching

According to Magnusson et al. (1999), orientation towards teaching as a component of PCK consists of a teacher's knowledge of the purposes for teaching a subject at a particular grade level or the overarching conceptions of teaching a particular subject. Anderson and Smith (1987) also view this as an orientation towards teaching and learning because it has a significant impact on how teaching and learning should be conducted in the classroom. The knowledge and beliefs about teaching a particular subject serves as a conceptual map which guides instructional decision about issues such as daily objectives, the content that has to be taught, the use of text books, students' assignment, other curricular materials and the evaluation of students' learning (Borko & Putnam, 1996).

Orientations are generally organised based on the emphasis of the instruction. This can be purely process or content. Others may emphasize both

process and content which must also fit the national standard (goals or aims) for that particular subject. Magnusson et al. (1999) identified from their review of the research nine types of orientation in the teaching of science. They are:

1. Didactic - Here the instructional strategy is characterised by the teacher's ability to present information which is generally through lecture or discussion and questions are directed to the students to hold them accountable for knowing the facts produced by science. The goal of teaching using this type of orientation is to present facts in that particular subject.
2. Discovery - The instructional strategy employed in this type of orientation is student centred. Here students explore the natural world following their own interests and discover patterns of how the world works during their explorations. The goal for this type of orientation is to provide opportunities for students on their own to discover targeted concepts in the subject.
3. Inquiry - Orientation using this method is also investigation centred. Here the teacher supports students in defining and investigating problems, drawing conclusions and assessing the validity of knowledge from their conclusions. The goal for teaching is to represent science as inquiry.
4. Process - Here the teacher aims at helping students develop science process skills. Students are engaged in activities to develop thinking process and integrated thinking skills during instructional time.

5. Academic rigour –The mode of instructions is characterised by students who are posed with difficult problems and activities that require laboratory work and demonstration to be able to verify relationship between particular concepts and phenomena. The goal for teaching with this orientation is to represent a particular body of knowledge.
6. Conceptual change – The aim of the teacher is to facilitate the development of scientific knowledge by explaining concepts that challenge their students' conception and the instructional strategy employed is that the teacher facilitates discussion and debate necessary to establish valid knowledge claims.
7. Activity-driven - The main goal for using this type of orientation is to have students to be active with materials. "Hands-on" experiences or activities are emphasised during time of instruction for verification and discovery of new things. Students and teachers need to understand the purpose of a particular activity that can work effectively during teaching and learning.
8. Project-based science - The mode of instruction is students centred which implies that students' and teachers' activities centre on "driving" questions that organize concepts and principles and drive activities within a particular topic of study. The main goal in using this type of orientation is to involve students in investigating solutions to authentic problems which aid in their understanding.

9. Guided-inquiry - The goal of teaching constitute a community of learners whose members share responsibility for understanding the physical world, particularly with respect to using the tools of science. Both the teacher and the student participate in defining and investigating problems, determining patterns, inventing and testing explanations, and evaluating the utility and validity of their data and the adequacy of their conclusions. The mode of instruction is also learning community centred.

One interesting finding from research indicates that teachers can hold multiple orientations, including ones such as didactic and discovery that have incompatible goals for teaching science (Smith & Neale, 1989). This is also true in the teaching and learning of accounting. Accounting teachers are implored to have multiple orientations during instructional period.

Knowledge of Instructional Strategies

In this aspect of PCK, teachers' knowledge of instructional strategies can be grouped into two main aspects: knowledge of subject-specific strategies and knowledge of topic-specific strategies. What brings about the differences between these two strategies is the scope of application. Subject–specific strategies are broadly applicable; they are specific to teaching a particular subject. In other words, the strategies that are employed represent general approaches to or overall schemes for enacting instruction in a particular subject. Teachers therefore need to be knowledgeable about such strategies that are involved in the subject that they teach. It can be asserted that teachers' ability to use a subject specific

strategy may be dependent upon their knowledge of their subject matter and their understanding of the students they teach.

Topic–specific strategies are, however, narrow in scope; they apply to teaching particular topics within a domain of a subject. Teachers' knowledge of topic-specific strategies is useful for helping students to comprehend specific subject concepts. According to Magnusson et al. (1999), in science education for instance, there are two categories of topic–specific strategies. They are representation and activities.

Representations are ways that teachers use to represent specific concepts or principles in order to facilitate student learning, as well as teachers' knowledge of the relative strengths and weakness of particular representations (Magnusson et al., 1999). Representations can be illustrations, examples, models, or analogies. It is important to note that limited knowledge of topic-specific representation can have a negative impact on the subjects as well as the method of instruction that one will employ. An effective teacher must also judge what representation will be useful to support and extend comprehension of students in a particular teaching situation.

Activities include problems, demonstrations, simulations, investigations, or experiments that can be used to help students comprehend specific concepts or relationships. PCK of this type includes teachers' knowledge of the conceptual power of a particular activity; that is "the extent to which an activity presents signals, or classifies important information about a specific concept or relationship" (Magnusson et al., 1999, p.113).

Teachers' knowledge of strategies for teaching science is often limited (Anderson & Mitchener, 1994) and teachers' abilities to use subject-specific strategies may be dependent upon knowledge from other domains (Smith & Neale, 1989). According to Clermont, Borko and Krajcik (1994), experienced teachers seem to know more variations of a demonstration for teaching than novice teachers.

Knowledge of Curriculum

Knowledge of curriculum as an aspect of PCK requires that teachers develop knowledge of the programmes and materials that are relevant to the teaching of a particular subject domain and the specific topics within that particular subject domain. They also have to know the goals and objectives for students in the subjects they are teaching, as well as what students have learnt in previous years and what they are expected to learn later.

Knowledge of Assessment

Magnusson et al. (1999) assert that effective teachers should know what aspects of their subject should be assessed in a particular unit and what methods can be used to assess those specific aspects of student learning. For example, students' conceptual understanding may be adequately assessed by written tests whereas their understanding of investigation may require assessment through a laboratory practical examination. Student-centred teaching requires new methods

of assessment such as performance-based assessment and portfolios that highlight student generated products.

Teachers engaged in changing their knowledge and practices often realise that traditional assessment activities will not provide them the information about children's thinking that they need to plan, teach and evaluate their lessons (Smith, 1999). Development of new methods or specific instruments or procedures, approaches or activities that can be used to assess important dimensions of learning means that teachers must construct PCK for that. They have to know the advantages and disadvantages associated with employing a particular assessment device or technique and how to inform parents and schools heads about what understanding in a particular subject entails, and how children learn.

Knowledge of Context

Knowledge of context which is an aspect of PCK recognises that personal beliefs and images of teaching and learning that prospective teachers bring with them as they enter teacher education programmes appear to be based primarily on their early experiences as pupils. There are obvious connections between teachers' images of teaching and their classroom behaviour. Thus, changes in images can often be associated with changes in behaviour of both teacher and pupils. Teachers need to become skilful in using a range of specific management techniques, and be knowledgeable about the circumstances in which a given technique might best be used to promote student learning. The context for

practice influences the knowledge about classroom organisation and management that is most relevant for teachers to use.

A problem in the education of teachers has been the issue of how to integrate theoretical knowledge with practical knowledge in order to develop functioning professionals. Experience alone cannot lead to professional development nor can explication of a theoretical principle alone. Practical experience is necessary for the development of classroom experience and can be usefully supplemented by analysis of cases that provide realistic, contextualized exemplars of research-based principles of effective teaching. But it is context-specific pedagogical knowledge that contributes most directly to pedagogical content knowledge (Morine-Dershimer & Kent, 1999).

Knowledge of Students' Understanding

This aspect of PCK looks at students' understanding of teaching that takes place in the classroom. Teacher knowledge of prerequisite knowledge required for students to learn specific concepts includes knowledge of the abilities and skills that students might need. There are several reasons why students find learning difficult during teaching and learning and teachers should be knowledgeable about each type of difficulty. For some subjects, students find the topics they are learning difficult, because the concepts are very abstract and/or they lack any connection to the students' common experiences. Teachers need to know which topics fall into this category and what aspects of these topics students find most inaccessible (Magnusson et al., 1999).

The concept of PCK makes teachers to be aware of students' differing needs so that they can respond appropriately. Experienced teachers appear to have developed a conceptual framework in which knowledge and beliefs about the subject that they teach, subject matter, teaching and learning and students are interrelated in a coherent manner, while their teaching behaviour seems consistent with this framework (Brickhouse, 1990). Some teachers are unable to anticipate what students already know, what questions they find difficult, how they might respond to instructions and what questions they might ask. They, therefore, encounter difficulties tailoring representations to meet the need of learners (Zembal, Starr & Krajcik, 1999).

Concepts and principles for which students have misconceptions can be difficult to learn because misconceptions are typically favoured by students over subject knowledge; they are sensible and coherent and have utility for the students in everyday life. Although teachers may have some knowledge about students' difficulties, they commonly ignore students' misconceptions or struggle for ways to respond to them because of lack of knowledge necessary to help students overcome those difficulties. Besides PCK of materials and activities that interact with knowledge of students' naive ideas, teachers need teaching strategies that promote alternatives in those ideas (Smith, 1999). Teachers' knowledge about students' ideas in the syntactical area and about ways to help them construct more sophisticated understanding of the nature of the subject that they are learning is an additional kind of PCK for teaching the subject. Figure 1 presents a diagrammatic illustration of PCK and its different components.

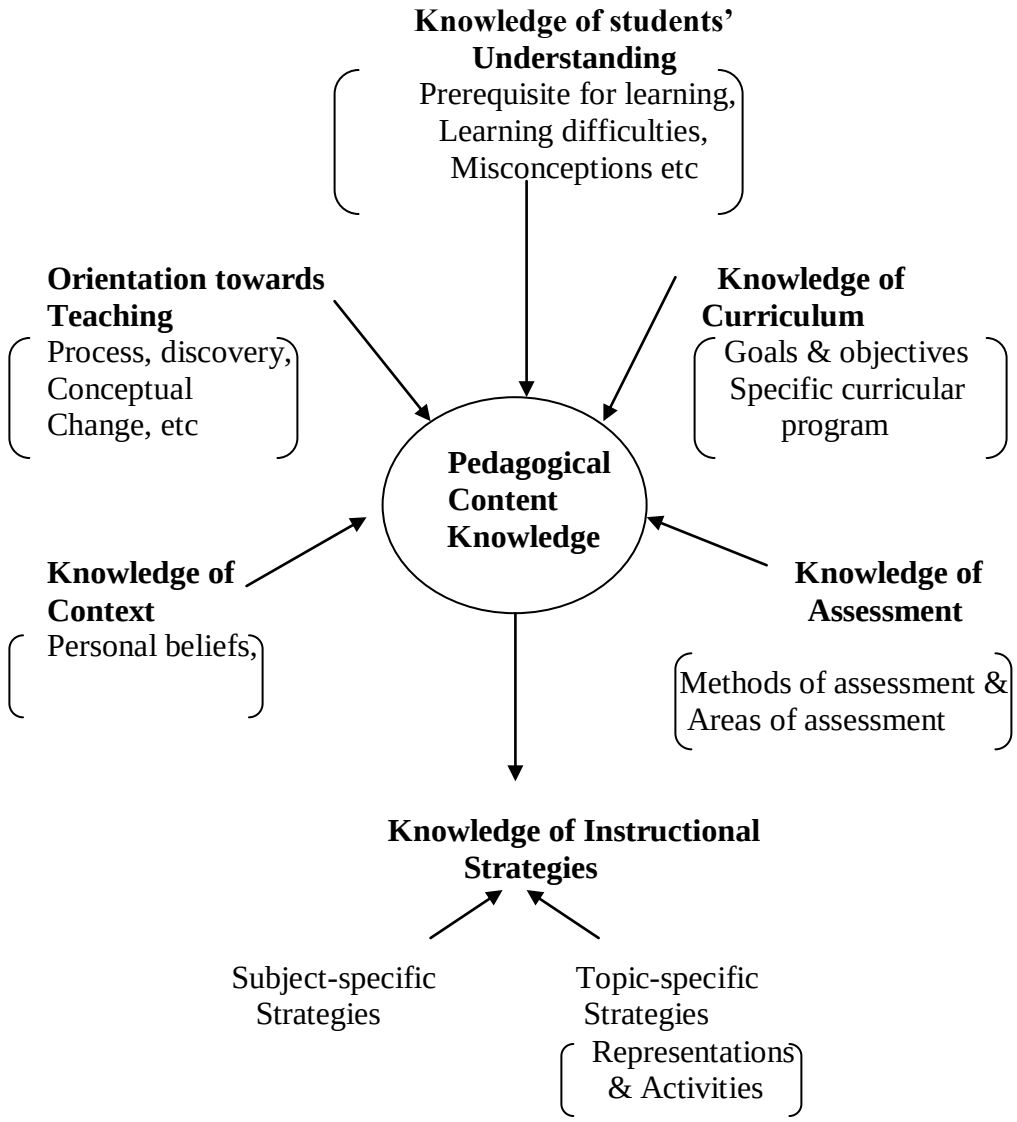

Figure 1: Pedagogical Content Knowledge

Studies of specific learning difficulties and students' conceptions with respect to specific topics are of particular interest. PCK encompasses understanding of the difficulties of conceptions and focuses on teachers' representation and instructional strategies to overcome students' misconception

(VanDriel, Verloop & de Vos, 1998). It is this aspect of PCK that constitutes the thrust of the present study.

Learning Difficulties

Even though many scholars have defined the term "learning difficulties", there is no clear and widely accepted definition of the term. Indeed there is an ongoing debate on the issue of definition. There are currently at least twelve definitions that appear in the professional literature but these disparate definitions do agree on certain factors (Child Development Institute, 2008).

In one sense, the term "learning difficulties" is used as a comprehensive term to refer to a range of problems that arise when information from the senses is not accurately received by the brain (Focus on the Family, 2006). The Australian National University (ANU, 1994) also adds that "learning difficulties" is a much broader term which refers to problems in developmental and academic skills which may arise from one or more of the following factors: intellectual disability, physical disability, inappropriate learning environment or emotional difficulties. A related but essentially different term is "learning disability". It is used to describe a group of disorders that affects a broad range of academic and functional skills including the ability to speak, listen, write, spell, reason and organize information (Coles, 1987).

The National Joint Committee on Learning Disabilities (NJCLD, 2005) defines the term learning disability as:

> a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to Central Nervous System Dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g. sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g. cultural differences, insufficient/inappropriate instruction, psychogenic factors) it is not the direct result of those conditions or influences.

The Australian National University (1994) explains that the key difference between "learning difficulties" and "learning disabilities" is that the latter is presumed to arise from neurological rather than intellectual, physical or sensory impairment. A learning disability or difficulty is not, however, an indication of low intelligence. Indeed, research indicates that some people with learning disabilities may have average or above-average intelligence (Hammill, 1990).

Child Development Institute (2008) suggests that any definition of the term "learning difficulties" should have one or two of the following factors:

1. People with learning difficulties have difficulty with academic achievement and progress. Discrepancies exist between a person's potential for learning and what he actually learns.

2. Learning difficulties show an uneven pattern of development (language development, physical development, academic development and or perceptual development).
3. Learning difficulties are not due to environmental disadvantage.
4. Learning difficulties are not due to mental retardation or emotional disturbance.

These factors buttress what Hannaford cited in Oliver (2008) stated that learning is not all in the head. It is full activation and balance of all parts of our mind and body system that allows us to become effective and productive thinkers. Therefore, if a student finds it difficult in articulating and balancing all parts of the mind and the body system in learning, then the person is described to have a learning difficulty.

Types / Sources of Students' Learning Difficulties

Most studies indicate that there are many types of learning difficulties. Learning difficulties can be categorized either by the type of information processing that is affected or by the specific difficulties caused by a processing deficit. There are four stages of information processing; namely, input, integration, storage and output (National Dissemination Centre for Children with Disabilities, NDCCD, 2004).

During the input stage in information processing for learning, information is perceived through the senses, such as visual and auditory perception. Difficulties with visual perception can cause problems with recognizing the

shape, position and size of items seen. Notwithstanding these difficulties, there could be problems with sequencing, which can relate to deficits with processing time intervals or temporal perception. Difficulties with auditory perception can make it difficult to screen out competing sounds in order to focus on one of them, such as the sound of the teacher's voice. Students who are not able to identify the teachers' voice from noisy environment may cause them not to be attentive hence not getting whatever is taught in the classroom which may also cause low performance for these students. Some students who have input difficulties in learning may appear to be unable to process tactile input. For example, they may seem insensitive to pain or dislike being touched.

The integration stage is the stage during which perceived input is interpreted, categorized, placed in a sequence, or related to previous learning (NDCCD, 2004). Students with problems in integration may be unable to tell a story in the correct sequence. They may be unable to memorize sequences of information. This may be exhibited when, for instance, accounting students with this problem are being asked to prepare a final account of a manufacturing firm. Because the preparation requires the students to follow some sequence of steps such as preparation of manufacturing account, trading profit and loss account, the income surplus account and finally, the balance sheet, involves a whole lots of items in each stage of the account preparation, this may affect the presentation of the work since students with this problem do not know the sequence they should follow. Again, such students may be able to understand a new concept but be unable to generalize it to other areas of learning. For example the concepts of

‘Debit’ and ‘Credit’, thus debiting the receiver and crediting the giver may be seen as a simple concept, but students who have integration difficulties in learning may not be able to do that simple task.

Another interesting problem that accounting students exhibiting this type of learning difficulties face is that, the students are able to learn facts but they are unable to put the facts together to see the "big picture." For example in preparing the final accounts of a company, the students might be able to learn the preparation of various aspects of accounts that form the final account well, but will not be able to integrate it in the preparation of the final accounts. The students may not know that in preparing the final accounts of a company, the gross profit / loss figure is used in ascertaining the net profit / loss and the net profit / loss in getting the income surplus and finally the income surplus figure for inclusion in the balance sheet. If such students are unable to integrate these aspects of the final account, they will have difficulties in learning the subject.

Learning difficulties occur at the storage stage of information processing when there is a problem with memory- that either the short-term (working memory) or the long-term memory. In the case of accounting students in the Senior High Schools, this research focuses mostly on the learning difficulties that occur as far as the short-term memory is concerned. By this aspect, accounting becomes difficult to learn when new materials are learnt without many more repetitions than is usual. It is pertinent to be repeating what students have been taught for them to be able to remember. For example, in adjusting accounts, which is usually done in the preparation of any final accounts, much time is not

spent in teaching it because teachers assume that students have been taught already. Students who have difficulties in storing of information in the short term memory are at risk. This is because the teacher may not spend much time or give more exercises to the students for them to become conversant with what the students have been taught. Students exhibiting this type of difficulty may have a problem, and to overcome this problem, the teachers need to repeat what they are teaching and give more practical exercises to the students for them to become conversant with what has been taught.

The last stage as far as processing of information is concerned is output. Information comes out of the brain either through words, that is, language output, or through muscle activity, such as gesturing, writing or drawing. Difficulties with language output can create problems with spoken language (NDCCD, 2004). For example, answering a question on accounting concept and principles would require a student to retrieve information from storage, organize his /her thoughts, and put the thoughts into words before he/she speaks. A student who has a problem in this area may not be able to produce the answer correctly. It can also cause trouble with written language for the same reasons. For instance, if a student is given a final account to comment on the financial status of the company (report writing) the student may face some difficulties in putting his/ her thoughts together.

Difficulties with motor abilities can cause problems with gross and fine motor skills. People with gross motor difficulties may be clumsy, that is, they may be prone to stumbling, falling, or bumping into things. Accounting students

with this type of problem may not be able to present their work well and teachers may have difficulties when it comes to reading and marking their scripts; because of awkward hand writing. They may fail not because they were not able to get the answers right but the way they presented their work made them perform badly.

Some Specific Learning Difficulties

It can be asserted that deficits in any area of information processing can manifest in a variety of specific learning difficulties. These specific areas are identified below.

Reading Disability

This is the most common learning disability of all students with specific learning disabilities; 70%-80% have deficits in reading (Aaron, 1995). The term "dyslexia" is often used as a synonym for reading disability; however, many researchers assert that there are different types of reading disabilities, of which dyslexia is one. A reading disability can affect any part of the reading process, including difficulty with accurate and/or fluent word recognition, word decoding, reading rate, prosody (oral reading with expression), and reading comprehension.

For instance, some students with learning disabilities in reading comprehension can read aloud with little or no difficulty pronouncing words, but they do not understand or remember what they've read. Reading aloud, their words and phrases are often read with no feeling, no change in tone, no logical phrasing, and no rhythm or pace. Their phrasing and fluency are often weak. They

frequently avoid reading and are frustrated with reading tasks in school. Naturally, reading comprehension problems affect many academic areas. People with learning difficulties in reading comprehension have general learning disability that is as high as, or higher than their peers. They simply have a skill deficit in this area. They may become frustrated because of the effort they must put forth to get their work done. They may appear as if they are not putting forth effort when in fact, they are just overwhelmed and are working harder than others. They know they are behind their peers, which affects their self-esteem and motivation. In solving this type of difficulty, diagnostic reading tests can be used to determine what specific types of problems are affecting the learner's reading skills. Through observations, analyzing student work, cognitive assessment, and possibly language assessment, educators can measure their students' progress and can develop individualised education programmes for the students.

The accounting student may exhibit this type of difficulty during a class presentation. Common indicators of reading disability include difficulty with phonemic awareness, the ability to break up words into their component sounds, and difficulty with matching letter combinations to specific sounds (sound-symbol correspondence). It is prudent to note that reading proficiency is crucial to success in school and also is essential for economic survival in a technology oriented world (Angiulli & Siegel, 2003).

Non Verbal Learning Difficulties (Math disability)

Another equally prevalent but less commonly known disability is arithmetic (mathematics) difficulties sometimes called nonverbal learning difficulties, developmental output failure, writing-arithmetic difficulties or visual spatial difficulties (Riccio, 2002). A math disability is mostly known by most researchers as dyscalculia. This difficulty can be manifested through the learning of math concepts (such as quantity, place value and time, addition, subtraction, multiplication, etc), difficulty memorizing math facts, difficulty organizing numbers, and understanding how problems are organized. Just like reading difficulties, math difficulties or disability can be a debilitating problem in school and in later life.

In today's world, mathematical knowledge, reasoning and skills are no less important than the ability to read. The effects of math failure during the years of schooling as well as math illiteracy in adult life can seriously handicap both daily living and vocational prospects.

Difficulty in Speaking and Listening

Difficulties that often co-occur with learning disabilities include difficulty with memory, social skills and executive functions such as organizational skills. This could be manifested by the student not being able to organize his/her work well before presenting it to the teacher. Another interesting manifestation of this difficulty is time management; here the student is not able to manage his/her time

when he/she is given work or a task to work on, but may always work behind time.

Auditory Processing Difficulties

Auditory processing is a term used to describe what happens when your brain recognizes and interprets the sounds around you. The "disorder" part of auditory processing disorder means that something is adversely affecting the processing or interpretation of the information (National Institute on Deafness and other Communication Disorder, NIDCD, 2004). Children with Auditory processing difficulties often do not recognize subtle differences between sounds in words, even though the sounds themselves are loud and clear. For example, the request "Tell me how a chair and a couch are alike" may sound to a child with auditory processing difficulties like "Tell me how a couch and a chair are alike." It can even be understood by the child as "Tell me how a cow and a hair are alike." These kinds of problems are more likely to occur when a person with auditory processing difficulties is in a noisy environment or when he or she is listening to complex information. Auditory processing difficulties go by many other names. Sometimes it is referred to as Central Auditory Processing Disorder (CAPD). Other common names are auditory perception problem, auditory comprehension deficit, central auditory dysfunction, central deafness, and so-called "word deafness."

The cause of Auditory processing difficulty is often unknown. In children, auditory processing difficulty may be associated with conditions such as dyslexia,

attention deficit disorder, autism, autism spectrum disorder, specific language impairment, pervasive developmental disorder, or developmental delay. Sometimes this term has been misapplied to children who have no hearing or language disorder but have challenges in learning. Students with auditory processing difficulty typically have normal hearing and intelligence. However, they have also been observed to

1. Have trouble paying attention to and remembering information presented orally
2. Have problems carrying out multistep directions
3. Have poor listening skills
4. Need more time to process information
5. Have low academic performance
6. Have behaviour problems
7. Have language difficulty (e.g., they confuse syllable sequences and have problems developing vocabulary and understanding language)
8. Have difficulty with reading, comprehension, spelling, and vocabulary

Several strategies that may be used to help students or children with Auditory processing difficulties may include:

1. *Auditory trainers* are electronic devices that allow a person to focus attention on a speaker and reduce the interference of background noise. They are often used in classrooms, where the teacher wears a microphone to transmit sound and the child wears a headset to receive the sound.

Children who wear hearing aids can use them in addition to the auditory trainer.

2. *Environmental modifications* such as classroom acoustics, placement, and seating may help. An audiologist may suggest ways to improve the listening environment, and he or she will be able to monitor any changes in hearing status.
3. Exercises to improve *language-building* skills can increase the ability to learn new words and increase a child's language base.
4. *Auditory memory enhancement*, a procedure that reduces detailed information to a more basic representation, may help. Also, informal auditory training techniques can be used by teachers and therapists to address specific difficulties.
5. *Auditory integration training* may be promoted by practitioners as a way to retrain the auditory system and decrease hearing distortion. However, current research has not proven the benefits of this treatment.

Visual Dyslexia

This common problem is the result of being unable to correctly understand information received through the eyes. For instance, a person with this dysfunction may not be able to pick out a pencil from several other objects. Similar letters and words may also be confused. The word “horse” may be seen as “house,” and the letters “b” and “d,” “q” and “p” and others are often confused. Letters are frequently transposed, resulting in “si” and “is,” “spot” for “stop,” etc.

Visually dyslexic students must repeatedly sound out difficult words such as “the” and “where.” These individuals spell phonetically so “enough” is often spelled “enuf.” Accounting students exhibiting this type of difficulty usually commits minor error and they make careless mistakes which could have been avoided if they do not have such difficulty. This therefore, affects their performance during examination.

Writing Disability

Speech and language disorders can also be called dysphasia/aphasia. Impaired written language ability may include impairments in handwriting, spelling, organization of ideas, and composition. The term "dysgraphia" is often used as an overarching term for all disorders of written expression. Others, such as the International Dyslexia Association, use the term "dysgraphia" exclusively to refer to difficulties with handwriting. It is important to note that, just having bad handwriting doesn't mean a person has dysgraphia. Since dysgraphia is a processing disorder, difficulties can change throughout a lifetime. However since writing is a developmental process, (children learn the motor skills needed to write, while learning the thinking skills needed to communicate on paper) difficulties can also overlap. If a person has trouble in any of the areas below, then the person is liable to having a dysgraphia or writing difficulty problem therefore, additional help may be beneficial.

1. Tight, awkward pencil grip and body position
2. Illegible handwriting

3. Avoiding writing or drawing tasks
4. Tiring quickly while writing
5. Saying words out loud while writing
6. Unfinished or omitted words in sentences
7. Difficulty organizing thoughts on paper
8. Difficulty with syntax structure and grammar
9. Large gap between written ideas and understanding demonstrated through speech.

There are, however, many ways to help a person with dysgraphia achieve success. Generally, strategies fall into three categories:

1. Accommodations: providing alternatives to written expression
2. Modifications: changing expectations or tasks to minimize or avoid the area of weakness
3. Remediation: providing instruction for improving handwriting and writing skills

Each type of strategy should be considered when planning instruction and support. A person with dysgraphia will benefit from help from both specialists and those who are closest to the person. Finding the most beneficial type of support is a process of trying different ideas and openly exchanging thoughts on what works best.

Intervention Measures for Students with Learning Difficulties

Intervention, according to Encarta Dictionary (2009), means an act of intervening, especially a deliberate entry into a situation or dispute in order to influence events or prevent undesirable consequence. An intervention may also be seen as a deliberate process by which change is introduced into peoples' thoughts, feelings and behaviours (Hazelden Foundation, 2009). The main objective of an intervention is to confront a person in a non-threatening way and allow them to see their self-destructive behaviour and how it affects themselves, family and friends. However, an intervention as used in this research refers to measures that are being put in place to address learning difficulties of students in the learning of accounting.

Students with learning difficulties can be a challenge for any classroom teacher. However, the teacher applying the pedagogy that he/she has learnt in the course of his/her training is believed to be able to help such students. The intervention measures that the teacher will put in place will be dependent on the learning difficulty that the student will exhibit. For instance, students whose attention seem to wander or who never seem to be with the rest of the class might be helped by the teacher walking around the classroom as the lesson is progressing and tapping the place in the student's book that is currently being discussed. Also the teacher can give a signal that someone is going to answer a question that has been asked. The teacher can also use the students' name in a question or in the material being covered.

In addressing the needs of students with a learning difficulty, the emphasis is on good rather than necessarily extra teaching approaches because most students with learning difficulties can perform successfully after minor adjustments or modifications to teaching and assessment methods (ANU Students' Service, 1994). That is, teachers can enhance students' learning through a modified and or different teaching methods and the use of adaptive technology and educational materials to address those particular needs of students. Again, the teachers can also provide alternative assessment and examination procedure which will still incorporate students' requirements in the teaching and learning of that particular subject. In the course of teaching, teachers may use demonstrations and concrete examples where appropriate and relate new or abstract concepts to everyday life. That is, teachers can frame materials by relating it to past classroom or personal experiences and highlighting new materials in the process of teaching and learning. In the area of accounting, as an example teachers can call students to comes to the board and make entries pertaining to questions so as to enhance their understanding of the topic being treated. Teachers can also give practical examples and encourage field trips to help in the teaching and learning of the subject.

ANU Students' Service (1994) suggests that the teacher should also explain complex ideas as clearly and as simple as possible. Repeating and rephrasing explanations and information will be the best option. Teachers should note that even though it is important to make room for students to ask for repetition, they should bear in mind that it is important to use the same language

when repeating so that they do not change the construct and defeat the purpose of repetition. Some disciplines are circumscribed by specialized terminology, but in such cases where the words cannot be reduced, a lexicon of relevant and technical words would be very helpful.

In conducting examination, ANU Students' Service (1994) states that teachers should provide practice examination questions that demonstrate examination format. Again, teachers should allow for the use of alternative modes of assessment. For instance, allowing students to demonstrate knowledge and understanding in oral and class presentation may help students who have a learning difficulty. It is important for every teacher to note that in conducting examination for students' with learning difficulty, even though teachers need to support the students in order to perform well as other students in the class, it is not suggested that basic or inherent requirement of a course should be reduced in other for those students with difficulty in learning to benefit.

Some students may also exhibit cognitive impulsive difficulties in the course of teaching and learning. That is, these students may have difficulty staying with the task at hand. The students' problem is exhibited in the sense that, their utterances seem irrelevant and their performance indicates that they are not thinking reflectively about what they are doing. Teachers can help such students to improve by probing irrelevant responses for possible connection to the question and having students repeat questions before answering.

Teachers should make sure that students learn the fundamental skills very well before they move to the next level. That is, it is good for the teacher to state

the topic at hand and proceed in a structured concrete manner. Teachers should progress from the obvious to the concrete and to the abstract. Mistakes should be corrected immediately and frequent progress assessment should be organised to students. Concerning classroom adjustment, teachers could modify assignments and testing procedures and they should not issue too many instructions at the same time. But rather break down task into the component parts and issue instruction for each part at a time (Root, 1994). Teachers should also allow time in advance for students to think about items to be covered in class. This could also be achieved by providing plenty of pre-discussion and pre-teaching activities.

Empirical Studies

This section takes a look at studies that have been conducted by other researchers on teachers' pedagogical content knowledge. It particularly reviews studies that focus on causes of students' learning difficulties, identification of these difficulties and intervention measures used by teachers to address those difficulties.

Causes/Sources of Students' Learning Difficulties

Ji-Won (2006) conducted a study on pre-service teachers' understanding and strategies on students' errors of reflective symmetry. The sample consisted of 54 pre-service teachers, 32 of whom were in their senior year of the elementary teacher preparation programme and the remaining 22 were prospective teachers with a math major seeking middle and secondary school certification. The study

examined how pre-service teachers understand reflective symmetry and what types of pedagogical strategies pre-service teachers use to help students who have misunderstanding of reflective symmetry. The major finding of the research indicated that pre-service teachers have problem with their subject content. Again, it was also found out that regardless of teachers being able to identify students' learning difficulties, the teachers could not help address them. This could serve as a cause of students' learning difficulty, because teachers were not able to address the difficulty that they had detected as students problems.

Penso (2002) investigated how Junior High School student teachers in Israel identified and described the causes of their pupils' learning difficulties in biology. The study surveyed 40 Junior High School student teachers in both urban and rural schools through observation and the use of teachers' diary. Penso (2002) identified the sources of learning difficulties and categorised them under four main headings, namely difficulties related to:

1. pupils cognitive and affective characteristics
2. the type of content
3. the teaching methods
4. factors inherent in the lesson.

On pupils' cognitive and affective characteristics, Penso (2002) explains that lack of students' prior knowledge does not enable students to cope with the lesson content in a meaningful way. Penso (2002) points out that pre-coordination acquired by the learners as a result of partial experience or inconsistency in thinking, lack of motivation and concentration affects pupils'

cognitive and affective characteristics in the course of their study. Content related difficulty may emerge as a result of the level of difficulty or complexity in abstraction in the course. On the teaching activity, Penso (2002) added that the focus was on two main factors. That is the structure of the lesson-content overloaded and unsatisfactory sequence. The other aspect was on the presentation of the content which comes as a result of inappropriate forms of representation which does not contribute to the process of learning. Difficulty relating to factors inherent in the lesson may be exhibited in the learning atmosphere that the students or pupils found themselves. That is the discipline problems, cohesiveness of class, competitiveness, order and organisation of the class. Penso (2002) concluded that the difficulty may exist prior to the process of teaching the students or pupils and some may come in the course of the teaching. This study is in a way congruent with the findings of Ji-Won (2006). He asserts that content related difficulties may translate into the use of inappropriate teaching methods thereby creating an uncomfortable atmosphere which results in students' apparent lack of interest in the lesson and subsequent poor performance.

Madsen and Olson (2005) also conducted a study on student teachers' use of learning theories to diagnose children's learning difficulties. The study investigated how two pre-service teachers' conception of learning theories transform their decision making during teaching and how they are able to identify the learning difficulties of their students. The paired-sampled case study examined research based framework papers, oral defence, students teaching practices and reflections on actions. Madsen and Olson's (2005) findings

indicated that understanding how people learn is the foundation of informed teaching, yet it was difficult for teachers to articulate and effectively use that understanding in their knowledge base to teach their students to understand. This is because teaching is a profession that requires the effective practitioner to possess a sophisticated knowledge base in content, pedagogy, and pedagogical content knowledge (Shulman, 1987), and to make constant decisions that rely on that knowledge base. This supports Kuchemann's (2007) assertion that the lack of teachers' content knowledge may be a major cause of their students' learning difficulty. This implies that the knowledge base that the teacher has or possesses helps him/her to be able to really bring what they perceive as causes of students' learning difficulties that the students encounter in teaching and learning. Madsen and Olson (2005) also added that teachers' inability to identify the learning difficulties of their students is a cause of their students' learning difficulties.

Chinn (2002) conducted a study on the difficulties students face in learning mathematics. The study involved 160 pupils selected from Ireland, The Netherlands and England. Chinn (2002) identified inappropriate teaching methods; problems in students' short term and long term memory; language problem; speed of working and sequencing as possible causes of students' learning difficulty. He indicated that the learning of math is very dependent on the teaching methods being appropriate to the individual. He explains that we do not learn in the same way and as math is a very sequential subject, in the sense that each new idea builds on previous learning, failure can be cumulative which may be a problem for the student in the future. However, if teachers are able to use the

right teaching methods during teaching, students may not face such problems. This is because according to Sprenger (2003) and Dunn and Dunn (1978), the use of different teaching method by teachers will help them identify students learning difficulty. They also explained that by the use of the right teaching methods teachers can accommodate different learning style of students. Also, students who have short term memory are identified by their teachers to be students who lose tracks in the middle of doing a multistep mental arithmetic problem and they have problem in absorbing a sequence of instructions. Likewise, students who may exhibit long term memory difficulties are perceived by their teachers to be students who cannot remember sequence of steps needed to complete a given task such as long division.

On the aspect of language difficulty, every subject or course has its own language or vocabulary but if students are not familiar with these languages it may pose a challenge to them and hence be a learning difficulty. In home economics for instance, the word "take away" is a food that has been packed but in mathematics and accounting for instance, it means subtract something from a given figure. Speed of working is also a possible cause of students' learning difficulties. Chinn (2002) mentioned that, in math the requirement that one must do it quickly tends to increase anxiety and thus decrease accuracy. Math also requires sequencing ability. If students have the problem for sequencing then it will be a problem to them. For instance, if they are to solve a long division or a BODMAS question, they may have problems because they may not know which one to start first, whether to start with the addition, subtraction, multiplication or

division. The difficulty can however be linked with language problems in the questions.

In conclusion, if the teaching methods are appropriate, then the students' memory will also be enhanced. This is because good teaching methods will help students to get the understanding of the content very well. If students have the understanding of what they are doing, then there is the likelihood that their speed of working and the sequence which they have to follow in solving a particular question will be made easier. The adverse of this poses a problem, hence a cause of their learning difficulty.

Ashcroft (1998) conducted a similar study on causes of students learning difficulty in mathematics. He identified factors such as student's visual problem, anxiety and conceptual ability as causes of students' learning difficulty. First of these factors is the individual visual problem as some students are not able to distinguish between symbols such as "+ and × or + and ÷" or the layout of work on the page. Direction is also another factor as students having difficulty in math are not able to be consistent in what they learn. Accounting as a subject, for instance, requires students to be consistent. On the contrary, an inconsistency that any accounting student will exhibit in the learning of the subject will lead to insecure learning.

Anxiety can also have a detrimental effect on working memory. Mathematics can create anxiety in most learners and in some cases teachers. Most researchers have indicated that if students pre- judge a question or a topic as "too hard" or difficult to solve or learn, then they avoid failure by not beginning to try

to solve or learn the question or topic. Most students who have this problem show much higher proportion of "no attempt" in examination or test; that is, they decided they are unable to get the question correct so they avoided failure by not attempting the question. However, Chinn (2002) points out that learning requires learner to take risk and get involved in the learning process because fear of failure can stop the learner from taking the risk necessary for learning.

Conceptual ability in math as identified by teachers indicated that students can achieve at or above this potential with appropriate teaching and motivation. In relating this to the speed of working and other factors mentioned above by Chinn (2002), there is an indication that students do not get the experience and practice necessary to develop skills and concepts. Another important factor to this is the problem that an early misunderstanding and initial uncorrected practice of an idea may create a dormant memory. It is important for teachers to ensure that each new idea is practiced correctly by their students. The study however, indicated that each person is an individual and will have an individual combination of different levels of severity of these factors. Notwithstanding this, with the help of their teachers, most of the difficulties associated with the factors can be alleviated or circumvented.

Sarkim (2004) conducted a case study on teachers' pedagogical content knowledge with 2 experienced and 2 beginning teachers teaching in the secondary school in Yogyakarta, Indonesia. The teachers were observed and interviewed. It was found out that teachers exhibited low levels of understanding and implementation of PCK. Teachers' knowledge and beliefs about teaching the

subject was limited to rote learning and solving problems, their teaching relied heavily on school text books, all of them had problems in their conceptual understanding and their teaching was mainly the lecture method with problem exercises. Sarkim (2004) inferred that if teachers' understanding and implementation of the PCK which is related to the subject that they are teaching is limited, then they will not be able to identify the learning difficulty of their students. On the aspect of teachers' beliefs being limited to rote learning, Sarkim (2004) explains that since teachers do not understand whatever they are teaching the students, what they resort to is to ask the students to memorize what is in the textbook without giving them any additional information to support what is in the textbooks. Students' performance turns out to be poor because they do not understand whatever they are doing especially during examination.

It must be noted that even though the lecture method has some advantages, not all subjects require the use of that method in teaching for students to get the understanding very well. In teaching accounting, for instance, the use of the lecture method may not help student to grasp the content very well. Sarkim (2004) recommends that teachers need to develop their understanding of PCK which will improve their teaching. This he states includes both internal (that is, teachers' competency and teaching strategies) and external factors (curriculum, learning, assessment system, socio-cultural student-teacher context, societal expectation towards education and societal measure of what constitute good teaching) in order to help address students' learning difficulties.

Hristovitch and Mitchltree (2004) also conducted a study on middle school teachers' pedagogical content knowledge on fraction and decimals. The study took place in rural middle school in the Northeast of America over the course of one year, as part of efforts for establishing a professional development programme for middle school teachers. The study focused on three sixth-grade teachers in the process of teaching the notion of fraction and decimals. Regular classroom observations were made and weekly meetings were held with teachers to discuss teaching strategies, students' learning and curriculum issues. Memos and notes were taken during the classroom observations and discussion held with the teachers.

The findings of the study revealed that all the three teachers were trying to employ innovative approaches for instruction by incorporating problem solving, classroom discourse and hands-on activities. However, their instructional activities were designed and carried out as goals in themselves and did not lead to conceptual understanding of mathematical ideas and the connections among them. Also, Hristovitch and Mitchltree (2004) found out that teachers' main concerns were that they experience difficulties in organizing and sequencing the mathematical topics in a way that will allow them to present mathematical ideas in a coherent and connected way. They had difficulty in identifying the conceptual prerequisite necessary for the introduction of new concepts and connecting it to other previous studies in mathematical ideas and engaging the students in the process of exploring them. Some of the difficulties experienced by the teachers are:

1. Learning theories: Teachers failed to develop the operational conception that is relating the theoretical aspect of the subjects that they teach with practical terms.
2. Connecting ideas: Teachers have problems in connecting previously studied topics or subject with new ones.
3. Employing hands on activities and problem solving
4. Sequencing the topics.

With these difficulties experienced by teachers, it can however be concluded that these problems can be a major cause of students' leaning difficulty in any subject area. This is due to the fact that teachers are believed to be the ones who impart knowledge into students. Therefore, if they face such difficulties, then there is the probability that students will also face the same problems, hence a learning difficulty.

Westwood (2006) also conducted a study on teachers' perspective on learning difficulties. The study comprised 311 teachers working in government, independent and catholic schools in South Australia. Westwood (2006) identified five possible causes of students' learning problems or difficulties. These factors include:

1. Students: Teachers very frequently identified factors such as students' limited intellectual ability, poor concentration span, restricted vocabulary and poor language skills, reading difficulties, lack of interest, poor motivation, negative attitude, bad behaviour, laziness, learned helplessness, among others to be causes of students' learning problems.

2. Family: This includes low educational standards of parents, no books at home, stress in the homes ,etc
3. Curriculum: The content and teaching methods may cause students to have learning problem. For instance, not all students can cope with teaching methods that require them to learn independently without teacher direction. Some students also seem to encounter difficulties because the content of the curriculum does not match their existing cognitive level, which is not real to them, or is not relevant for their current needs and interests.
4. Environment: Large classes, noise, seating arrangements, and lack of resources.
5. Student-teacher relationship: The quality of relationship between teacher and student was mentioned as a possible cause of students' learning problems and such issues include the student dislike for the teacher, an unwillingness to ask for help when confused, reluctance to accept help from the teacher, and the failure of some teachers to recognise and take into account the personal, social and emotional undercurrents in the lives of some students.

Westwood (2006) added that it is essential for teachers to understand that many very important attributes and aptitudes of students can be modified by skilled teaching. He added that students can be helped to become more successful in their approach to learning, rather than seeking to explain learning difficulties by reference to innate and unalterable features of the learner, or negative

influences in the learner's background. Teachers should therefore be encouraged to focus attention much more on appropriate teaching methods, curriculum content and the classroom environment since if these variables are more easily modified and improved, they can help solve students' learning problems. Dunn and Dunn (1978) were also in support of the classroom environment and they wrote that learners are affected by their immediate environment (i.e. sound, light, temperature, and design). They analyze other research and make the claim that not only can students identify their preferred learning styles, but that students also score higher on tests, have better attitudes, and are more efficient if they are taught in ways to which they can more easily relate. Therefore, it is to the educator's advantage to teach and test students in their preferred styles and the environment in which the student finds him/her self.

Identification of Students' Learning Difficulties

Kuchemann (2007) investigated prospective mathematics teachers' knowledge of students' learning difficulties and how they address those learning difficulties in relation to the limited process to definite integral. Four prospective mathematics teachers were observed and interviewed during their micro teaching. It was found out that teachers' knowledge of the content (subject) is of much importance in the teaching of the subject. The curriculum materials were also found to be another way that teachers could also use to identify the students' learning difficulties and lastly, students' preliminary prejudice and difficulties of the subject was also identified. Teachers' knowledge in the subject could help

them to identify a difficulty in students. If teachers do not have the content knowledge about the topic they are teaching, they will not be able to identify or know the difficulty that a student might be facing. This is in support of what Penso (2000) and Ji-Won (2006) stated that it is important for the teacher to have a content knowledge in the subject he/she teaches because without the content knowledge, teachers will not be able to identify the students' learning difficulties.

The (curriculum) syllabus that has been provided by the school may be a source of difficulty to the students, but teachers' ability to use the syllabus to identify the possible learning difficulties that the students may encounter during teaching and learning may be of help to the students. Teachers' knowledge about pedagogical skills in teaching of that particular subject may help him/her to identify the difficulty that the students may encounter in the course of teaching that subject or topic. This could be achieved because the teacher will know the assimilation level of the students, the level of understanding, the teaching methods to employ and the related topics that may pose problems to students.

On the aspect of students' prejudice about the topic or subject that they are learning, PCK includes an understanding of what makes learning of specific topics easy or difficult, if teachers are able to identity this preconception and the misconception that students bring to the class, it will be of much importance to help them to identify and overcome any difficulty. This is in support with what Shulman (1986) stated that "if preconceptions are misconceptions, which they so often are, teachers are most likely to be fruitful in reorganizing the understanding of learners, because those learners are unlikely to appear before them as blank

slates" (p.9-10). In that sense, teachers' understanding of preconceptions of students which may reveal itself as misconceptions of any topic or concept they are teaching is crucial.

Jordan, Gerten and Flojo (2005) also conducted a study on early identification and intervention for students with mathematics difficulties. The purpose of the study was to high-light key findings from diverse approaches taken by the researchers in the area of mathematics learning. The findings of the study indicated that for many children, mathematics difficulties are not stable overtime. This means early identification of the problem will be a base for early intervention. They also identified that the presence of reading difficulties seem related to slower progress in many aspects of mathematics. Almost all students with mathematics difficulties demonstrated problems with accurate combination. In relating this to the study of accounting, students who may have difficulty in reading subjects may exhibit that difficulty in the learning of accounting. This is because they may not be able to read and understand the concepts well to understand the requirement of the question. In the case of examination they may not be able to perform well since there may be technical words that may require special treatment.

Another study conducted by Van Steenbrugge, Valcke and Desoete (n.d.) builds on teachers' professional knowledge about mathematics learning difficulties. The study involved 918 primary school teachers from 243 schools who completed a questionnaire. Based on the data, an attempt was made to develop an overview of difficult curriculum topics in primary school

mathematics. The study revealed that some curriculum topics or the course content invokes difficulties to students. Since some mathematics topics seem to be more difficult than others and some curriculum topics are identified to be difficult in all primary school grades, teachers need to support their instructional activities with teaching aids. To help remedy the difficulty that the curriculum poses to students learning, Van Steenbrugge et al. (n.d.) added that the choice of curriculum learning packages could help to attain specific learning goals. Teachers can start to develop specific intervention to circumvent the occurrences of mathematics learning difficulties or compensate for some weakness in the curriculum.

Intervention Measures for Students' Learning Difficulties

Several studies on intervention measures to remedy students' learning difficulties have been compiled by Zhang and Xin (2008). The studies they reviewed were on algebra word problem instruction for students' with learning difficulties. The purpose of their review was to summarize the findings of published intervention studies for students' with disabilities or with low performance in algebra and provide suggestions for classroom practice. The studies compiled were based on experimental research which involved control groups and experimental groups, pre-tests and post-tests.

The study reported the use of representational intervention strategies which include pictorial, verbal or physicals aids and cognitive strategies intervention. Such cognitive strategies intervention were made up of mnemonic

strategies, graduated instructional sequence, problem solving strategy, and self-instruction to help students who have difficulties to learn and recall information. The study also reported effectiveness of cognitive strategies on improving students' algebra word problem solving. It was also identified that even though the curriculum that the teacher will be using will be good for learning, Class Wide Peer Tutoring (CWPT) was better to address students' independent learning. This means, teachers will go an extra mile to help students who may have difficulty in the subject that they are learning. On the aspect of students' assessment, the study indicated Assessment Results Immediate Efficacy (ARIE) to be a strategy that could help solve students' learning difficulties. That is when students are given prompt assessment results, they will be able to know where they fall short and the necessary measures to be taken to remedy the situation.

Zhang and Xin (2008) concluded that all intervention strategies that these researchers put in place in one way or the other improve students' performance across pre-test and post-test. But they also recommended that intervention effects with diverse students' population need to be addressed, especially in pre-algebra word problem instruction. Secondly, those effective strategies (CWPT, Assessment Result Immediate Efficacy, etc) in single subject design research should be examined in large sample experiments, to test the effectiveness of those strategies in a diverse population.

Hristovitch and Mitchltree (2004) also conducted a study on middle school teachers' pedagogical content knowledge of fraction and decimals in rural middle school in the Northeast of America. The study focused on three sixth-

grade teachers in the process of teaching the notion of fraction and decimals. Regular classroom observations were made and weekly meetings were held with the teachers discussing teaching strategies, students' learning and curriculum issues.

The study indicated that the teachers failed to develop the operational conception; that is, in relating the theoretical aspect of the subjects that they teach with practical terms (learning theories), they also have difficultly in connecting new ideas with the what they already know, employing hands-on activities and sequencing of topics. Hristovitch and Mitchltree (2004) therefore suggested that activities of the professional development programmes addressing teachers' pedagogical content knowledge should focus on enhancing teachers' ability to connect the idea of the particular subject that they are teaching, specifically on their skills, to work with prior notions that are conceptually connected with them. Also, teachers need further institution and opportunities for exploration on how to use effectively hands-on activities and manipulative skills in a classroom instruction. More specifically, teachers need help in making transition from using hands–on activities and manipulative skills in the classroom just as means for illustration of directly introduced mathematical concepts. These would serve as tools (hands–on activities and manipulation of classroom instruction) for exploration and discovery leading to students' deep conceptual understanding of mathematics.

Swanson (1999) conducted an intervention research for students' with learning disabilities in California in the United State. The study was a meta-

analysis which synthesized 272 research studies on the effects of various forms of instruction intended to improve students' academics (reading, mathematics), cognition (problem solving), or behaviour (social skills) learning difficulty. The findings indicated forms of instructions, subject area that were most affected by different instructional strategies and the factors that influence achievement as a possible intervention measure of students' learning difficulties. Swanson (1999) indicated that the most effective form of teaching children with learning disabilities combined components of direct instruction (teacher – directed, lecture, discussion and learning from books) with components of strategy instruction (teaching ways to learn such as memorization techniques and study skills). This implies that instructional components of this combined model, according to the findings, include sequencing – that is step by step prompts. He added that variation in how a study is conducted in the classroom can have a significant impact on the treatment outcomes that the teacher will employ to solve a student's learning difficulty.

Swanson (1999) recommended that researchers should investigate which treatments are most effective and causal processes by which they work. They should pay attention to the interactions of instruction and learning disabilities characteristics. Teachers should combine direct instruction with strategy instruction and focus on task difficulty, small interaction groups and structured questioning and directed responses. Again, teachers should match instructional techniques to the subject areas in which they are most effective. For instance,

reading comprehension should be taught with a combination of direct instruction and strategy instruction.

Westwood (2006) conducted a study on teachers' perspective on learning difficulties in South Australia with 311 teachers. The study indentified factors within the students, family, environment, curriculum, students-teachers relationship as possible causes of students learning problem. Westwood (2006) therefore provided the following intervention measures as way to help solve those learning problems of students. These include ingredients as direct instruction in metacognition, explicit training in task-approach strategies and the teaching of self-instruction and self-monitoring techniques. The study indicated that the most effective strategy for dealing with learning problems is to improve the quality of instruction. Using the above approaches, it has been realized that students with learning difficulties can be helped to achieve above average, with concomitant increases in confidence and self-esteem. Given this positive outcomes from many recent intervention programmes, together with a changing perspective on the causes of students' learning difficulty and the way teachers handle students with learning problems, teachers should be encouraged to help students to fix their problem rather than some teachers accepting too readily that those students with learning problems are 'beyond fixing', therefore they can not be helped. These students can be helped to become more successful by 'teaching them how to learn' and by attending to matters of instruction and curriculum content.

Jordan et al. (2005) discovered the following intervention measures to reduce students' learning difficulty in mathematics:

Magnitude comparison *(i.e., knowing which digit in a pair is larger)*. Taking accounting for instance with this intervention, students will be able to know which item (in terms of figure) they are to deduct from and those that they are to add when they are preparing accounts, and end of year financial statement; the item they are to take to the income surplus accounts, trading account, profit and loss account and the balance sheet. When the students become aware of these items the preparation of the financial statement becomes so easier for them.

Sophistication of counting strategies. With this, teachers should help students to know how they are to go about the treatment of each item in any question which pose a challenge to students. In accounting for instance, the treatment of unrealized profit in the trading and profit and loss account and the balance sheet is sophisticated, therefore teachers should help student by giving them all the possible strategies so as to be familiar with the treatment.

Fluent identification of numbers was also identified as a possible intervention measure. Students with learning difficulty should be taught in such a way that they can store the necessary concepts and principles in a manner that they could retrieve facts quickly, effortlessly and without error. Accounting students for instance, may be taught to be fluent in identifying the treatment of certain item when it comes to accounts preparation. When students are taught the way items are treated in the preparation of accounts, when a question is given they will not be found wanting.

Summary

Teachers' knowledge refers to the subject matter knowledge and the implementation of pedagogical strategies. In the context of teaching, content knowledge is what teachers teach and the pedagogical knowledge is also explained as the general set of methodologies and strategies that the teacher needs in order to carry out the teaching activity. The blending of teachers' content knowledge and the pedagogical strategies is of very much importance. Shulman (1986) refers to it as Pedagogical Content Knowledge (PCK). The conceptual framework that guided the study was PCK. The ability of the teacher to identify students' learning difficulties is an important aspect of the PCK.

Most literature indicated that causes of students' learning difficulties were associated with lack of teachers' knowledge, nature of the subject, inappropriate teaching methods etc. Many of such studies (Chinn, 2002, Ji-Won, 2006, & Penso, 2002) confirmed this cause of students learning difficulties. Teachers can identify their students' learning difficulties when they realize their students have reading difficulties (Jordan et al., 2005) or when they use the curriculum or syllabus to teach students (Kuchemann, 2007). Zhang and Xin (2008), Hristovitch and Mitchltree (2004) and Westwood (2006) provided an intervention measure for students' with learning difficulties by indicating that teachers should really check the type of teaching methods they employ in teaching.

The concept of Pedagogical Content Knowledge (PCK) has been explored in the context of several disciplines such as mathematics, english, science, computing etc. Since the studies reviewed are mostly mathematical subjects,

whatever outcome they had is hypothesize to reflect on accounting subjects, since they are all school and calculation subjects with similar characteristics.

Again, most research projects on learning difficulties of students in the classroom have been conducted in most areas in the world specifically in other related subjects except accounting. No research on the identification of students' learning difficulties in accounting has been conducted. This introduces some novelty into the work.

CHAPTER THREE

METHODOLOGY

This chapter describes the procedures by which respondents of the study were selected and how the data required for the study were collected and analyzed. It specifically takes a look at the research design, population, sample and sampling procedures, research instrument, data collection procedures and data analysis.

Research Design

Descriptive survey design was used in this study because of its relevance in the field of education. Some scholars such as Ary, Jacobs and Razavieh (1972) and Jones (1979) explain that descriptive research helps in studying the present problems of students, teachers, administration, curriculum, teaching/learning process, and the like, and to suggest some solutions to these problems. According to Polit and Hungler (1995), descriptive survey aims at describing, observing and documenting aspects of a situation as it occurs rather than explaining them. It is also important to note that this design is appropriate when a researcher attempts to describe some aspects of a population by selecting unbiased sample of individuals who are asked to complete questionnaires, interview or tests. In using descriptive

survey, one must be critical about the questions in that they should be clear and not misleading. This is because descriptive survey results can vary significantly depending on the exact wording of questions. For example, if the question asked seeks to delve into private matters of the respondents, they may not be completely truthful about the questions posed to them (Fraenkel & Wallen, 2000).

This notwithstanding, the design has the advantage of producing a good amount of responses from a wide range of people by telephone, mail or in person. This design provides an accurate picture of events. It also seeks to explain people's perceptions and behaviour on the basis of data gathered at a point in time.

Fraenkel and Wallen (2000) further stated that questionnaires require subjects who can articulate their thought well and sometimes put such thoughts in writing. It is again very difficult to get all the questionnaires completed for meaningful analysis to be made on them. Though these difficulties and disadvantages exist, the descriptive survey design was considered the most appropriate for assessing and analyzing the pedagogical content knowledge of accounting teachers in the central region, specifically teachers' ability to identify students' learning difficulties and the strategies that they use to remedy those difficulties. The design provided the platform to reach the respondents and seek their views on the topic.

The researcher used a descriptive survey method for the collection and analysis of the information in order to answer the questions which were posed. The use of this method in this study helped in describing and exploring in as

much as possible how teachers' identified the learning difficulties of their students' and the measures that these teachers used in addressing those difficulties.

Population

Central Region has 55 Senior High Schools comprising 49 public and 6 private schools (See appendix C). The researcher was, however, interested in only public senior high schools in the region. The justification for focusing only on public senior high schools was that most public school teachers are the same teachers who teach in the private schools and the inclusion of these teachers in the private schools would be a duplication of responses. Secondly, it is believed that most public school teachers are professional teachers compared to those in private institutions. Even though these nonprofessional teachers may have the content knowledge, it is assumed they lack adequate pedagogy in teaching the subject.

The target population of the study, therefore, consisted of all public SHS accounting teachers (comprising cost and financial accounting teachers) in the Central Region. All the accounting teachers in the public SHSs in the region were targeted because they were the subjects of interest. The accessible population was all public SHSs accounting teachers in the region who were willing to participate in the study.

Sampling and Sampling Procedure

Purposive sampling was first used to select those schools that offer accounting. Thus, out of the 55 SHSs in the region, 47 public SHSs offering accounting as a course of study were selected. Thereafter, those accounting teachers in the selected SHSs were used as the primary respondents of the study because by their positions, they possessed special qualification that enabled them to provide the required responses. Thus, the researcher used only the census survey in collecting the data. The justification for the use of census survey was that the researcher could cover all the respondents (target population) in the region since the number of accounting teachers in each school are not many and that the researcher was able to collect data from all accounting teachers who were willing to give out information from the schools selected for the study in the region. All the teachers therefore became participants because of their small number. In all, 72 accounting teachers were surveyed. The characteristics of the respondents are presented in Table 1.

Table 1

Demography of Participants

Variable	Subscales	N	%
Gender	Male	61	84.7
	Female	11	15.3
Age range	20-29	21	29.2
	30-39	35	48.6
	40-49	13	18.1
	50-59	3	4.2
Academic qualification	HND	6	8.3
	Bachelor's degree	62	86.1
	Masters degree	5	6.9
	Professional	6	8.3
Teaching qualification	Trained teachers	62	86.1
	Untrained	11	15.3
Teaching experience	1-5years	47	65.3
	6-10 years	18	25
	11-15 years	5	6.9
	16 years and above	2	2.8

Instruments

Data for the study were collected using questionnaire. The questionnaire was preferred to other instruments because it was deemed the fastest mode of collecting large amount of data from the respondents. The questionnaire was also believed to guarantee confidentiality and anonymity of respondents since it is generally self reporting, thereby, capable of eliciting more truthful responses. Also, it was less expensive as compared to the other forms of data collection techniques such as interviews and observation.

The questionnaire as an instrument, however, has some inherent problems. For instance, some of the items could be misinterpreted due to poor wording or differential meaning of terms, which might not elicit the responses expected by the researcher. However, the researcher saw to it that all those variables that might influence the validity and reliability of the questionnaire were taken care of.

The questionnaire was in two parts. Part one consisted of 5 items which was made up of the bio data of the respondents. Part two had 35 statements that were responded to using a 4-point Likert scale labeled: strongly disagree (a value of 1), disagree (a value of 2), agree (a value of 3) and strongly agree (a value of 4). The Likert scale gauges the degree to which there is agreement or disagreement with the statements representing a common issue. The Likert scale was preferred to other scales because it is the most simple, but an equally efficient approach in terms of graduation.

According to Fraenkel and Wallen (2000), close-ended questions are easy to score, use and code for analyses on a computer. This is because the entire sample responds to the same options, and standardized data are provided. Thus, ratings of items on the instruments were based on the same decisive factor. It was only question 16 that was open-ended, for which respondents were asked to provide their own responses. The questionnaire consisted of

1. Personal data of respondents
2. Major learning difficulties of accounting students
3. Sources of these learning difficulties
4. Identification of these learning difficulties
5. Interventions to these learning difficulties

The researcher followed the procedure suggested by Kumar (2005) to construct the items. The specific steps taken to develop the questionnaires are outlined below:

The researcher:

1. clearly defined and individually listed all the specific research questions
2. for each specific research question, listed all the associated questions that were answered through the study.
3. took each research question identified in step 2 and listed the information required to answer it.
4. formulated items to obtain this information.

Adhering to what Kumar (2005) stated in writing questionnaires, the items were developed for quantitative measures of teachers' ability to identify students'

learning difficulties and the strategies that they put in place to address and solve those difficulties. All the items that were developed were then integrated to form the questionnaire. It was then forwarded to the research supervisor for his professional opinion.

Validity and Reliability of Instrument

To ensure the validity and reliability of the instrument, the researcher pilot tested it in 4 SHSs in the Brong Ahafo Region, specifically, in the Sunyani Municipality. Representative samples of the categories of the target population were used for the pilot study. The schools selected for the pilot test were the Sunyani Senior High, Twene Amanfo Senior High/Tech, St James Seminary and Senior High and Notre Dame Girls Senior High. The justification for the selection of these schools was based on the fact that these schools were considered as sharing similar characteristic with the schools that were selected for the main study. The pre-test helped in revealing ambiguous statements, poorly worded questions that were not understood by respondents, unclear choices and double-barreled questions were also taken care of.

In all, 8 male and 4 female accounting teachers participated in the pre-test. The respondents answered all the questions that were asked in the questionnaire. Statistical Package for Service Solution (SPSS) computer programme was used to analyse each section of the questionnaire. Cronbach alpha was used to assess the reliability of the instrument. The test of reliability yielded a reliability coefficient of .784. A reliability coefficient close to .8 qualifies the instrument to be used for

the required data gathering (De Vellis, 1991). The reliability analysis of responses showed that the instrument possessed adequate reliability. As a result, the questionnaire was subjected to minor review. Few modifications were made before the main data collection was conducted. For example, suggestions given by the respondents pertaining to the wording of some aspects of the instruments were considered and the affected items were subsequently reworded to make them simpler and more comprehensible.

Data Collection Procedure

A letter of introduction was taken from the Head of Department of Arts and Social Sciences Education (DASSE), UCC, Cape Coast (see Appendix A) to the heads of schools which were selected for the study. That enabled the study to get the needed attention, support and co-operation from the staff. The questionnaire was personally administered to the respondents because the researcher wanted to ensure high accessibility and response rate.

The participating accounting teachers that were chosen for the study were briefed about the purpose of the study and the need to read all instructions before they were made to respond to the items. Some teachers completed and returned their questionnaire on the same day after administering them, while others gave a specific day and time to come for them. Follow-up meetings were held with the respondents who failed to provide the completed questionnaire on the agreed date. This was done to increase the return rate. The administration of questionnaires

and its collection took ten weeks to complete. In all, 85 questionnaires were administered and 72 of them were retrieved. This gave a return rate of 83.72%.

Data Analysis

The data collected were sifted to eliminate any incomplete questionnaire. The valid questionnaires were coded to reflect their corresponding categories in accordance with the following scoring key: strongly disagree-1, disagree-2, agree-3 and strongly agree-4. Afterward the scored questionnaires were organised using percentages, and frequency. Bar graphs were used in addition to give a picture of the situation on the ground.

Since a descriptive sample survey was used in gathering data, it was prudent for the researcher to use the same descriptive method in analyzing the information obtained. According to Ary et al. (1972), descriptive surveys do not typically require complex statistical analysis. Hence descriptive statistics were used in analysing the data. Measures of central tendency such as the arithmetic mean and the complementary measures of variability such as standard deviation were employed to do the analysis. There was no manipulation of any variable. The statistics used afforded the opportunity to report the dominant variables and how the respondents varied in their assessment of those issues. The responses were then summarized in order to draw conclusions from the results.

CHAPTER FOUR

RESULTS AND DISCUSSION

The focus of the study was to find out teachers' ability to identify the learning difficulties of their students in accounting and the strategies that they put in place to solve those difficulties. In identifying students' learning difficulties in accounting, the study examined variables such as major learning difficulties, sources of those difficulties, how teachers are able to identify those difficulties and the interventions that are put in place to address those difficulties. This chapter presents information obtained and discusses the findings of the study. The outputs were tabulated and graphed. Detailed descriptions and discussions of results with reference to each research question were interpreted and the results were related to existing research findings and theories.

Accounting Students' Major Learning Difficulties

The study sought to find out the major learning difficulties of accounting students. Hence research question one was posed, thus: What are the major learning difficulties of Senior High School accounting students in the Central Region of Ghana? To answer this question, items 1-16 on the questionnaire (see

Appendix B) asked teachers on the major learning difficulties of accounting students. Their responses are presented in Table 2 and Figure 2.

Table 2

Major Learning Difficulties

Learning difficulties	Code	Mean	Std. Deviation
Apparent inattention during lesson	1	2.18	0.76
Concentration difficulties	2	2.40	0.74
Difficulties in mathematical calculation	3	2.50	0.81
Minor errors and careless mistakes in solving accounting problems	4	3.31	0.62
Difficulty in test taking	5	2.94	3.66
Difficulty in understanding accounting terms	6	2.51	0.81
Difficulty in presenting answers	7	2.62	0.86
Difficulty in following instruction	8	2.62	0.66
Difficulties in sequencing and completing steps	9	2.75	0.69
Difficulty to understand certain topics	10	3.21	0.56

The first major learning difficulty accounting students have is the commitment of minor errors and careless mistakes in solving accounting problems which recorded the highest mean score of 3.31. The extent to which accounting teachers agreed with each other on this learning difficulty was relatively high. Thus the associated standard deviation was 0.62. It was the second lowest standard deviation that was reported with the learning difficulties.

With a mean of 3.21 the second major learning difficulty students' faced was the difficulty they had with understanding specific accounting topics. However, there was a standard deviation of 0.56 with this mean score. This was the smallest standard deviation obtained for all the mean scores for the learning difficulties identified. This implied that accounting teachers showed greatest agreement in respect of students' difficulty in understanding certain topics as the second major difficulty. The data indicated further that the learning difficulty with the minimum mean score was student's apparent inattention during lesson. Nevertheless, accounting teachers' consensus on this matter was relatively low, with a standard deviation of 0.76 associated with the mean score.

Accounting teachers are primarily concerned about common errors students make in accounting and their inability to understand certain accounting topics. They however indicated that inattention in class was a minor learning difficulty that accounting students face. The first and second major students' learning difficulties were all content-based, yet the least diagnosed learning difficulty was related to classroom management. Standards of pedagogy require that teachers should know classroom organisation in order to make teaching

effective. The implication for the data indicated that accounting teachers' concerns are geared towards improving their content knowledge to help students curb the problems identified. They were more comfortable with their pedagogical knowledge and its application in their teaching. However, this finding contradicts what Ji-Won (2006) and Kuchemann (2007) had that, teachers they studied had problems regarding content knowledge. They were of the view that since teachers had content knowledge difficulty, it would be very difficult for them to identify students who had learning difficulty. In the present study, accounting students' major learning difficulties were not associated with their teachers' lack of knowledge about the content of accounting but due to certain students' characteristics such as inattention in class and common errors and careless mistakes. Shulman (1986) agreed that every effective teacher must integrate pedagogy and content into an understanding of how particular topics, problems or issues are organised, represented and adapted to the diverse interest and abilities of learners and presented for instruction. If teachers want to be successful in their teaching, they would have to confront both issues of content and pedagogy. The bar graph (Figure 2) also presents a pictorial view about the major learning difficulties of accounting students.

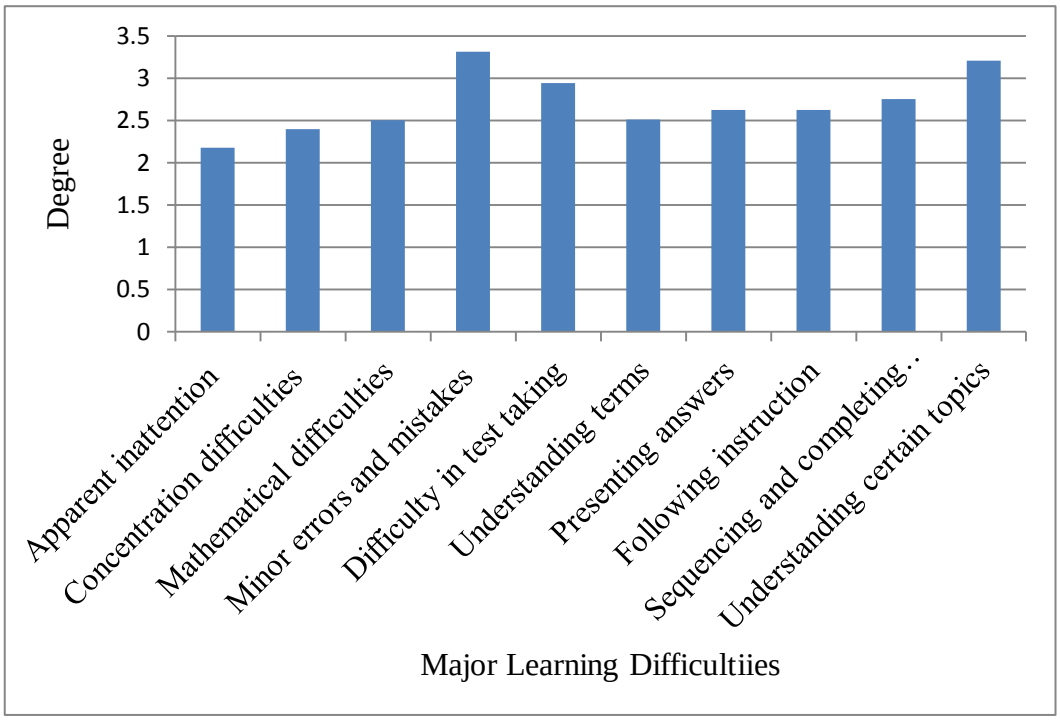

Figure 2: Students' Major Learning Difficulties

Topics in which Students have Difficulty

There are some topics in accounting that students find difficult to understand. Accounting teachers' assessment of such difficult topics is discussed in this section.

Nineteen teachers (25.3%) indicated that suspense accounts, branch accounts and partnership account are topics in accounting that their students find difficult to learning. This was followed by depreciation of fixed assets; adjustments and accounting ratios of which 15 teachers (20%) said their students' have difficulty in those particular topics. Nine teachers (12%) also indicated that students' have difficulty in company accounts, double entry principles and incomplete records. Some teachers (41.4%) listed topics such as correction of

errors, single entry, control accounts, bank reconciliation, receipts and payments, and income and expenditure accounts as other difficult topics. However only 1 teacher (1.3%) indicated that students' have difficulty in accounting for non-profit making organisation.

The majority of the teachers indicated that suspense account, branch account and partnership account are really difficult topics. This shows that indeed students have difficulty in those particular topics which are all reserved for years 2 and 3 of the modified SHSs programme. Students might have had sound foundation in the first year, but ones they encounter problems in those topics in the upper levels, they are likely to encounter problems in their WASSCE examination. One factor is a change in the teachers. Once a teacher gives sound foundations, that same teacher is highly likely to build better on such foundations. Usually SHSs have several teachers assigned to specific classes in the various levels. So no one teacher instructs a class throughout the entire programme. The curriculum too may present some difficulty and as students graduate to a higher class, the content becomes more difficult. This may militate against the enthusiasm of students to learn and thus serve as a fondness for such topics.

Sources of Students' Learning Difficulties

The study sought to find out the sources of learning difficulties of accounting students. Hence research question two was posed, thus: what do Senior High School accounting teachers in the Central Region perceive as possible sources of students' learning difficulties in accounting? To answer this

question, items 17-22 on the questionnaire asked teachers on sources of students' learning difficulties in accounting. Their responses are presented in Table 3.

Table 3

Sources of Students' Learning Difficulties

Sources	Mean	Std. Deviation
Students are scared of numbers	2.15	0.78
Laws and principles confuse students	2.90	0.56
Technical words confuse students	2.85	0.69
Inadequate previous knowledge	3.00	0.89
Inappropriate subject combination	3.01	1.00
Large class size	3.28	0.81

Accounting teachers agreed to the fact that a large class size hinders their ability to reach out to all students in the class. With a mean score of 3.28, most accounting teachers agreed with each other and rated that source as the most pervasive source of students' learning difficulty. However, their thought deviated from each other at the rate of 0.81.

The second highest source of students' learning difficulty was inappropriate subject combination which had a mean score of 3.01. Here teachers agreed to the fact that inappropriate subject combination is a source of students' learning difficulty. Its related standard deviation was 0.81. The statement

"students are scared of numbers" recorded the lowest mean score as a source of students' learning difficulty. The mean score was 2.15 with a standard deviation of 0.78. Though students being scared of numbers has the lowest rating as far as the mean score is concerned compared with the other mean score, its standard deviation indicates that teachers are in high agreement that is not a major source of students' learning difficulty.

The identification of large class size by teachers as a major source of students' learning difficulties is of much significance. This is because for effective teaching and learning to go on well in the classroom, teachers should have a direct contact with their students. This will in particular help students who may have difficulties especially during the course of the teaching and learning process. Teachers' inability to reach out to all students decreases the student-teacher interaction in the classroom, thereby causing poor monitoring of students' work. This can eventually have adverse effect on students' learning. This is in agreement with what Dunn and Dunn (1978) wrote that learners are affected by their immediate environment. Supporting this assertion, Westwood (2006) also indicated that the causes of students' learning difficulty is associated with environmental factors such as large class size, noise, seating arrangement and lack of resources. They concluded that students can perform well or have better scores and positive attitudes towards a subject and be more efficient if they can move easily, relate well with their teacher and their classmates during the lesson. Penso (2002) expressed a similar view that the learning atmosphere may cause students to have difficulty in a particular subject. The class size and the

overcrowding in the class room may not allow the teacher to be able to attend to all students in the cause of teaching.

On the issue of inappropriate subject combination, accounting teachers were of the view that students do not combine the appropriate subjects. In business studies, the teaching and learning of subjects like economics, elective mathematics, business management and cost accounting are interrelated. Students should therefore, be encouraged to combine these subjects which will inturn improve their performance. On the contrary, students who combine subjects like literature, French, among others, to the study of accounting may have problems in the study of accounting. This is due to the lack of horizontal integration in the curriculum. In response to inappropriate subjects' combination, Madsen and Oslon (2005) made a statement that the learning of subjects such as mathematics, to which accounting is related, is very dependent on the teaching being appropriate to the individual. This is because the learning of accounting is reinforced by lessons taught and studied in other subjects like economics, business management and cost accounting. So failure to choose the appropriate complementary subjects to the study of accounting makes the study of accounting difficult.

Within the study of accounting itself, failure to understand a previously taught lesson makes it difficult for students to appreciate subsequent concepts. This is because students learn from the known to the unknown. The significance of previous knowledge in a lesson is a factor of sequencing in the curriculum. Yet accounting students being scared of numbers may cause them to face a whole lot

of problems such as sequencing. Accounting as a subject deals with numbers and if students are scared of numbers, they may not be able to perform well and this may be exhibited in their inability to follow the appropriate sequencing related to the accounting process. Chinn (2002) found out that difficulty with sequencing is another factor that may cause students to have learning difficulty. In calculation subjects such as accounting, the sequence in which concepts are presented is important for students to understand the lessons. This therefore, implies that if students are scared of numbers and they failed to understand the previous lesson, a smooth transition to the next lesson and its understanding would be difficult.

In a situation where teachers have limited understanding of that particular subject, they may not be in a better position to help students who have difficulty. For instance, if a teacher is not familiar with certain concepts, then students who may have the same problem may not be able to receive any help from him or her. A case is the inclusion of Value Added Tax (VAT) in the curriculum of SHSs in Ghana. Many accounting teachers whose background training does not support the teaching of such a concept may have to defer such a lesson until they are adequately resourced to teach it. Therefore, students may be denied the opportunity to go through the sequences of experiences in the syllabus. This may cause a learning difficulty for students. In a study by Ji-Won (2006), it was found that some teachers have limited understanding while others are confused in the teaching of a particular subject. This may create some anxiety in teachers. This confirms an earlier finding made by Ashcroft (1998) that anxiety can have a detrimental effect on the working memory of students and teachers as well.

Even though these problems exist, if in-service training programmes are organised for accounting teachers and the appropriate teaching methods adopted, the problem could be minimised. Swanson (1999) indicated that the use of several teaching methods can be of help to students with a learning difficulty. This is because students do not have the same assimilation level. Their rates of absorption may be different. The laws and principles of accounting are many and they may be confusing. If teachers do not adopt the right method in teaching, students may be confused. Such confusion may permeate throughout their entire study. They may face those difficulties all along because it is upon these laws and principles that accounting is based.

Gender Influence for Determining the Sources of Students' Learning Difficulties

Differences in the perception of accounting teachers regarding the sources students' learning difficulties as influenced by their gender was ascertained. Table 4 and Figure 3 present the descriptive statistics of teachers' perception of sources of students' learning difficulties according to the teachers' gender.

Male accounting teachers rated large class size as a major source of students' learning difficulty with a mean score of 3.30 and a standard deviation of 0.82. Male teachers rated inappropriate subjects' combination as the second commonest learning difficulties among students. The male teachers had a mean score of 3.02 and a standard deviation of 1.01 for the source.

Table 4

Distribution of Perceived Source of Students' Learning Difficulties by Teacher Gender

Sources	Male		Female	
	Mean	Std. Deviation	Mean	Std. Deviation
Students are scared of numbers	2.15	0.75	2.18	0.98
Laws and principles confuse students	2.86	0.53	3.09	0.70
Technical words confuse students	2.77	0.67	3.27	0.65
Inadequate previous knowledge	3.02	0.83	2.91	0.12
Inappropriate subject combination	3.02	1.01	3.00	1.00
Large class size	3.30	0.82	3.18	0.75

The lowest source of learning difficulty rated by the male accounting teachers was that students are scared of numbers in learning accounting. Male teachers had a mean score of 2.15 and a standard deviation of 0.75 for this source of difficulty.

On the other hand, female accounting teachers rated technical words that confused accounting students as the major source of students' learning difficulty with a mean score of 3.27 and a standard deviation of 0.65. The second highest source as agreed by female teachers was that of large class size. They obtained a mean score of 3.18 and a standard deviation of 0.75 in respect of this source of difficulty. The least source rated by female accounting teachers was that students'

are scared of numbers. They had a mean score of 2.18 and a standard deviation of 0.98 in their view on this source as a learning difficulty for students.

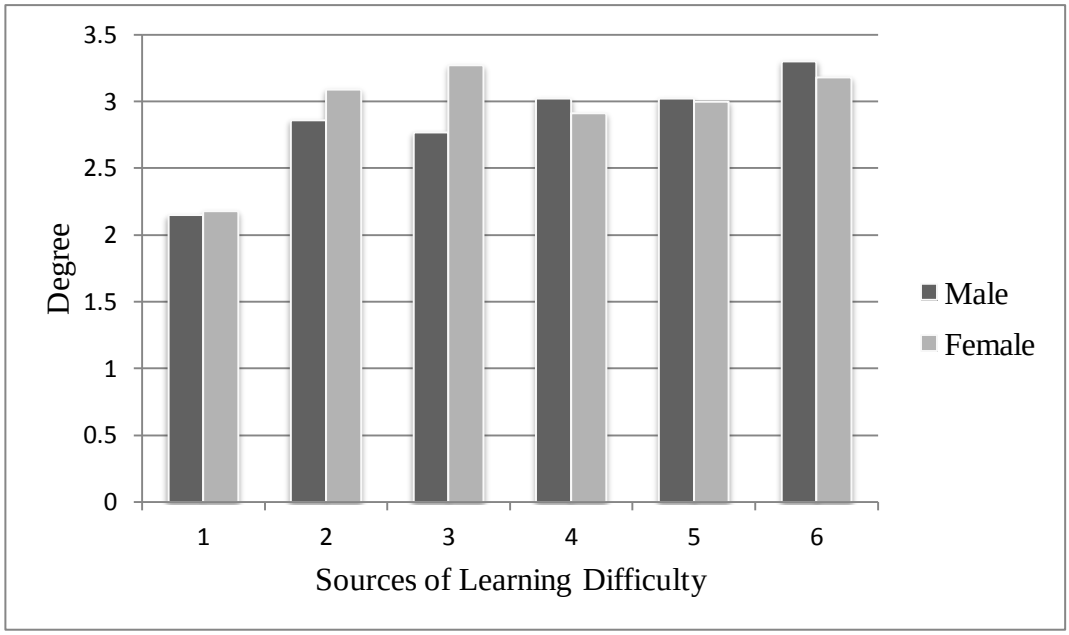

Figure 3: Teachers' Gender and Assessment of Sources of Students' Learning Difficulties

Comparatively, whereas male teachers rated large class size as the commonest source of students' learning difficulty, female teachers rated that as the second highest. In perceiving large class size as a major source of students' learning difficulty, there is an indication that male teachers seem to focus more attention on the pedagogical aspect of teaching and learning. It could be deduced that male teachers were not so much concerned about the content as of the teaching methodology. This could, however, be associated with the fact that male teachers believed that the students' had the content already and it is the pedagogy that they lacked and which should be addressed. Female teachers, however,

considered technical words that confused students when it came to the study of accounting as a major source of students' learning difficulty. The implication of this is that female teachers perceived content as the most important factor when it comes to the teaching and learning of accounting whereas male teachers perceived the lack of pedagogy as the major source of students' learning difficulty. Female teachers also agreed that large class sizes hinder their ability to reach out to all the students, thereby hindering students' learning and understanding.

The statement "students' are scared of numbers" was rated as the least source of students' learning difficulties by both male and female teachers. Even though it was rated as the least source, female teachers had the highest mean score but the extent to which they agreed with each other was low.

How Accounting Students' Learning Difficulties are Identified

The study again sought to find out how teachers identify students' learning difficulties. This was the focus of research question two, which asked: How do Senior High School accounting teachers in the Central Region identify the learning difficulties of their students? To answer this question, items 23-28 on the questionnaire asked teachers to indicate how they identify their students' learning difficulties. Table 5 displays the result.

Table 5

Identification of Students' Learning Difficulties

Identification	Mean	Std. Deviation
Through observation	3.28	0.48
During scoring and grading	3.35	0.59
Reading of chief examiners report	2.60	0.94
Report from students	2.47	0.79
Through students who have problem themselves	3.26	0.58
Through the type of questions asked in class	3.21	0.63

Accounting teachers agreed that they identify their students' learning difficulties during scoring and grading of their students' script. The extent to which they agreed to this statement was exhibited with a mean score of 3.35 and a standard deviation of 0.59. The standard deviation shows that most teachers agreed with each other to that statement. Even though it is the third least standard deviation, it means that the extent to which teachers agreed on this phenomenon is comparatively higher.

The second highest means of identifying students' learning difficulties was through observation which had a mean score of 3.28. This means that teachers are able to identify their students' learning difficulties by observing their students during teaching and learning process. The standard deviation with this

learning difficulty was 0.48, being the least standard deviation in the category. The implication is that indeed most teachers agreed to the fact that they are able to identify their students' difficulties when they observe them.

The least mean score on teachers' means of identifying students' learning difficulties was 2.47 with a standard deviation of 0.79. Apparently most accounting teachers did not agree to the fact that reports from other students help them to identify their students' learning difficulties. The extent to which they disagreed on this matter was exhibited when they rated it as the least among all the statements made. The amount of dispersion of their ratings signifies that accounting teachers did not want to rely on informant students to be in the known about their students' performance. They would rather want to find out the situation themselves. This may occur through scoring and grading of these students scripts or direct observation during or after instruction. Often, accounting teachers may consider using informant students' reports as the starting point to find out the situation themselves. In this case accounting teachers may use key informant such as the problem students' colleagues. After such reports, accounting teachers observe the problem students. The type of questions that these students' may ask in class may equally confirm that such students are having difficulty in that area of the course and this may help the teacher to identify such student as having a learning difficulty. This may be achieved when students are actively involved in the lesson and the type of teaching and assessment methods that teachers use in the process of teaching and learning. If a teacher should apply a wrong assessment method, the results obtained might not

give a true reflection of the students' performance thereby a wrong judgement may be made about students' performance. Occasionally students with a learning problem may approach the teachers in a bid to get a solution to the difficulty that they face.

Sprenger (2003) found out that in using different teaching methods, the teacher will be able to identify students who have learning difficulties and to accommodate different learning styles of students. This statement was also in agreement with that of Penso (2002) who stated that a method of teaching is a way to identify students' difficulties. These findings contradict what accounting teachers agreed to as the way they were able to identify their students' learning difficulties. They stated that they were able to identify students' learning difficulties by observing the students. In supporting this argument, Kuchemann (2007) agreed to what the teachers indicated that they could identify their students' learning difficulties by observing them. When teachers have knowledge about their content then they are able to identify their students' learning difficulty just by observing their performance. Also the findings supported Jordan et al.'s (2005) assertion that during scoring and grading, when students exhibit any type of difficulty, teachers are able to identify it.

Intervention Measures for Students' Learning Difficulties

Research question four sought to find out the intervention measures accounting teachers employ to help address students' learning difficulties. This was posed as: How do Senior High School accounting teachers in the Central

Region address the learning difficulties of their students? Items 29-49 on the questionnaire were used to elicit responses in this regard. The responses of accounting teachers are presented in Table 6.

Table 6

Interventions Employed to Address Students' Learning Difficulties

Intervention	Code	Mean	Std. Deviation
I get students' attention before I instruct them	1	3.19	0.52
Actively involve students	2	3.53	0.53
Teach specific methods of self monitoring	3	3.03	0.63
Students to proofread their work	4	2.90	0.81
Enough time during test taking	5	3.04	0.66
Teaching of test taking skills	6	3.21	0.67
Oral testing	7	2.94	0.75
Clear readable and uncluttered test forms	8	3.06	0.63
One direction at a time	9	3.26	0.53
Breaking of total task into workable pieces	10	3.35	0.59
Example and steps to accomplish task	11	3.38	0.52
Adherence to laws and principles of accounting	12	3.54	0.60
Remedial instructions for students with difficulties	13	3.18	0.66

In response to research question four, a majority of accounting teachers agreed that accounting teachers must emphasize strict adherence to the laws and principles of accounting in order for students to see the importance of paying attention to these laws and principles. With a mean score of 3.54 and a standard deviation of 0.60, this intervention was rated the highest among all the intervention measures. Students' active participation in class was the second highest intervention measure used by accounting teachers. It had a mean score of 3.53 and a standard deviation of 0.53. The implication of these statistics is that accounting teachers actively involve students in instruction to help students to overcome their learning difficulties. Students should be active participants rather than dormant during instruction. Such involvement of students during teaching and learning helps them to be able to recall whatever activity that took place during instruction.

The least intervention measure that accounting teachers used was allowing students to proofread their work before collecting them to score. Most accounting teachers did not agree to the use of this intervention. The strategy had a mean score of 2.90 and a standard deviation of 0.81. Most teachers were of the view that the time allotted to tests and examinations was enough to enable students proofread their work before submission for assessment. Therefore, did not see the need for providing extra time for proofreading. The teachers, therefore, did not agree that it was a major intervention measure in remedying students' learning difficulties.

Accounting teachers emphasising strict adherence to the laws and principles of accounting was a good intervention strategy. Before one can perform well in any discipline, one has to know the laws and principles in that discipline. Without that as a bench mark, no matter how brilliant that student is, the student cannot perform well as expected. The student who lacks knowledge of the necessary laws and principles that underpin a particular discipline always exhibits some difficulty in the learning of that discipline. Even though difficulties may be encountered in accounting, when the student is taught the fundamental concepts, laws and principles in accounting, the students may be prompted when he/she is faced with a problem which requires the application of these laws and principles.

Accounting teachers emphasising the content knowledge which include those fundamental concepts, laws and principles of accounting implied that they were agreed to the fact that students need to get the content very well. These fundamental concepts, laws and principles of accounting are built on at each level that accounting is taught in the education system. The accounting teachers were of the view that without a proper foundation, students' may have difficulty in their studies.

Students' involvements in teaching and learning activities that go on in the classroom go a long way to help students overcome the difficulties that they may encounter in accounting. Students' participation in instructions may take the form of asking or answering questions, being called upon to make entries of a transactions on the board, project assignments, among others. Students may have the concepts, laws and principles but without their active involvement in the

lesson, they may forget whatever they have been taught. Most students become very good when they are actively involved in the task at hand rather than when they are passive recipients.

Histovitch and Mitchltree (2004) explain that if teachers are able to organise and sequence their topics in such a way that they will be able to present ideas in a coherent and connective way, they will be able to solve students' learning difficulty. This is achieved when teachers are able to connect the concepts of the subjects that they teach. Jordan et al. (2005) found that teachers helped students by giving them all the possible strategies so as to be familiar with solving questions given to them. The accounting teachers' strict adherence to the laws and principles of accounting is inline with Jordan et al.'s finding. In confirming the finding of the study that accounting teachers actively involve students in the classroom, Histovitch and Mitchltree (2004) agreed that hands-on activity really helps students to perform well. The implication of this is that hands-on activity helps students to have a deep conceptual understanding of the topics being treated. Practically, when students get involved in the instruction, they tend to have a better and deeper understanding of the lesson. Westwood (2006) also supported this finding by indicating that students who have difficulty can be successful by teaching them how to learn and by also attending to matters of instruction and curriculum content.

Additionally, Swanson (1999) argued that the method of instruction that a teacher chooses may allow him/her to actively involve students in the course of teaching and learning. The suggestion made was that the most effective form of

teaching students with difficulty was to combine direct instruction with components of strategy instruction.

Academic Qualification and Intervention Measures

On the aspect of teachers' academic qualification and intervention measures used, the extent to which accounting teachers' used these intervention measures are shown in Table 7. Teachers who hold masters degree were, rated to be the highest group who implement the strict adherence to laws and principles of accounting intervention measure. A mean score of 3.80 and a standard deviation of 0.45 show that most teachers with this qualification emphasised that students strictly adhered to the laws and principles of accounting so that students' difficulties in accounting could be minimized. Next are teachers who hold Bachelor's degree (mean score of 3.54 and a standard deviation of 0.59) and the least was those with HND qualification (mean score of 3.33 and a standard deviation of 0.81).

Teachers who hold Master's Degree certificates have gone through the rudiments of teaching, and they have the content as well as the pedagogy. They have enough pedagogy as compared to the Bachelor's degree holders. This is by virtue of their higher education. In comparing the HND holders with those with masters' and bachelors' degree, HND holders exhibited only content knowledge. They lacked the pedagogy in teaching the subject. This may be attributed to the fact that they may not have gone through professional teacher training programmes.

Table 7

Highest Academic Qualification versus Intervention Measures

Academic qualification	Descriptive	First highest	Second highest	Lowest
HND	Mean	3.33	3.50	2.83
	Std. Deviation	0.81	0.54	0.41
B. Degree	Mean	3.54	3.54	2.85
	Std. Deviation	0.59	0.53	0.75
M. Degree	Mean	3.80	3.40	3.60
	Std. Deviation	0.45	0.55	1.52

B. Degree=Bachelor's degree M. Degree=Master's degree

With regard to active participation of students during instruction, teachers who hold Bachelor's degree (M=3.54) were rated as the highest in putting this intervention measure into practice. This shows that they actively involve the students during teaching and learning. HND holders (M=3.50) were rated as the second highest and master's degree holders (M=3.40) the least as far as the use of this intervention measure was concerned. Notwithstanding they all had low standard deviation (Bachelors: SD=0.53, HND: SD= 0.54, Masters: SD=0.55). This is an indication that the extent to which teachers agreed that all students should be actively involved when it came to teaching and learning, especially in the teaching of accounting, was relatively high. Since accounting is replete with laws and principles which are somewhat difficult to retain, teachers' involvement

of students in lessons will help the latter to be able to recall and apply them during examination and life after school.

With a mean score of 3.60, accounting teachers with masters' degree disagreed that they allowed students to proofread their work. The extent (SD= 1.52) to which they disagreed to that statement was widely apart. Some strongly disagreed while others agreed. The group which disagreed to this statement was the Bachelors' degree holders. The extent to which they disagreed was exhibited with a mean score of 2.85 and a standard deviation of 0.75. Not all the teachers disagreed to that statement; some teachers agreed that they allowed students to proofread their work before they collect them for scoring.

With the issue of students proofreading their work, accounting teachers who hold HND also disagreed. They had a mean score of 2.83 and a standard deviation of 0.41. The standard deviation indicates that most HND holders teaching accounting agreed that they did not allow students to proofread their work at all. In all, accounting teachers were of the view that it was not important to allow students to proofread their work.

Teaching Qualifications and Intervention Measures

The influence of accounting teachers' qualification on the choice of intervention measure employed to address accounting students learning difficulties was assessed. The teaching qualification that accounting teachers have is a factor as to how well they applied the intervention measures in the classroom to help remedy accounting students' learning difficulties. Table 8 shows the

descriptive statistics of teachers' professional qualification and the interventions they apply in classrooms to address students' learning difficulties.

Table 8

Highest Teaching Qualification

Highest qualification	Descriptive	First highest	Second highest	Lowest
None	Mean	3.18	3.36	2.81
	Std. Deviation	0.75	0.50	0.87
Cert A	Mean	3.80	3.40	2.80
	Std. Deviation	0.44	0.54	1.10
PGCE/ PGDE	Mean	3.60	3.40	2.80
	Std. Deviation	0.55	0.54	0.45
B. Ed	Mean	3.63	3.59	2.91
	Std. Deviation	0.53	0.54	0.81
M. Ed/ M Phil	Mean	3.20	3.60	3.20
	Std. Deviation	0.83	0.54	0.84

With a mean score of 3.80 and a standard deviation of 0.44 teachers who had Cert A were rated as the highest category that emphasised strict adherence to the laws and principles of accounting. Even though their qualification is comparatively low, accounting teachers in this category might have attained much experience and promotion in the educational hierarchy. Therefore, they have the

content as well as the pedagogy but some have not pursued the business education programme (accounting). Some of the teachers with this qualification may have degree in Commerce, Business Administration (accounting major), HND, or other business oriented qualification. These teachers have the content and with the little knowledge (Cert A) they had acquired in the teaching field, they are able to teach and apply the necessary techniques as though they had a degree in education.

With a mean score of 3.63 and a standard deviation of 0.53, accounting teachers with B.Ed degree agreed to strictly adhering to the laws and principles of accounting as a way of helping students who have difficulties in the study of accounting. The least category was teachers who had no qualification in the teaching field. With a mean score of 3.18 and a standard deviation of 0.75, such accounting teachers agreed that the laws and principles of accounting should be adhered to in the teaching of accounting. But the extent to which they agreed with each other was relatively low.

In the category of accounting teachers with M. Ed / M. Phil teaching qualification, a mean score of 3.60 and a standard deviation of 0.54 were obtained on the involvement of students in their instructions. This score was followed by teachers who had B. Ed teaching qualification (M=3.59, SD=0.54). The least category as far as students' involvement in accounting lessons were concerned was those without teaching qualification. They had a mean score of 3.36 and a standard deviation of 0.50. In teaching, the pedagogy employed by accounting teachers is of much importance. Teachers who had education background had gone through this training and they emphasised that in their teaching. That is why

accounting teachers who hold M. Phil and bachelors' degree in education were rated high. But teachers who had no qualification in education were the least. This was so because they did not have any training in education. They may have had the content but lacked the pedagogy in the teaching and learning of accounting.

The lowest intervention measure was that of teachers disagreeing that they did not allow students to proofread their work before they collected them for assessment. Some teachers were of the view that the time given to students during examination or class exercise was enough for them to be able to complete their work and read over it. Therefore, there was no need to give them extra time to do so. Teachers with M. Phil were the highest to disagree to allowing students to proofread their work. This was shown by a mean score of 3.20 and a standard deviation of 0.84. They were followed by teachers holding Bachelors degree in education who had a mean of 3.59 and a standard deviation of 0.54. The least category of teachers to disagree to that intervention was teachers with no teaching qualification.

All accounting teachers irrespective of their teaching qualification disagreed that they allowed their students to proofread their work because they were of the view that it was not necessary for them to specially tell students to proofread their work. Ordinarily, once students write any exercise or assignment, they are expected to read over their work before submitting them for scoring and grading. When a student knows what he/she is doing during assessment or

examination there is no need to give extra time to him/her in order to perform well.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The chapter presents a summary of the research process and its findings. It draws conclusions from the findings and further provides recommendations to enable teachers' identify the learning difficulties of accounting students and the measures to address those learning difficulties. Suggestions for further research have also been provided.

Summary of the Research Process

The main objective for conducting the study was to assess the pedagogical content knowledge of accounting teachers in the Senior High Schools in the Central Region of Ghana. Other objectives included an investigation into how accounting teachers identify the learning difficulties of their students and the strategies that they employ to solve those difficulties. The questions addressed were broadly categorised into four main groups as follows:

1. What are the major learning difficulties of Senior High School accounting students in the Central Region?
2. What do Senior High School accounting teachers in the Central Region perceive as possible sources of students' learning difficulties`?

3. How do Senior High School accounting teachers in the Central Region identify the learning difficulties of their students?
4. How do Senior High School accounting teachers in the Central Region address the learning difficulties of their students?

Descriptive research design was used to explore the problem. The target population consisted of all public SHSs accounting teachers (comprising cost and financial accounting teachers) in the Central Region. Forty seven out of 56 public Senior High Schools were taken because the selected schools were the schools that offered accounting as a programme of study in their schools. All the accounting teachers in the selected SHSs were studied. In all, 86 accounting teachers responded to the questionnaires crafted by the researcher. There was a return rate of 83.72%.

All the 72 respondents provided the needed pieces of information through a questionnaire consisting of two main sections. The first section consisted of the biographic data of the respondents. In the second section, items were designed to find out from accounting teachers the major learning difficulties accounting students' had, the sources of those learning difficulties, how accounting teachers identified such learning difficulties and the intervention measures that accounting teachers put in place to address those difficulties of their students.

The questionnaire was pretested and validated in four SHSs in the Brong Ahafo Region before it was used to collect the actual data for the study. A Cronbach Alpha reliability co-efficient of .784 was achieved. The questionnaire was personally administered. Descriptive statistics such as means, standard

deviation and percentages were the main tools used to analyse the data. Bar graphs were also drawn to give a pictorial view of the data collected.

Summary of Key Findings

The main findings that emerge out of the study are as follows:

1. The study revealed that minor errors and careless mistakes are the major learning difficulties that accounting students face while inattention in class was found to be the least.
2. Large class size is the main source of students learning difficulty which has influence on students' performance. This therefore makes remedial teaching impossible for students since the large class size does not allow teachers to identify students who really have difficulty in accounting. It was also found out that accounting students are not scared of numbers. This means that accounting students do not have difficulty in dealing with numbers. Rather, the class sizes do not allow teachers to reach out to students and address individual students' problems.
3. In relation to identification of students' learning difficulties, the study found that the main strategy that teachers use to identify their students' learning difficulty is through scoring and grading of their scripts.
4. Accounting teachers implore students to adhere strictly to the accounting laws and principles. Teachers actively involve their students during teaching and learning and also break task into manageable pieces as ways of addressing the difficulties that accounting students encounter.

Conclusions

From the findings of the study, a number of conclusions may be drawn. Accounting as a discipline is built on accuracy. Yet the major learning difficulty the accounting students were noted to have was the commitment of minor errors and careless mistakes. The implication of this is that accounting students are less efficient in the application of the accounting standards to solving a particular question. The bottom line is that accounting students will continue to experience difficulty with the subject once the problem remains unresolved.

Teachers are not able to reach out to all the students because of large class size. The problem stems from inadequate resources in both human and material needs. Since accounting teachers are unable to give each individual student the desired attention, there is always the room for students' work to go unsupervised and thus promoting and compounding students' learning difficulties. Due to the limited attention accounting students receive from their teachers, the students are likely to continue to perform abysmally.

Accounting teachers are limited in the use of strategies in the identification of students' learning difficulties. This may be due to the fact that the accounting teachers are conservative and do not want to change from the old ways of doing things. This would limit the extent to which they can gather comprehensive data about their students' learning difficulties. Thus, the tendency of accounting teachers misdiagnosing their student's learning difficulties would be high.

Generally, accounting teachers employ multiple intervention measures to address students' learning difficulties. This implies that accounting teachers are not leaving out students' difficulties unattended but rather are holistically addressing them. Yet, since they employ limited strategies in identifying accounting students' learning difficulties and thus the high propensity of misdiagnosing students' learning difficulties, there is also the possibility of applying the inappropriate interventions. This may have a debilitating effect on the performance of the accounting students.

Recommendations

Based on the findings and the conclusions drawn, the following recommendations made for practice:

1. Carelessness was found to be the major learning difficulties Senior High School accounting students have. It is therefore recommended that accounting teachers become extra careful and methodical in presenting facts in class. They must ensure that students are attentive to details and stick to formalised presentation of factual information and figures in accounting. It pays for the teachers to go round supervising the work of students as they perform an activity in class so as to ensure that a timely intervention could be provided when the students are going wayward. School heads should strengthen their supervision role to ensure that both accounting students and teachers conduct themselves appropriately in order to achieve the desired behaviour in terms of academic excellence.

2. On the second research question which dealt with the possible sources of accounting students' learning difficulties, it was found that the predominant source was large class size. In the light of this, it is recommended that the additional school blocks are built in order to break the large classes into smaller units so as to facilitate student-teacher interaction to promote learning.
3. It was discovered that it is during the scoring and grading of students' scripts that accounting teachers identify their students' learning difficulties. The indication here is that accounting teachers do not spend quality time with their students. If they did they would have been able to identify students' learning difficulties long before they score and grade students' scripts. It is therefore recommended that accounting teachers spend enough time with their students to enable them diagnose students' learning difficulties early enough and be able to curb it in time. They should use class interaction and row-by-row supervision of individual accounting student's exercises to forestall any problems students may encounter even before they score and grade those scripts.
4. The common intervention accounting teachers use to address accounting students' learning difficulties is their admonishing the students to strictly adhere to the principles and laws of accounting. Admonishment alone may not be potent enough to get students to do the right thing. Students must know the nature of accounting and appreciate the need to understanding and translating their understanding into the production of those financial

statements required of them in examinations. Accounting students must have that intrinsic motivation to study the subject. It is therefore, recommended that students be left to willingly opt to study accounting without any compulsion from teachers.

Suggestions for Further Research

The findings of this particular study could not be generalised outside the Central Region from where only 72 respondents were drawn. The researcher has therefore, recommended certain areas for further research on the subject of PCK specifically on the identification of accounting students' learning difficulties and the strategies that teachers could use to address those difficulties. The following are suggested for further research:

1. The perception of accounting students on their learning difficulties.
2. The same topic should be replicated in other areas (either subject or geographical).
3. The instructional strategies that accounting teachers use in the teaching of accounting.
4. A comparative analysis could be done to assess teachers' pedagogical content knowledge in private and public senior high schools.

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APPENDIX A

UNIVERSITY OF CAPE COAST

FACULTY OF EDUCATION

Department of Arts & Social Sciences Education

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Telegrams & Cables: University, Cape Coast.

University Post Office,
Cape Coast, Ghana.

OUR REF: **DASSE/111**

YOUR REF:

Date: 4th February, 2009

TO WHOM IT MAY CONCERN

LETTER OF INTRODUCTION

The bearer of this letter, Miss Leticia Bosu, is a graduate student of the Department of Arts and Social Sciences Education of the University of Cape Coast, Ghana. She requires some information from your institution for the purpose of writing a thesis as a requirement of M.Phil Degree programme.

I should be grateful if you would kindly allow her to collect the information from your institution. Kindly give the necessary assistance that Miss Bosu requires to collect the information.

While anticipating your co-operation, I thank you for any help that you may be able to give.

DR. YAW AFARI ANKOMAH
HEAD OF DEPARTMENT

APPENDIX B

UNIVERSITY OF CAPE COAST

DEPARTMENT OF ARTS AND SOCIAL SCIENCES EDUCATION (DASSE)

QUESTIONNAIRE FOR ACCOUNTING TEACHERS

Dear Sir/ Madam,

I write to seek your consent in a study that I am conducting on the above named topic. I am pleading with you to complete the questionnaire that has been provided below. Accounting students after Senior High Schools do sometimes have problems in the course which often reflects in their performance in the final exams. This problem is sometimes attributed to the learning difficulties that students may have in the course of the study. This study aims to find out what those difficulties are, how teachers identify students' learning difficulties and the measures that they put in place to help students overcome those learning difficulties.

Please be assured that your responses will be used solely for the purpose of the study. You will also not be identified in any part of the study. Your participation in the study is greatly appreciated. Thank you

Please tick (√) or write your response in the appropriate space.

SECTION A: BACKGROUND INFORMATION

1. Gender

   Male { }

   Female { }

2. Age range

   20-29 { }

   30-39 { }

   40-49 { }

   50-59 { }

   60+ { }

3. Highest academic qualification

   HND { }

   Bachelors' degree { }

   Masters' degree { }

   Professional certificates { } (eg. ICA, ACCA, CIMA)

   Other (Specify): …….

4. Highest teaching qualification

   None { }

   Cert A { }

   Diploma in Education { }

   PGCE/ PGDE { }

   B. Ed { }

   M. Ed/ M. Phil { }

5. Number of years teaching Accounting at the senior high school level.

   1-5 { }

   6-10 { }

   11-15 { }

   16+ { }

SECTION B: Major learning difficulties, sources, identification and interventions.

Use the scale below to indicate the extent to which you agree or disagree with the following statements.(Please, provide responses where appropriate).

SD= Strongly Disagree

D = Disagree

A= Agree

SA=Strongly Agree

Students' Learning Difficulties

Statement	SD	D	A	SA
6. Students exhibit apparent inattention during lesson				
7. Students have concentration difficulties during lesson				
8. Students find it difficult to do mathematical calculation during lessons				
9. Students commit minor errors/ careless mistakes which could have been avoided if they had taken time				

in solving Accounting problems				
10. Students have difficulty in taking test in accounting				
11. Students find it difficult to understand Accounting terms				
12. Students have difficulty in presenting answers to questions using the right format (examples adjustments of accounts, trading profit and loss account, balance sheet, appropriation of accounts, etc)				
13. Students have difficulty in following through instructions				
14. Students have difficulty in sequencing and completing steps to accomplish specific tasks				
15. Students find it difficult to understand certain topics				

16. Please list these topics

……

…….....

Sources of Students' Learning Difficulties

Statement	SD	D	A	SA
17. Students are scared of numbers				
18. The laws and principles in accounting confuse students				
19. Students get confused with the technical words				
20. Students' previous knowledge (from JHS) is not strong enough towards the study of Accounting				
21. Subject combinations (literature, French, etc) do not support the study of Accounting				
22. Large class size hinders my ability to attend to all students				

Identification of Learning Difficulties

Statement	SD	D	A	SA
I discover students' learning difficulties:				
23. Through observation during accounting instruction				
24. During scoring and grading of students' scripts				
25. Through the reading of Accounting Chief Examiners' report from WAEC				
26. Through Report from other students				
27. Through complaints from students who have problems themselves				
28. Through the type of questions students ask in class				

Interventions

Statements	SD	D	A	SA
29. I get students' attention before giving instruction in class				
30. I attempt to actively involve students in lesson				
31. I teach specific methods of self- monitoring (stop-look-listen)				
32. I allow students to proofread finished work				
33. I give students enough time during test taking				
34. I teach test taking skills and strategies				
35. I allow students to be tested orally				
36. I use clear, readable and uncluttered test forms				
37. I give one direction at a time				
38. I break up total tasks into workable and obtainable pieces				
39. I provide examples and specific steps to accomplish tasks				
40. I emphasise the strict adherence to the laws and principles of Accounting				
41. I provide remedial instructions to students with learning difficulties in specific topics				

APPENDIX C

Number of Senior High Schools in the Central Region

Metropolis/ District	Number of public SHSs	Number of private SHSs	Number of schools offering accounting
Cape Coast	10		9
Edina / Komenda/ Eguafo	3		3
Mfantisman	5		5
Abura / Asebu/ Kwaman	3	1	4
Awutu / Efutu/Senya	3	2	4
Ajumako/ Enyan/Esiam	3		3
Asikuma/ Odoben/ Brakwa	2		2
Agona Swedru	5	1	4
Upper Denkyira	3		3
Twifo	2	2	4
Assin North	2		2
Assin South	4		4
Gomoa	4		4
Total	49	6	51