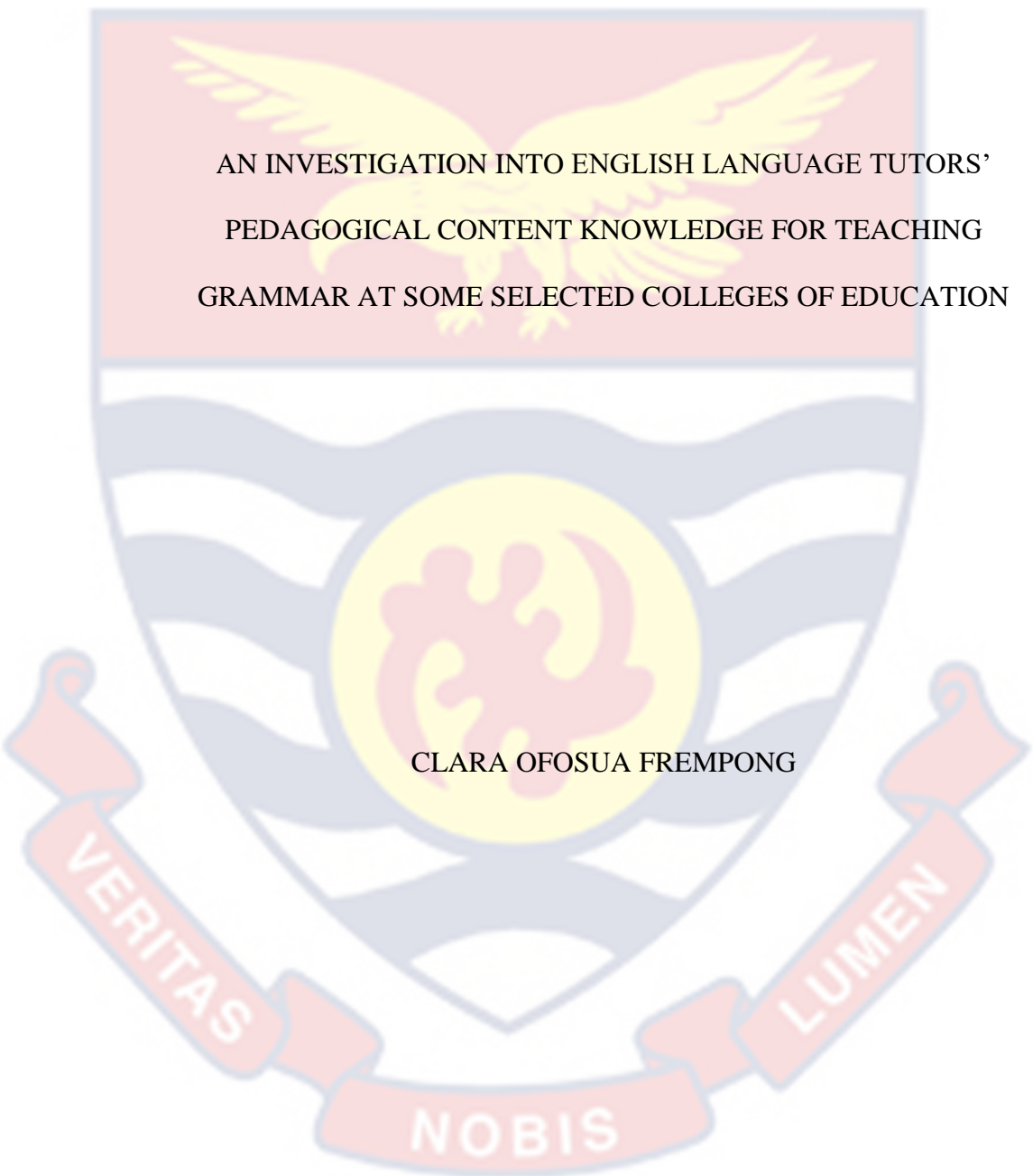


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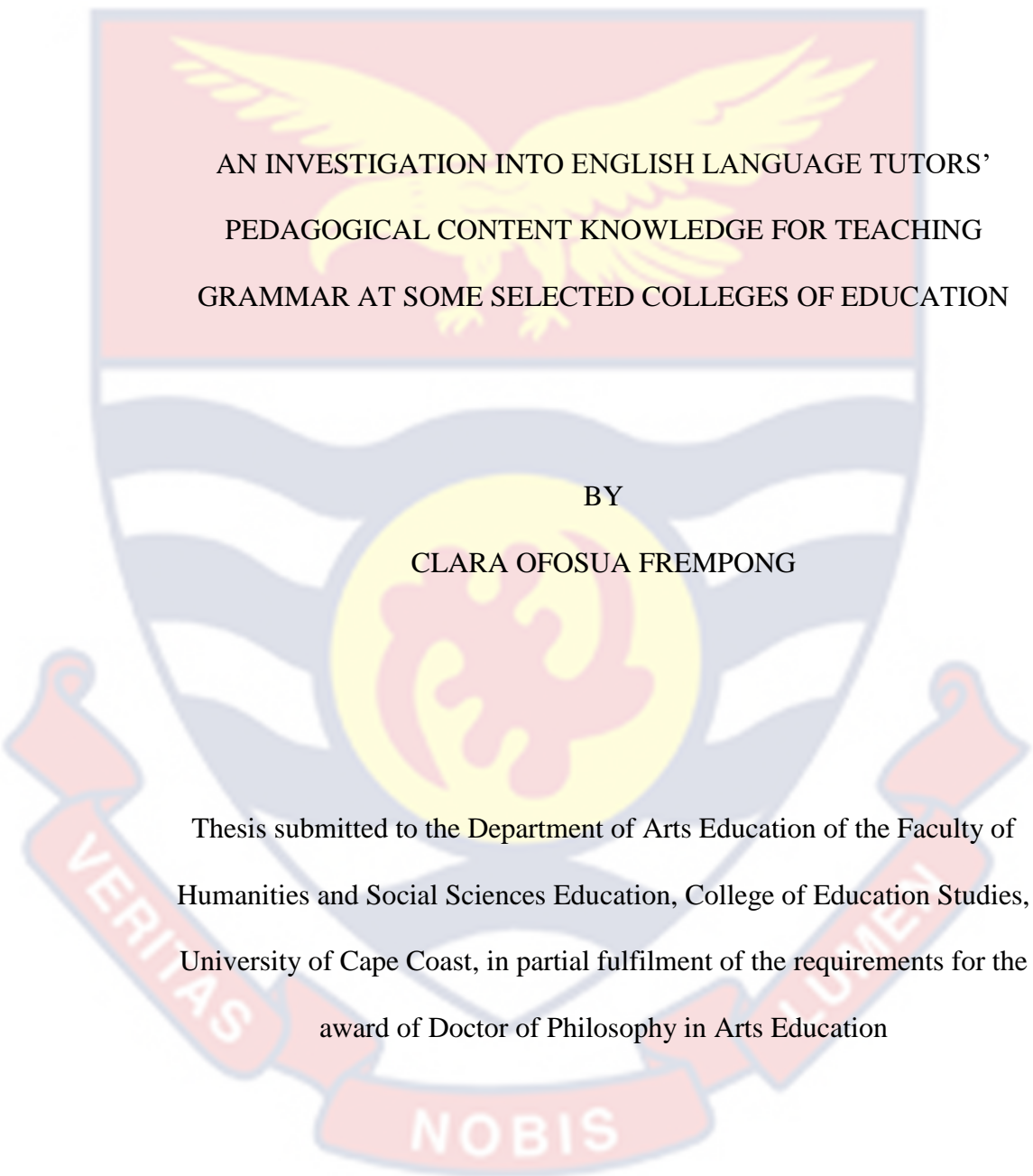


AN INVESTIGATION INTO ENGLISH LANGUAGE TUTORS'  
PEDAGOGICAL CONTENT KNOWLEDGE FOR TEACHING  
GRAMMAR AT SOME SELECTED COLLEGES OF EDUCATION

CLARA OFOSUA FREMPONG

2024

UNIVERSITY OF CAPE COAST



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GRAMMAR AT SOME SELECTED COLLEGES OF EDUCATION

BY  
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Thesis submitted to the Department of Arts Education of the Faculty of  
Humanities and Social Sciences Education, College of Education Studies,  
University of Cape Coast, in partial fulfilment of the requirements for the  
award of Doctor of Philosophy in Arts Education

JULY 2024

## 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:

### Supervisors' Declaration

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

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

Name:

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

Name:

## ABSTRACT

This study aimed to investigate English language tutors' Pedagogical Content Knowledge (PCK) in teaching grammar at selected colleges of education (CoEs) in Ghana. In this exploratory sequential mixed methods study, multi-staged sampling techniques were employed to select 6 tutors and 155 English language major students from CoEs in Eastern and Greater Accra zone (EGA). With Shulman's (1986) PCK model and Celce-Murcia and Larsen-Freeman's (1999) contextual theory as the theoretical lens, data were analysed and interpreted. The tutors were observed and interviewed while the students responded to questionnaires and were tested on their comprehension of grammatical concepts. The deductive thematic analysis found that the tutors demonstrated outstanding PCK expertise in teaching grammar. However, the correlation results of tutors' PCK and students' understanding of grammatical concepts revealed that there was no significant relationship between the tutors' PCK and the students' understanding of grammatical concepts. These results demonstrated that PCK might not be the sole determinant of students' understanding of grammatical concepts. Other factors, such as students' prior knowledge, classroom dynamics, and teaching methodologies beyond PCK, could also influence students' comprehension of grammar. Therefore, other factors that promote students' understanding of grammar should be explored by the English language tutors. Further studies could broaden the study to include other CoEs zones to offer a comprehensive understanding of tutors' PCK in teaching other aspects of the English language.

**Keywords:** CoEs, Cross-cutting issues, Differential learning, PCK, Grammar

## ACKNOWLEDGEMENTS

I am very grateful to many people from different backgrounds who have made valuable contributions to complete this work. First of all, I am very grateful to my supervisors, Prof. Philip Arthur Gborsong and Dr. Gertrude Afiba Torto, for guiding me through the selection of the topic to the completion of the thesis. Their guidance, time, comments, and resources made this work a reality. I also express my deep gratitude to all the lecturers in the Department of Arts Education for their encouragement.

I remain thankful to my colleagues, especially Dr. Deodat Otame and Mr. Michael Hagan, whose recommendations helped me to obtain current literature for the work.

I further express my gratitude to my husband, Mr. Ernest Anim Amiah, for his perseverance, understanding, and continuous support. Additionally, I would like to express my sincere thanks to my mother, my father-in-law, and my brothers for their continuous encouragement, emotional support, and unceasing prayers. Nana Ofori Asante I and Mr. Stephen Ansong Frempong also deserve a special mention for their innumerable assistance to me.

Finally, I thank God for His strength and comfort in difficult times and for allowing me to achieve my goals.

**DEDICATION**

To my lovely children: Samuel Anim Amiah, Ernest Anim Amiah and Nana

Akosua Anim Amiah



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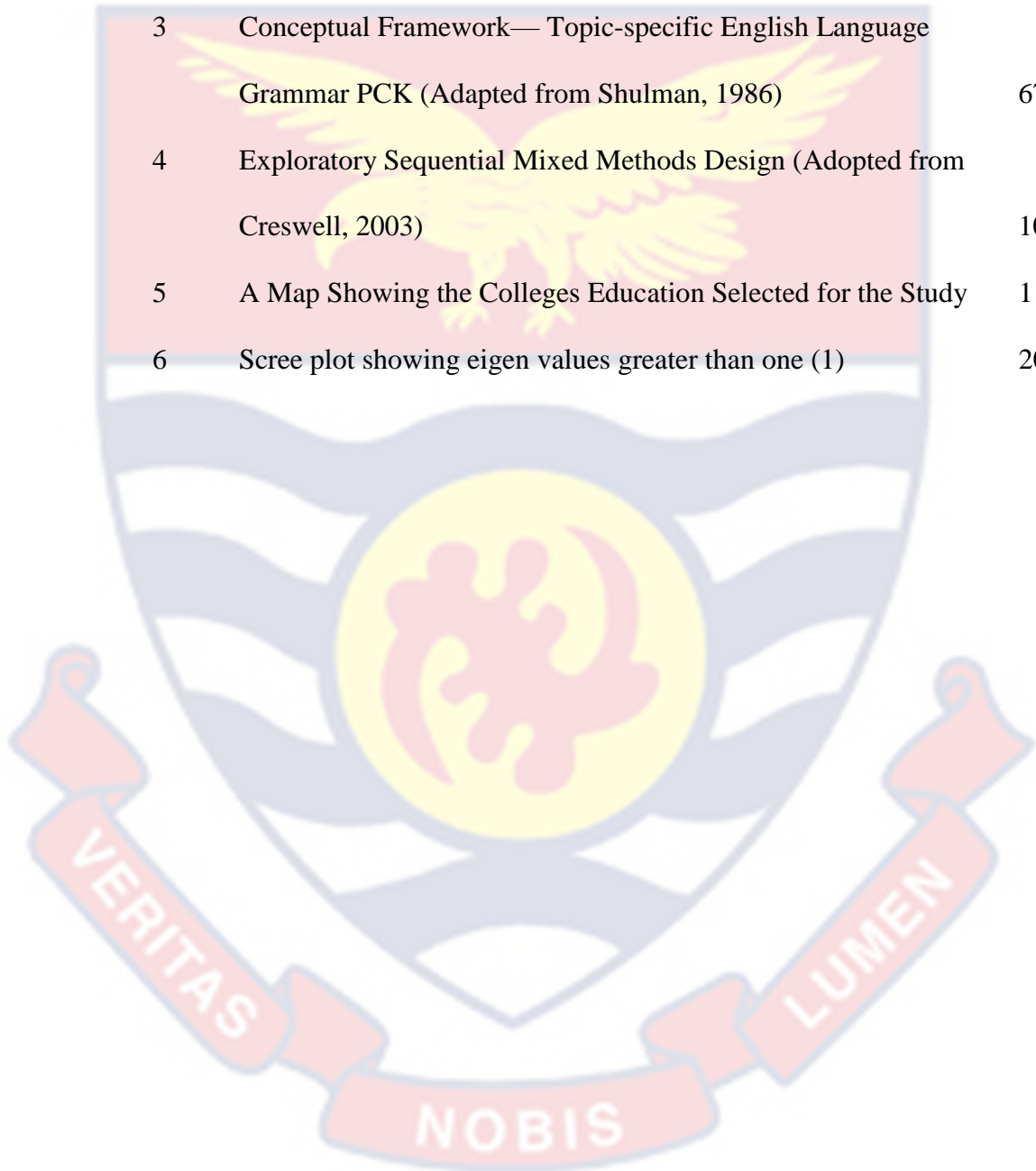
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**LIST OF ACRONYMS**

AC	-	Abstract Conceptualisation
ACE	-	Accra College of Education
ASHBA	-	Asanti and Brong Ahafo Regions Zone
CE	-	Concrete Experience
CENTWEST	-	Central and Western Regions
CK	-	Content Knowledge
CoEs	-	Colleges of Education
CPD	-	Continuing Professional Development
CPD	-	Continuous Professional Development
EGA	-	Eastern and Greater Accra Regions Zone
EFL	-	English as a Foreign Language
ESL	-	English as a Second Language
ET	-	English Language Tutor
HoD	-	Head of Department
ICT	-	Information Communication Technology
IWB	-	Interactive White Board
KCC	-	Knowledge of Content and Curriculum
KCS	-	Knowledge of Content and Students
KCT	-	Knowledge of Content and Teaching
KR	-	Kuder-Richards
MKT	-	Mathematics Knowledge for Teaching
MMCOE	-	Mount Mary College of Education
NORTHERN	-	Northern Region Zone
NTECF	-	National Teacher Education Curriculum Framework

NTS	-	National Teachers' Standards
OECD	-	The Organisation for Economic Cooperation and Development
PCE	-	Presbyterian College of Education
PCK	-	Pedagogical Content Knowledge
PCKg	-	Pedagogical Content Knowing
PK	-	Pedagogical Knowledge
PWCE	-	Presbyterian Women's College of Education
RPK	-	Relevant Previous Knowledge
SDACE	-	Seventh Day Adventist College of Education
SLA	-	Second Language Acquisition
SMK	-	Subject Matter Knowledge
STS	-	Supported Teaching in Schools
TBLT	-	Task-Based Language Teaching
TPACK	-	Technological Pedagogical Content Knowledge
TPCK	-	Technological Pedagogical Content Knowledge
T-TEL	-	Transforming Teaching, Education and Learning
UCC	-	University of Cape Coast
UN	-	United Nations
UNESCO	-	United Nations Educational, Scientific and Cultural Organisation
USA	-	United States of America
VARK	-	Visual, Aural, Reading/ Writing and Kinaesthetic
VOLTA	-	Volta Region Zone
ZPD	-	Zone of Proximal Development

## CHAPTER ONE

### INTRODUCTION

The study was carried out to investigate the Pedagogical Content Knowledge (PCK) of English language tutors who teach grammar in some selected Colleges of Education (CoEs) in Ghana. In Chapter 2, a whole discussion of content knowledge and pedagogical knowledge (also known as Pedagogical Content Knowledge [PCK]) is done. The study focuses on teachers' need to possess in-depth knowledge of grammar and pedagogical knowledge (Baumert et al., 2013). In order to foster successful educational experiences in the classroom, as intended by the National Teacher Education Curriculum Framework (NTECF) for teacher education in Ghana (NTECF, 2017), tutors are to integrate pedagogical content knowledge and cross-cutting issues into the teaching and learning of grammar.

This chapter presents the position of the English language globally, the justification for teaching and mastering grammar in our schools, and the goals of teacher education in Ghana. This discussion is extended to the English language teachers' role in helping students meet their linguistic objectives. The background information is essential to this study since it indicates the need for effective teaching of grammar by English language teachers in Ghanaian schools. The problem statement, the research objectives, the research questions, the significance, the study scope, and the research organisational structure are all presented in this chapter.

#### **Background to the Study**

English is a language that has become universal (Jenkins, 2013). It has spread faster than any other language. It has become the primary language for

global communication in native or non-native contexts (Macedo et al., 2015). Most nations use the English language as an official language (Crystal, 2003, 2012; Graddol, 2006; Kachru, 2005). The English language has also achieved a special status in many countries than any other language (Crystal, 2003; Graddol, 2006). Therefore, it is the preferred language in schools, for international aviation (Hamp-Lyons, 2011), and for continued international communication (Amoah, 2016; Dorvlo, 2016; Schon, 1987).

In Ghana, literacy studies in the English language are the key to success in education and life (NTECF, 2017). The English language is the language for all official duties (Agyekum, 2015; Boadi, 2007). It is the language of administration, government business, education, media, judiciary, parliament, and religion (Anderson et al., 2009; Dolphyne, 1995; MoE, 2012; Shoba et al., 2013). It is also the language used for communication between different speakers of different indigenous languages (Agyekum, 2006; Egblewogbe et al., 2015; Owusu-Ansah, 2018). Besides, it unites the different ethnic groups in Ghana (Amenumey, 2018; Amuzu, 2013; Takyi, 2017). The English language is the medium for practical interaction, higher education, and job placement (Adu-Ampong, 2017; Ampiah, 2015; Boahemaa, 2011; *National Syllabus for English Language Primary 1-3*, 2012; Torto, 2017). For these reasons, the English language is a significant subject of study in Ghanaian schools. Consequently, the English language syllabus has been designed with the intention of providing opportunities for English language learners to function effectively in Ghana because the English language is essential in the performance of basic functions like communication, expression, and comprehension (Brown, 2007; Smith, 2010).

Considering the roles played by English language in Ghana, there is a need to look at English language teachers' knowledge, skills, attitudes, and beliefs, especially their preparation programmes, in order to improve teacher quality (NTECF, 2017; NTS, 2017; OECD, 2005). According to Shulman (1986), there has been a "missing paradigm" in teacher education, due to the little investigation into how teachers translate their material knowledge into lessons that promote student learning. PCK is perceived as an essential component of teacher education programmes by Kleickmann et al. (2013), Gudmundsdottir (1987), and Shulman (1986).

To help professionalised teaching in Ghana, the Ghana Tertiary Education Commission (GTEC), the National Teaching Council (NTC), and some stakeholders of education have set standards for quality teacher education (NTECF, 2017; NTS, 2017). In the National Teachers' Standards (2017), the professional practice domain is most closely connected with PCK. There is an overlap between professional values and PCK as a result of how the three domains and components of the National Teachers' Standards bring together what teachers ought to cherish, to understand, and to be able to do. Integrating pedagogical and subject knowledge is the focus here (NTECF, 2017; NTS, 2017). Therefore, the premise that teaching content can only be effective if it is adjusted to the methods in which students absorb certain information is central to the concept of PCK.

Since the introduction of PCK by Shulman (1986), scholars such as Lee et al. (2007), Magnusson et al. (1999), and Grossman (1990) have expanded its nature in various fields of study. Knowledge of the themes typically taught in one's subject area, knowledge of ways in which these ideas



are represented, and knowledge of students' grasp of topics are essential components in Shulman's theory of PCK (Andrews, 2001; Grossman, 1990; Jing-Jing, 2014; Lee et al., 2007; Magnusson et al., 1999; Shulman, 1986). However, PCK is presented by Magnusson et al. (1999) as a distinct area of teacher knowledge that coexists with areas like pedagogical knowledge and belief. According to Gudmundsdottir and Shulman (1987), PCK elements encompass student knowledge, general pedagogical knowledge, and topic knowledge. Given the varied ways different academics have conceptualised PCK, it is still being determined whether one should conceive of PCK as material that is particular to each subject that teachers teach or as generic or subject specific PCK.

Therefore, this study corroborates Shulman's (1987) notion of integrating PCK constructs in subject specific instructions. The reason is that, in English language studies, the various aspects have specific PCK. Also, these PCK constructs integrate to provide insight into how best aspects of the English language should be taught and learned, especially in a second language context. This gives the distinctions between the various aspects of English language in terms of their content and pedagogy.

There are some concerns about some aspects of the English language in Ghanaian schools (Crystal, 2003; NTECF, 2017). Literacy studies in English language instruction are crucial to the subject matter, which includes awareness and understanding of the language, such as grammar, pronunciation, vocabulary, and morphology, as well as language competency (proficiency in speaking and writing) (Andrews, 2001). Grammar is a crucial component of teaching and learning English language that is essential to

language proficiency (Crystal, 2004; Nordquist, 2019). The structural basis of the human capacity for self-expression is grammar. However, the major problem in second language learners' writing and speech is grammar since learners need it to communicate directly in the target language (Abdulkareem, 2013; Ellis, 1994; Thornbury, 2005).

Listening, speaking, reading, and writing depend on grammar (Corder, 1988; Widodo, 2004). To develop the skills essential to produce grammatically correct utterances in a language, according to Corder (1988) and Widodo (2004), one must master the grammar of that language. A further claim made by Crystal (2004) is that the better our understanding of grammar, the better able we are to assess the intent behind our language use and its success because it promotes accuracy, helps identify ambiguity, and makes use of the variety of expressions that English has to offer. It is expected that more emphasis be placed on grammar in our traditional classrooms. The goals of teaching grammar are to help students materialise the structure of the language and functions so that they can communicate verbally and in writing, to develop language proficiency in various contexts, and to reduce errors to enhance the quality of written and spoken communication (Celce-Murcia & Larsen-Freeman, 1999; Crystal, 2003; Ellis, 2002).

There have been contentious concerns with grammar training, precisely when and how grammar should be taught. According to Lightbown and Spada (1990, 1993), teaching grammar entails any instructional strategy or exercise that calls learners' attention to a particular grammatical construction to enable them to internalise the formation and process thoroughly. Therefore, as suggested by Shulman (1986) and Magnusson et al. (1999), teachers of the

English language must attain an appropriate standard in English language content and pedagogical competence to teach grammar effectively.

In recent years, boosting the standard of educators has been crucial to promoting quality education (Hanushek & Rivkin, 2010). In the past few years, Ghana has struggled to attract and keep qualified instructors (NTECF, 2017; NTS, 2017). The new development in education, psychology, and human science, in general, has brought a change in focus from the teacher and teaching to the learner and learning processes concerning language education. With the advent of the humanistic approach to education, the learner has been put at the centre of teaching and learning by considering his or her needs, wants and lacks. New approaches such as suggestopedia, community language learning, and communication have focused on the learner rather than the teacher.

Similarly, cognitive psychology has become primarily concerned with learning strategies (O'Malley & Chamot, 1991; Oxford, 1990) and learners' schemata. Kumaravadivlieu (1992) claims that lip service has been paid to teachers' knowledge, especially in the post-method era in which it is assumed that theory is far from practice in teaching, and that the teachers should develop a principled pragmatism as well as the basis of experiential, experimental, and practical knowledge. As suggested by Kumaravadivlieu, the thoughts provide valuable ideas for pragmatic research into the holistic teaching of the English language in our schools since there is more to teaching than just the theory and practice dilemma.

Shulman (1986) states that there should be a link between knowing how to teach and knowing what to teach. This indicates that actual classroom

practices should necessitate the combination of both subject matter knowledge and pedagogical knowledge. Andrews (2007, p. 24) also confirms Shulman's assertion:

When we look at examples of how teachers handle grammar-related issues in the classroom itself, it becomes apparent that the relationship between subject-matter knowledge and classroom teaching is very complex and that subject-matter knowledge alone is not sufficient to ensure the effective application of TLA in pedagogical practice.

Therefore, what characterises language teachers, first and foremost, is being knowledgeable about the different aspects of language: grammar (rules of the language), vocabulary, and pronunciation (Magnusson et al., 1999; Shulman, 1986). This idea means that having subject matter knowledge is enough to teach it effectively if it is linked to how one teaches it. This concept is called Pedagogical Content Knowledge, that is, PCK.

The PCK of the teacher is made up of both content knowledge and pedagogical expertise. Siraj-Blatchford et al. (2002) and Guerriero (2017) assert that pedagogical knowledge is classroom management and the broad principles and tactics beyond subject content. This involves making the most of the available instructional time, managing classroom activities, keeping a steady tempo while instructing, and maintaining clear lesson objectives. These actions aim to help teachers comprehend academic subjects by establishing connections between students, context, subject discipline, and instructional style (Grossman & Richert, 1988). Shulman (1987) reiterates that content knowledge is the necessary cognitive knowledge for effective teaching and

learning and that content knowledge and pedagogical knowledge are crucial for enhancing student outcomes and the calibre of the teaching profession.

Shulman (1986) posits that numerous facets of pedagogical content knowledge are the representations of three types of knowledge: subject-matter expertise, the concept of learners (or learners' conception), and teaching strategies (or instructional strategies). This knowledge should be distinct from the most crucial factor— atmosphere that helps students understand a particular topic and contributes to their intellectual growth. To Shulman, one of the essential components of students' academic performance in today's classrooms is teachers' content and pedagogical competence (Darling-Hammond, 2000). Basically, the legitimacy of teachers' contributions to teaching and learning the English language at all levels of education is determined by what teachers know or their PCK in conjunction with their surroundings.

This background investigation gives the current study a foundation on which to examine the expertise that English language teachers in our schools have as regards instructing grammar. Since grammar is a crucial language component, teaching grammar has always been an element of language teaching techniques. Teachers must not only gain a high level of language competence, but they must also display and deliver knowledge in a way that encourages learners to learn. Teaching grammar requires not only the incorporation of material knowledge but also the use of pedagogical skills to advance universal learning through cross-cutting concerns (NTECF, 2017).

Consequently, a more comprehensive study on every part of teacher knowledge that language teachers possess and exhibit via their teaching is

required, nonetheless, in order to get a holistic understanding of what makes for excellent teaching. These factors drive this study's investigation of the grammatical instruction methods used by the English language teachers and how those methods further learning outcomes.

### **Aim of Teacher Education in Ghana**

Teacher education in Ghana aims to prepare prospective teachers imbued with “professional skills, attitudes and values as well as the spirit of inquiry, innovation and creativity that will enable them to adapt to changing conditions, use inclusive strategies and engage in life-long learning” (NTS, 2017, p. 10). This position provides the framework for the National Teachers' Standards (NTS, 2017) and National Teacher Education Curriculum Framework (NTECF, 2017) to bring together what teachers should value (professional value), know (professional knowledge), and be able to do (professional practice) (NTS, 2017).

As a result, the NTS is a set of criteria collectively authorised to direct teacher preparation and practice in Ghana. These requirements align with pre-tertiary curricular modifications and changes to teacher preparation programmes. The best method for guaranteeing instructor quality and student learning results is a worry for the NTS. The NTECF intersects with the NTS and prioritises the integration of its four pillars: topic and curricular knowledge, literacy studies in Ghanaian languages and English language, pedagogical knowledge, and support teaching in schools (NTECF, 2017). The framework, NTECF, was created to take significant strides toward reaching high standards of education for all students and to train more effective, inspiring, and motivational teachers who will include the four pillars in their

methods of instruction. This idea guarantees every child's constitutional entitlement to qualified teachers.

Cross-cutting concerns make up the NTECF's second component. Cross-cutting issues affect all four pillars and must be addressed to equip teachers and pre-service teachers with the essential abilities to guarantee that all students learn (NTECF, 2017; Theme 3-T-TEL, 2018). Additionally, it offers a comprehensive strategy for the growth and education of teachers. Equity and inclusivity, professional attitudes and values, fundamental and transferrable skills, evaluation techniques, action research, reflection, and information and communication technologies are the cross-cutting topics (NTECF, 2017; Theme 3-T-TEL, 2018). Other issues include specialism, assessing teacher trainees, continuous professional development (CPD), and quality assurance strategy (Theme 3-T-Tel, 2018). These issues need to be included more effectively in studies under PCK (NTECF, 2017).

Therefore, English language tutors and teacher trainees have clear expectations regarding competent teacher education. Competent teacher education should provide practical activities based on integrating general pedagogical knowledge and pedagogical content knowledge and introducing cross-cutting issues. Thus, in Ghana, integrating PCK constructs alone is only complete if it addresses cross-cutting issues (NTECF, 2017).

### **Justification**

The justification for grammar research, an aspect of English language studies, is that grammar is a crucial language component. Also, teaching grammar has always been an element of language teaching techniques. However, teaching requires a lot of preparation, practice, expertise,

knowledge, and abilities. Teachers must not only gain a high level of language competence but must also display and deliver knowledge in a way that encourages learners to study. Teaching grammar requires combining content knowledge and pedagogical skills to advance universal learning using cross-cutting concerns. According to Shulman (1986), teachers must have a thorough mastery of a given subject and be able to convey and formulate content in a variety of ways that are intelligible to learners.

However, the National Teaching Council, the Ghana Tertiary Commission, and the Ministry of Education must develop a comprehensive understanding of what makes for excellent teaching for teachers. In that case, a more comprehensive study on every part of teacher knowledge that language teachers possess and exhibit via their teaching is required. This idea from Shulman's (1986) framework also implies that when teachers understand and integrate pedagogical content knowledge, their knowledge enhances students' outcomes and the calibre of the teaching profession. These two factors are the primary driving forces behind this study's investigation of the English language tutors' PCK in grammatical instruction and how it affects students' in-class acquisition of grammatical ideas.

### **Statement of the Problem**

According to Lockheed and Verspoor (1991), practical pre-service training should be based on a solid understanding of the instruction, methodological abilities, and practice teaching under the guidance of an experienced teacher. When these strands are weaved into the context of English language tutors' PCK in teaching grammar, the concept of "teaching" grammar should be highlighted as content knowledge in teacher preparation.



Basically, grammar teaching components should include content, pedagogy, and cross-cutting issues to promote learners' understanding of grammatical knowledge.

Notwithstanding, the University of Coast Coast's Institute of Education's Chief Examiner's Reports on English language studies (grammar) from 2019 to 2023 have shown a decline in teacher trainees' performance compared with the previous year's performance. Additionally, a report from the Fidelity of Implementation, GTEC, in May, 2022 on how far training and assessment are adhering to principles and practices for the Bachelor of Education programmes in the forty-six colleges of education in Ghana, indicated pitfalls in teaching and learning. These gaps raise concerns about the quality of grammar instructions, potentially leading to inadequate preparation of teacher trainees for academic and professional contexts where proficiency in the English language grammar is essential.

At the colleges of education, tutors operate at two levels of practice (Loughran, 1997). One concerns teacher trainees' need to learn about learning through the experiences offered in the pre-service teacher education programme. The other level concerns the simultaneous learning about teaching. Loughran (1997) reported that teacher preparation is a synchronous learning and teaching process. Therefore, tutors need to help teacher trainees reflect on their cognitive development as teacher trainees under the pedagogical environment the tutor provides and to facilitate teacher trainees' reflection on pedagogy itself—how and why it is used, adapted, understood, and developed. However, the lack of clarity surrounding tutors' PCK in

teaching grammar in the colleges of education in Ghana may limit teacher trainees' overall language proficiency.

The English language major students at the various colleges of education take grammar content and methodology courses. Another gap is the observation that there is rarely room for reflection on pedagogy during grammar lessons even though English language major students are to learn how their tutors present grammar content. In the opinion of Ottevanger, Akker, and Feiter (2007), such teaching methods result in superficial learning based more on memory than comprehension. Therefore, it should come as no surprise that some prospective teachers encounter some difficulties when putting theory and knowledge from college preparatory programmes into practice in the classroom (Darling-Hammond, 2010; Feiman-Nemser, 2012).

These variations from the observations of the English language tutors' grammar instructions, the Chief Examiner's Reports, and reports from Fidelity of Implementation may contribute to inconsistencies in grammar teaching approaches, further complicating the issues. These uncertainties are crucial for optimising grammar instruction and ensuring teacher trainees' offering English language as a major course in the colleges of education in Ghana receive the necessary foundation in the English language skills. This knowledge gap on the English language tutors' PCK needs to be investigated since it could predict the teacher trainees' performance in grammar and, subsequently, their teaching of grammar.

Since its introduction in 1980, PCK has attracted much attention in different fields and contexts. Most studies conducted have focused on in-service teachers (Eshun & Mensah, 2013; Nadas, 2019; Park & Oliver, 2008;

Wilmot, 2020; Yalley, 2017), while others have focused on pre-service teachers (Mishiwo et al., 2017; Ozden, 2008; Pinamang, 2016; Sri et al., 2021). Some studies on PCK were conducted outside Ghana (Censur, 2018; Ijeh & Nkopodi, 2008; Liu, 2013; Nadas, 2019; Ozden, 2008; Park & Oliver, 2008; Sri et al., 2021). However, in Ghana, studies done in PCK were in other disciplines, including Science, Mathematics, and Social Studies. In addition, while other researchers have adopted the mixed methods approaches (Anani, 2017; Eshun & Mensah, 2013; Lomotey, 2021; Mahamud, 2021; Yalley, 2017), others have used either the qualitative (Aforklenu & Bukari, 2023; Appiah, 2022; Sarfo, 2020) or the quantitative approach (Mishiwo et al., 2017; Owusu-Fordjour et al., 2022; Wilmot, 2020) to address the phenomenon. However, studies conducted using the mixed methods just like this study did not employ the exploratory sequential mixed methods design where observation and interview data were collected from the English language tutors and followed with questionnaire and test data from the teacher trainees from the selected colleges of education in the EGA zone of Ghana.

More so, most scholars have adopted different PCK models for their study. While some researchers have adopted Magnusson et al.'s (1999) PCK model in Science, others have adopted Lee et al.'s (2007) and Ball et al.'s (2008) PCK models in Mathematics. Though Andrews' (2001) and Grossman's (1990) PCK models have been used in English language studies, their models segregate PCK constructs. This study is carried out to identify PCK constructs displayed by the English language tutor and how these constructs interact (Friedrichsen et al., 2011) to render the subject matter clearer to learners (Abell, 2008; Friedrichsen et al., 2011; Park & Chen, 2012).

This will give a robust finding to the unit of study in English language studies, specifically, in grammar. As a result, these ideas, forming the basis of this study, fit into the fundamentals of Shulman's (1986) PCK model.

In Ghana, the literature on grammar studies either focused on approaches to teaching grammar (Anani, 2017; Quagie et al., 2013; Atta-Asamoah et al., 2014) or grammar contents (Agor, 2018; Owu-Ewie, 2017; Bakuuro, 2017). Such studies were not conducted on tutors' PCK in teaching English language grammar at the selected CoEs. Also, there are limited studies on the incorporation of cross-cutting issues into PCK. Finally, literature is scanty on the correlation of tutors' PCK and students' understanding of grammatical concepts. Therefore, filling the gaps on knowledge, context, concept, and analytics, this study seeks to investigate the English language tutors' PCK in teaching grammar at the selected CoEs in Ghana.

### **Purpose of the Study**

The study investigated the English language tutors' PCK for teaching grammar at some selected CoEs and how it influenced students' understanding of grammatical concepts. Specifically, the study sought to:

1. explore the pedagogical content knowledge (PCK) that English language tutors show in teaching grammar in the selected CoEs in Ghana;
2. identify cross-cutting issues introduced through PCK in grammar teaching by the English language tutors in the selected CoEs in Ghana;
3. investigate how incorporating cross-cutting issues through PCK in teaching grammar promotes differential learning among students in the selected CoEs in Ghana;

4. find out how integrating the practical aspects of PCK enhances teacher trainees' understanding of grammatical concepts in the selected colleges of education in Ghana.

### Research Questions

The following research questions were raised to guide the study.

1. What pedagogical content knowledge do English language tutors show in teaching grammar in the selected CoEs in Ghana?
2. How are cross-cutting issues introduced through PCK in grammar teaching by English language tutors in the selected CoEs in Ghana?
3. How does incorporating cross-cutting issues through PCK in teaching grammar promote differential learning among students in the selected CoEs in Ghana?
4. How does integrating the practical aspects of PCK enhance teacher trainees' understanding of grammatical concepts in the selected CoEs in Ghana?

### Hypothesis

Based on the purpose of the study, the following hypothesis was tested in this study.

$H_0$ : There is no strong relationship between English language tutors' PCK and teacher trainees' understanding of grammatical concepts.

$H_1$ : There is a strong relationship between English language tutors' PCK and teacher trainees' understanding of grammatical concepts.

### Significance of the Study

The study is significant because it would provide insight into how English language tutors in the CoEs in Ghana integrate the components of

PCK into their teaching of grammar. It will showcase the PCK constructs displayed by English language tutors at the CoEs in Ghana in teaching grammar topics.

Secondly, it would contribute to the existing literature on the integration of PCK in teaching English grammar at the CoEs, enriching the PCK literature on the English language by yielding new evidence for its conceptualisation. Thus, the study will improve understanding of integrating pedagogical knowledge, content knowledge, and cross-cutting issues in teaching grammar in the CoEs context. The incorporation of cross-cutting issues such as gender, inclusivity, reflection, and ICT to PCK in teaching English language grammar nurtures critical thinking, empathy, gender sensitivity, and cultural awareness. It equips students with valuable skills for the 21st century.

Thirdly, the study would provide information on the effectiveness of the PCK conceptualisation at the CoEs in Ghana. It will highlight how English language tutors of CoEs' integration of PCK components improves students' learning outcomes.

Finally, the study would add to the theoretical literature. Specifically, it would bear the importance of context in teaching grammar (contextual theory). The contextual theory of language acquisition highlights the importance of understanding language in social and cultural contexts. It stresses the need for learners to actively engage in meaningful interactions and cognitive processes to acquire language effectively (Celce-Murcia & Larsen-Freeman, 1999). This study would highlight the importance of incorporating grammar instruction into authentic communicative activities.

## Delimitation

The study was delimited to the PCK of English language tutors in grammar instruction at the chosen Ghanaian colleges of education. It aimed to ascertain whether integrating subject matter knowledge (content knowledge) and pedagogical knowledge in teaching and learning grammar by English language tutors at the CoEs will result in teacher candidates learning content and methodology (NTECF, 2017; Shulman, 1986). This is the case because to teach grammar effectively, English language teachers must attain an acceptable standard in pedagogical expertise and English content (Magnusson et al., 1999).

The study was grounded on the Pedagogical Content Knowledge Theory, Contextual Theory, and Experiential Learning Theory. These theories are analysed through a conceptual framework of PCK for teaching and learning grammar. It is narrowed to three colleges: Kibi Presbyterian College of Education (KPCE), Kibi; Accra College of Education (ACE), Accra; and Seventh Day Adventist College of Education (SDACE), Koforidua, all within the Eastern and Greater Accra regions because the Eastern and Greater Accra zone (EGA) had more colleges that study English language as a major or minor course of study.

In addition, the study was delimited to only third-year English language major students of the selected colleges of education. This was because the third-year English language major students had almost completed their courses on generative and functional grammar content and methodology for teaching English language at the basic schools when the study was conducted.

## Organisation of the Study

Five chapters make up the thesis. The basic introduction, background information, and other pertinent details regarding the thesis are provided in Chapter One. In Chapter Two, literature related PCK is reviewed in relation to the teaching of English language grammar. In doing this, literature is reviewed under the following sub-headings: nature of PCK, contextual theory, and experiential learning theory. Empirical studies and conceptual framework are also presented.

Chapter Three presents the research design, the paradigm, the population and sample, the data collection instrument, the data collection procedures, reliability and validity of qualitative and quantitative data, and finally, the data analysis. In Chapter Four, the results and discussion related to how the CoE English language tutors display and integrate the components of PCK into teaching grammar are presented based on the study's objectives. The summary, conclusions and recommendations based on the findings are presented in Chapter Five.

### Chapter Summary

In this chapter, a discussion of the background to the study, the statement of the problem, the research objectives, and the research questions are presented. The other issues discussed in the chapter include the study's significance, and the scope. A review of related literature is presented in the next chapter.



## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### Introduction

This chapter constitutes the review of literature relevant to the research topic. The review covers the theories underpinning PCK, the contextual theory for teaching grammar, the experiential theory, empirical studies, and the conceptual framework. This review is crucial since it incorporates relevant information from the fields of the present study. The reason for reviewing these studies is to provide the conceptual context within which the results of this study can be understood and interpreted.

#### Theoretical Framework

The three theories underpinning this study are discussed in this section. First, it provides literature on PCK and sheds light on the nature of PCK from other disciplines. It then narrows down to the construct of PCK for this study. The construct, PCK, for teaching grammar supports the need to teach and learn grammar structures in context. Also, the section provides an overview of the contextual theory, supporting the teaching of grammar content. This discussion then leads to the overall theory supporting teaching and teacher knowledge in CoEs in Ghana, Experiential Learning theory that describes learning as a result of personal experience, directly with natural objects and situations.

#### The PCK Theory

One form of knowledge required for efficient teaching is PCK. The concept was first put forth by Shulman (1986, 1987), whose empirical study on medical diagnosis inspired the concept. In an interview with the editors at

the Annual Meeting of the American Educational Research Association in Chicago (2007), Shulman argued that understanding, expertise, and access to monitoring in particular medical specialities determine one's capacity for addressing medical issues (Berry et al., 2008).

Shulman (1986, 1987) was dissatisfied with the fact that little emphasis had been paid to instructors' subject-matter expertise in teaching-related investigations despite being motivated by the startling discoveries in medical diagnosis. Studies on teaching efficacy, or process-product approaches, were frequently focused on basic pedagogical practices and instructional behaviours during the 1970s and 1980s, regardless of the subject area being studied. They focused on determining which instructor actions and approaches were most likely to boost children's academic performance. For instance, Ball and McDiarmid (1990) discovered that much of the research investigated whether teachers use a method based on inquiry and to what extent specific instances and manipulations were employed. When content was considered, it was not done subject by subject but was used as a controlling variable. Undoubtedly, researchers believed that broad teaching abilities existed, similar to general diagnostic abilities in medical diagnosis.

While general teaching practices like classroom management are essential, they are not the only sources of data used to define the knowledge base of teaching (Shulman, 1987). Therefore, Shulman (1987) advised researches in effective teaching, "subject by subject" and content-specific pedagogy. Using advanced professional knowledge in the classroom goes beyond simply implementing instructional principles like approach tempo. For example, preparation is vital to teaching, but preparing for a Mathematics

lesson and preparing for a History lecture can differ significantly. What exactly does a Mathematics teacher do and comprehend that a Science instructor cannot do? In Shulman's opinion, a "missing paradigm of research on teaching" was the content-related component of instruction (Shulman, 1986, 1987).

To Shulman, PCK turns the most special as "...it identifies the distinctive bodies of knowledge of teaching" (Shulman, 1987, p. 8). Also, PCK represents the blending of content and pedagogy to understand how particular topics, problems, or issues are organised, represented, and adapted to learners' diverse interests and abilities and are presented for instruction (Shulman, 1987). This conception implies that PCK is about more than just the information needed to grasp a subject's substance, like the English language and its strands. However, it has the skills to present material to students in the most relevant, efficient, organised, and specific manner (Park & Oliver, 2008).

In the description of the PCK components, Shulman (1986) strongly emphasises subject matter expertise, instructional strategy knowledge, and learner comprehension. Later, Shulman and Richert (1987) proposed the following PCK components: a teacher's understanding of the subject matter for instruction frames their knowledge of how to teach the subject, how learners learn the subject (what are subject-specific learning difficulties in learning), what students are capable of learning in terms of specific concepts that are common misconceptions, how curricular materials are organised in the subject area, and how specific topics are best included in the curriculum. From this proposition by Shulman and Richert (1987), the components of PCK

included the knowledge of general pedagogy, learners, context, and curriculum.

Hence, there are two vital elements of Shulman's (1987) model of PCK. They include, first, instructional strategies and representations, i.e., how facilitators transform subject-matter knowledge to facilitate effective teaching and learning (Bergmann & Sams, 2012; Tucker, 2012). Second, knowledge of students' understanding, i.e., the learning process and the content-related problems of students (Jung et al., 2011; Shulman, 1987) as starting points, subsequently adding new PCK elements. These elements play crucial roles in promoting practical learning experiences for students since the facilitator must foster an inclusive and engaging learning environment that supports students' diverse learning needs and maximises their learning outcomes. Since the constructs of PCK are crucial to effective teaching and have been the subject of theoretical and empirical studies in recent times, there is the need to look at how a myriad of studies have explored the nature of PCK in the various fields.

### **The Nature of PCK**

It should be mentioned, however, that several studies have been carried out in response to the teaching of several topics, including English Language (Grossman, 1990), Mathematics (Lee et al., 2007), Science (Magnusson et al., 1999), and Physical Education (You, 2011). Even though these studies fell short of giving a precise description of PCK, they helped to conceptualise and enhance our understanding of the phenomenon from an epistemological standpoint. These studies examined the idea of PCK for a particular topic matter and identified various PCK components. Therefore, scholars have modified and applied PCK components to specific disciplines.

In response to the teaching of English language, Grossman (1990) claimed that PCK contains four components: “conceived of purposes for teaching subject matter”, “knowledge of students’ comprehension”, “curricular knowledge”, and “knowledge of instructional procedures”. As it reflects the purpose of instruction, “conceptions and purposes for teaching subject matter” is the most significant of the four PCK components. This element relates to “knowledge beliefs about the purpose for teaching a subject at different grade levels” (Grossman, 1990, p. 8). Grossman’s (1990) model is heavily critiqued from an integrative standpoint despite having a subject matter connection to the model. The four elements are handled as static, independent parts by Grossman. For effective teaching, the components of PCK need to interact and be integrated (Fernandez-Balboa & Stiehl, 1995). Consequently, if teachers integrate elements and apply them to a particular educational environment, it results in improved learning outcomes.

A PCK model for ESL teachers developed by Andrews (2001) for the English language follows a similar line of reasoning. Through the lens of linguistic PCK, Andrews has conducted substantial research on understanding teaching effectiveness. Since it integrates teachers’ language competency with their content understanding of languages, Andrews emphasised the need for teacher language awareness as a critical PCK component. Although it overlaps with other PCK components, such as subject matter cognition and learner knowledge, teacher language awareness (TLA) needs to be more emphasised in his approach. The overlapping causes uncertainty over how the various PCK components interact. Although they are commonly viewed as discrete categories of teacher knowledge paralleled with PCK, his approach treats

knowledge of pedagogy and context as two PCK components (Shulman, 1987).

Gudmundsdottir (1991) also covered the components of PCK in the context of English language as a second or foreign language. Subject matter knowledge, general pedagogical knowledge, and methods of instruction are among the components of PCK recommended by Gudmundsdottir. In 1995, knowledge of context and knowledge of oneself were included. The significance of how teaching context- and content-specific knowledge influences the choice of instructional tactics is highlighted by all PCK models in the English language sector.

By extending Shulman's (1987) explanation to include knowledge of evaluation, which also needs to be improved in Grossman's (1990) categories, Tamir (1988) clarifies PCK components in other disciplines. Tamir's explanation of PCK components differs from other explanations in that it places equal emphasis on both the declarative knowledge and the procedural nature of PCK, which are referred to as skills. Additionally, Magnusson et al. (1999) developed the PCK component model for Science education based on Grossman's (1990) and Tamir's (1988) categories, which includes both conception of teaching aims and knowledge of evaluation. Tamir's model precisely defines the PCK constituents, which clarifies and facilitates the application of the framework to PCK investigations.

From an integrated view, Magnusson et al. (1999) created a PCK component model for Science instruction. The five PCK components—knowledge of the science curriculum, the student's grasp of science, instructional approach, and science literacy assessment—were accurately

described by this model. His approach adds sub-components to each component—the PCK components in instructional practice that may be observed and evaluated. In empirical investigations, PCK can be evaluated by seeing these sub-components and doing a follow-up interview (Park & Oliver, 2008). The two-way interaction of PCK components is stressed in Magnusson et al.'s model, and it helps mould PCK components as a unified construct. The integrated view, however, does not permeate the whole structure because there is only one interaction between the orientation to teaching Science and the other four parts, but not between the other four.

Educators must assemble all understanding into a thorough on-site wisdom. Regarding PCK, teachers must incorporate all PCK elements into decision-making lessons. Numerous empirical studies have established the integration of various aspects of teacher knowledge into teaching practice (Jang, 2011; Loughran et al., 2008). Teaching is a circular process from “comprehension” to “new comprehension”, rather than a straightforward once-and-done procedure (Shulman, 1987, p. 15). This suggests that the integration of PCK is carried out through constant revision by teachers' reflection, and with reflection, coherence among the components is strengthened (Park & Oliver, 2008a). The model developed by Magnusson et al. (1999) ignores the cyclical growth of PCK through reflection and oversimplifies the integration of teacher knowledge. Despite criticism, Magnusson et al.'s model is still widely adopted in PCK studies.

Besides, the impact of PCK on a teacher's instructional decisions and tactics has been explicitly highlighted by Fernandez-Balboa and Stiehl (1995) and Magnusson et al. (1999). Like Magnusson et al.'s model, Fernandez-

Balboa and Stiehl's PCK model emphasises the significance of subject-specific PCK. They contend that the elements of PCK include understanding the subject matter, students, instructional tactics, teaching situations, and one's own teaching methodology. The models by Magnusson et al. (1999) and Fernandez-Balboa and Stiehl (1995) emphasise the value of subject-specific PCK. Subject-specific PCK empowers teachers to understand and respond to the unique challenges in teaching specific subjects, leading to improved learning outcomes and an effective learning environment.

In addition, according to Cochran et al. (1993), instructors' understanding of teaching should be vibrant, ever-evolving, and expanding. Cochran et al.'s (1993) version of PCK, pedagogical content knowing (PCKg), is based on the constructivist viewpoint. Thus, it refers to the ability to educate dynamically. PCKg integrates four different teacher knowledge types: subject matter knowledge, knowledge of pedagogy, knowledge of students, and knowledge of environmental factors. In this instance, the focus is on the final two elements, with teachers' perceptions of students playing significant roles in instruction. The axiom of this approach is that as teachers' experience expands, so do all four PCK components. So, if the instructors encounter the components simultaneously, they will experience a synergistic growth in the components; otherwise, the growth of the components might not always be equal.

Park and Oliver (2008) also evaluated PCK studies and concluded that PCK included elements outside traditional topic areas like Science, English language, and Mathematics. PCK is about properly transferring knowledge from a teacher to students, regardless of the type of knowledge; hence, PCK



includes domain-general components. In this sense, PCK includes some elements that apply to all subject areas.

From the literature, it can be concluded that strong PCK requires subject matter knowledge and pedagogical knowledge (SMK) (Abell, 2007; Davis & Simmt, 2006; Shulman, 1986; Van Driel et al., 1998) and ought to be seen as a unit rather than as a collection of parts. Also, PCK is a topic-specific construct built by classroom experience (Abell, 2007; Grossman, 1990; Van Driel et al., 1998). Shulman (1986) and Elliott et al. (2018) add that PCK is not innate but built over time. Experience plays a critical role in shaping a teacher's PCK. However, Friedrichsen et al. (2009) counter that PCK augmentation may not necessarily result from experience but from continuous professional development, learning, and effective monitoring. Also, some teachers may become inseparable from teaching methods without critically evaluating their effectiveness (Crochran-Smith & Zeichner, 2005; Hiebert et al., 2002). Despite these arguments, robust PCK is indicated by the components' reciprocal integration to teach a specific subject or content area (Fernandez-Balboa & Stiehl, 1995; Magnusson et al., 1999; Marks, 1990).

PCK components are only sometimes generic. Many studies of Mathematics teacher knowledge have successfully used Magnusson's (1999) PCK component model for teaching Science. While some sub-components, such as learning requirements and student problem regions, have been discovered in Magnusson's model, the PCK components need to be more specific to encompass the characteristics of Science subject matter. A deeper consideration of PCK components may lead to the emergence of elements with subject-specific characteristics. Physics and Mathematics share much

similar subject matter, which is another explanation. For instance, the content of these two disciplines is structured according to concepts, and it is evident that the concepts that will be taught are the knowledge that the students must understand. However, compared to Science and Mathematics, the nature of a topic like foreign language is very different.

It must be noted that foreign language PCK is more complicated than PCK of other subjects, as various scholars have discovered in the field of language studies, including Macaro (2003) and Pachler et al. (2007). One of the reasons is that learners learn subjects through the medium of the foreign language that is being taught in the classroom. Furthermore, the persistent interference of the primary language adds to the complexity of PCK for foreign languages. Therefore, compared to other topics, the emphasis on the instructional language in foreign language PCK may be substantially greater. According to Andrews (2001), the factors mentioned by earlier studies are too general to prove the distinctiveness of language training. In essence, teacher language awareness, often known as language PCK, should include strategy competence, language competence, and subject matter knowledge.

Andrew's (2001) viewpoint on language PCK components does not restrict Shulman's (1986) viewpoints on PCK. According to Shulman's definition, all PCK aspects should be mixtures of topical and instructional techniques or other knowledge components. These constructs by Shulman are subject-specific and incorporate Andrew's teacher language awareness as an integration of PCK in teaching English language. However, Andrew's viewpoints on the language PCK component model should not be ignored since they are specific to language teaching, and the uniqueness of language

teaching lies in the fact that “language is taught through language” (Ellis, 2003; Krashen, 1982; Swain, 1985). Therefore, the instructional language is suggested in the current work as one of the PCKs in teaching grammar. Aligned with this understanding of language PCK, this thesis, though supported by Shulman’s ideology of PCK, argues that the knowledge and skills needed for English language tutors to conduct the work of teaching grammar effectively at the colleges of education would not be ignored.

### **Rationale for Shulman’s Pedagogical Content Knowledge Construct**

Even though Shulman’s (1986) components of PCK have been criticised by Cochran et al. (1993) as compartmentalised and static, they are the preferred theory for an interdisciplinary study. Furthermore, many studies base their classification on Shulman’s principle regardless of which parts are determined to be PCK components. The underlying idea is that each component is a mix of pedagogical knowledge and other knowledge components for instruction. This idea is consistent with the essence of Shulman’s definitions: PCK is transforming subject-matter information into knowledge that has a pedagogical component and is comprehensible to students. Although Grossman’s (1990) breakdown of PCK aspects uses terms like “curricular knowledge,” “instructional strategies,” and “knowledge of students,” the examples provided to describe those terms show that they are limited to the elements that are closely related to “subject matter knowledge”.

Additionally, scholars like Park and Oliver (2008) and Magnusson et al. (1999) assert that the definition of PCK may be misunderstood if general terminologies are used. They use extreme caution while expressing PCK components, limiting broad terminology to a single topic. For instance, rather

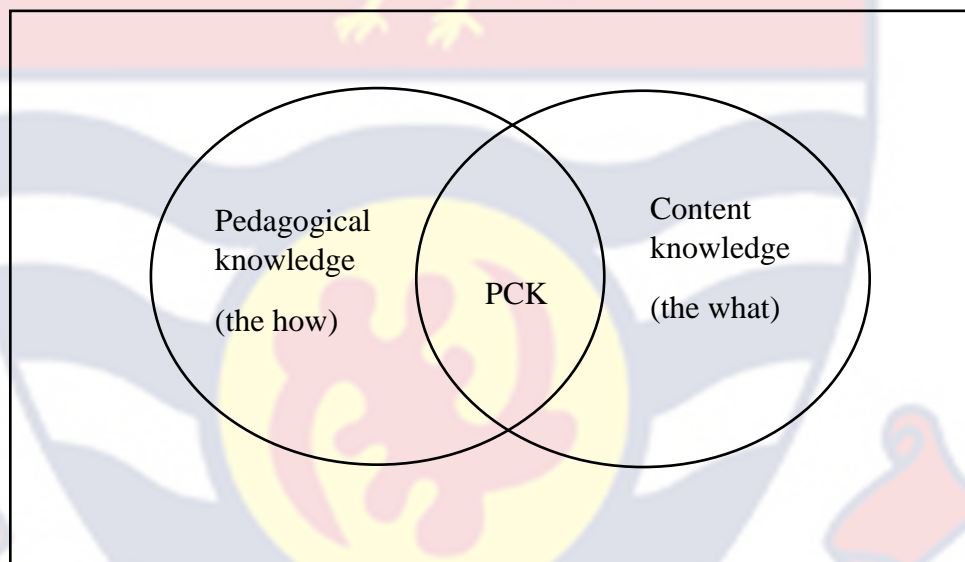
than using the general terms “knowledge of curriculum” and “knowledge of students”, Magnusson et al. (1999) and Park and Oliver (2008) utilised “knowledge of the Science curriculum” and “knowledge of the students’ comprehension of Science”.

Hence, there is no one correct way to divide up the knowledge in the knowledge base for instruction (Magnusson et al., 1999) and any designation of an item as PCK is really “a matter of focus” (Marks, 1990). This idea means that no one explanation should be regarded as correct. To clarify PCK components, it is essential to remember that each component is a combination of subject matter knowledge and pedagogy or other knowledge components for teaching. Therefore, this study adopts Shulman’s (1986) model, *pedagogical content knowledge*, and sub-categories to make it relevant in the college context. The focus of the study is necessitated by Friedrichsen et al.’s (2011) assertion that studies on PCK must indicate how the components interact with each other, but not separated from each other as proposed by other researchers such as Grossman (1990) and Andrews (2001) who are more related in the field of English language.

Therefore, the conceptual framework for this study was based on the components of PCK, according to Shulman (1986), which expanded or adapted the notion to include cross-cutting issues and differential learning in teaching grammar at the selected CoEs in Ghana. The constructs, pedagogical and content knowledge, consist of sub-constructs which interact during instruction. These components need to be discussed to know the various constructs and their sub-constructs that form the amalgamation.

## The Pedagogical Content Knowledge Construct

This theory is composed of two relatively independent constructs. PCK identifies the distinctive bodies of knowledge for teaching. It represents the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organised, represented, and adapted to learners' diverse interests and abilities and presented for instruction. Pedagogical abilities and subject matter understanding are key components of successful teaching and learning. Figure 1 below presents a diagram of PCK constructs.



*Figure 1: The PCK Model (Adopted from Shulman, 1986)*

Figure 1 presents Shulman's (1986) argument of the PCK construct as "that special amalgam of content and pedagogy that is uniquely the province of teachers, their special form of professional understanding" (Shulman, 1987, p. 8). The construct, PCK, is a type of knowledge exclusively used by teachers. Therefore, to accomplish effective teaching, Shulman (1986,1987) posits that teachers need to combine the subject matter (the what) and pedagogy (the how) to demonstrate "an understanding of how particular topics, problems, or issues are organised, represented and adapted to diverse

interests and abilities of learners, and presented for instructions” (Shulman, 1986, p. 9).

### **Pedagogical Knowledge**

Pedagogical knowledge (PK) makes an instructional practice sound and effective. Pedagogical knowledge is defined by Shulman (1987) as “broad principles and strategies of classroom management and organisation that appear to transcend subject matter” (p. 8). Others view pedagogy as the art and science of educating children, often used as a synonym for teaching (Hasan, 2008). Hasan (2008) indicates that pedagogy is “about the relationship between teaching and learning and how together, they lead to growth and understanding through meaningful practice” (p. 2). In relations to these quotes of PK from Hasan, it is clear that he disagrees with the notion that pedagogy is synonymous with teaching; therefore, he claims that “the meaning of pedagogy is related to the interest of students” and “pedagogy is also conceived as the strategy used by teachers to develop the potential of students” (2008, p. 2).

Content knowledge, pedagogical content knowledge, and general pedagogical knowledge are three sub-constructs of pedagogical knowledge, according to Shulman (1986). Shulman defined content knowledge as the teacher’s knowledge of the subject area. In addition to knowledge of the relevant facts, this also comprises an understanding of the theories, conceptual framework and modes of thought. For Shulman, “to teach well, one must know one’s subject thoroughly” (p. 69).

Pedagogical content knowledge, on the other hand, refers to the teacher’s understanding of how to teach the content effectively. This includes

knowledge of the student's prior knowledge and misconceptions, the instructional strategies, and materials that are most effective for teaching the content and assessment that can be used to measure students' learning. However, the essence of this type of knowledge is the ability to transform the content knowledge into an understandable form for learners (Shulman, 1986). As one external sign of PCK, this element has been explored and studied in PCK empirical research (Loughran et al., 2004; Nuangchalem, 2011). It benefits from and is influenced by the growth of general pedagogical understanding. However, this element alludes to a collection of instructional techniques created for and appropriate to a specific subject. It is impossible to generalise understanding of instructional tactics and representation as a PCK component based on the context of its use (Magnusson et al., 1999). A teaching strategy that works well in one subject area might not be appropriate for another subject area or topic. This expertise involves a grasp of and ability to apply instructional techniques to convey subject matter knowledge.

General pedagogical knowledge refers to the teacher's understanding of the broader teaching and learning principles and strategies applicable across different subject areas. General pedagogical knowledge is not unique to any particular subject but is a set of understandings about conveying information and facilitating learning. They include knowledge of students' development and motivation, classroom management, and assessment and evaluation (Shulman, 1986). General pedagogical knowledge forms the backbone of effective teaching and learning. Hence, empowering educators to create meaningful and impactful learning experiences will equip learners with knowledge, skills, and attitudes for life (Bransford et al., 2000; Dewey, 1933).

Based on these views on what PK is, the study views PK as the numerous teaching methods and strategies, classroom organisation, and management that help make teaching grammar effective. Students can gain a deeper grasp of how language functions through debate, experimentation, and grammar-focused pedagogy, enabling them to intentionally create and manage their speaking and writing (production skills). Teachers knowledgeable about this subject can determine whether and when a representation is suitable for teaching a specific subject or topic. The ability to evaluate, assess, and choose instructional strategies appropriate for language education is referred to as knowledge of instructional strategies for the English language. The purpose of teaching language (communicative competence) and task-based activities has branched out into the knowledge of instructional strategies for teaching grammar by English language tutors. Developing language used in communication and the awareness of piquing students' interest through instructional language are two sub-constructs of educational knowledge. These are instructive languages inherited from language teaching.

### **Content Knowledge (Knowledge of Subject Matter)**

The subject matter is an essential component of teacher knowledge. Shulman (1986) states that subject matter knowledge (SMK) refers to “the amount and organisation of knowledge per se in the mind of the teacher” (p. 9). In addition, he states that teachers must not only be capable of defining for students the accepted truths in a domain, but they must also be able to explain why a particular proposition is deemed warranted, why it is worth knowing, and how it relates to other propositions. Subject matter understanding



strengthens the teacher's powers and, in so doing, heightens the possibilities of his art (Scheffler, 1973).

An essential aspect of subject matter knowledge is for effective teaching and learning (Shulman, 1986). It enables teachers to design and deliver coherent, meaningful, and accurate instruction. Subject matter knowledge constitutes sub-constructs such as conceptual knowledge, procedural knowledge (Hill et al., 2008), pedagogical content knowledge (Shulman, 1986), declarative knowledge, and procedural metacognitive knowledge (Hill et al., 2008). This thesis uses pedagogical content knowledge, knowledge of how to teach a particular subject or topic effectively, conceptual knowledge, and understanding of the fundamental concepts and principles that underlie a particular discipline. It includes knowledge of key ideas, theories, and models, and the relationship and application. In addition, pedagogical content knowledge includes explaining complex concepts, anticipating students' misconceptions and providing feedback to students (Ball et al., 2008).

Teaching is difficult and complex, needing knowledge from many different fields. Educators incorporate their knowledge of the subject matter, pedagogy, students, educational context, and teaching orientation both implicitly and explicitly into their instruction. For effective teaching, it is required to concurrently integrate knowledge of the subject matter, students, pedagogy, teaching philosophy, and contextual information. Different PCK characteristics, however, may develop independently and unevenly. In the meantime, adequate content knowledge must be combined with several teaching-related knowledge areas for teachers to attain teaching effectiveness.

The PCK constructs and their sub-constructs are relevant to effective instruction. However, the PCK of teaching grammar should be supported by the contextual theory. As a result, the English language teachers need specialised knowledge about how to deliver grammar knowledge in content-specific pedagogy where grammar knowledge is taught meaningfully within the context of real-world language use (Ellis, 2006; Larsen-Freeman, 2001). Hence, it is important to have a debate on the contextual theory in relation to PCK in teaching grammar.

### **Contextual Theory**

Grammar has been defined in a variety of ways by academics. According to Thornbury (1999), grammar is a sentence-creating tool. A variety of meaningful sentences can be produced with just a few simple rules. It is a set of formal patterns in which words of language are ordered to express meaning (Chomsky, 1957). According to Ur (1999), grammar is a set of rules that specify how words are combined and modified to create appropriate linguistic units of meaning. These claims specifically consider grammar as the way words are used, grouped, and organised to create intelligible written or spoken communication.

Teaching grammar is a crucial component of second language instruction because a precise grasp of language structures is crucial to second language acquisition. With the advent of teaching techniques based on various learning theories, the emphasis on grammar in language has been called into question. Grammar education through context positively impacts on learners' ability to correctly apply grammatical structures in language skills (Larsen-Freeman, 2001; Nunan, 1991). Contextual theory emphasises the value of

teaching language within a meaningful context (Richards & Rodgers, 2001). This idea contends that students learn grammar most effectively when it is integrated with other language acquisition skills like reading, writing, and speaking, and is presented in a way that is pertinent to their interests and needs (Krashen, 1982; Nunan, 1991; Smith et al., 2019).

Several theories and frameworks support teaching grammar in context (Canal & Swain, 1980; Celce-Murcia & Larsen-Freeman, 1999; Ellis, 2003; Larsen-Freeman & Anderson, 2001; Langacker, 1987). These theories emphasise the importance of considering language use in its social, cultural, and situational context. They also believe that language learning is not just a cognitive process but also a social and interactive one in which learners must negotiate meaning in various contexts and engage in meaningful communication. Contextual theory of learning grammar has been influential in second language acquisition, highlighting the need to go beyond a purely linguistic approach and consider the broader social and cultural context in which language is learned and used.

Celce-Murcia and Larsen-Freeman's (1999) theory was adopted to support the PCK for teaching English language grammar. According to Celce-Murcia and Larsen-Freeman, "The context of the situation is a primary factor that determines the nature of language that is produced and comprehended" (Celce-Murcia & Larsen-Freeman, 1999, p.14). They emphasise the role of cognitive processes in language acquisition. The theory suggests that learners must actively engage in cognitive processes such as analysis, synthesis, and evaluation to understand and use language in context fully. Consequently, learners need cognitive skills such as attention, memory, and processing speed

to successfully acquire and use a new language. Celce-Murcia and Larsen-Freeman argue that language learners' cognitive abilities interact with contextual factors to shape language learning and use.

In addition to cognitive abilities, Celce-Murcia and Larsen-Freeman (1999) posit that language learning is also social and cultural. Language learners must learn the rules of grammar and vocabulary and develop an understanding of the social and cultural norms that govern language use in different contexts. The process involves acquiring pragmatic and sociolinguistic competence, which enables learners to use language effectively and appropriately in various communicative situations. Overall, the contextual theory of language acquisition highlights the importance of understanding language in its social and cultural context, and stresses the need for learners to actively engage in meaningful interactions and cognitive processes to acquire language effectively. The contextual theory is guided by some principles as presented in the next section.

### **Principles of Contextual Theory**

Some principles guide the contextual theory of language acquisition. One of the fundamental principles of this theory is the notion of “complexity” in language learning, which refers to the dynamic interplay between language use, language form, and social context (Celce-Murcia & Larsen-Freeman, 1999). In other words, language learning is a complex process that involves mastering a language's linguistic forms and understanding how those forms are used in different social and cultural contexts. The linguistic forms, structures, patterns and rules that govern language, such as grammar, syntax,

phonology, and vocabulary, are employed in real-life situations for effective language acquisition (Byram, 1997; Larsen-Freeman, 2018; Vygotsky, 1978).

Another important aspect of the theory is the role of “meaningful interaction” in language learning. According to Celce-Murcia and Larsen-Freeman (1999), language learning is most effective when learners engage in meaningful interactions with speakers of the target language in which they use language to convey their ideas and to understand the ideas of others.

In addition to the key principles of contextual theory is the notion of language as a complex and dynamic system. Celce-Murcia and Larsen-Freeman (1999) argue that language cannot be understood as a static set of rules or structures but rather as a constantly evolving and adapting system that is shaped by the interactions between speakers and their environment. This dynamic view of context is shaping language use and development. When these principles (creating opportunities for learners to engage in meaningful communication with others and to participate in social and cultural practices of the target language) are followed, they could positively result in language learning.

It is believed that learning grammar in context will allow learners to see how rules can be used in sentences. Language is context-sensitive. This means that, in the absence of context, it is tough to recover the intended meaning of a single word or phrase (Thornbury, 1999). The teacher’s chief task when teaching grammar is to show the students what the language means and how it is used, and must also show them what the grammatical form of the new language is and how it is said and written (Harmer, 1991). The teacher can use authentic texts, such as articles, short stories, dialogue, and other

relevant and exciting activities. These texts should contain examples of the target grammar structures (Richards & Renandya, 2002).

When grammar is taught in context, students comprehend how language functions, which enhances their communication abilities (Celce-Murcia & Larsen-Freeman, 1999; Ur, 1996). The most outstanding technique to teach students how native speakers use the new language is to offer it in context (Harmer, 1991). Accuracy in language acquisition is crucial for comprehending oral and written performances. Context helps students comprehend grammar usage more precisely and improves their spoken and written skills in the studied language (Wajnryb, 1990).

Though several proponents have emphasised the importance of contextualised grammar instruction (Ellis & Shintani, 2014; Nunan, 1991), there are also arguments against its usage. Darling-Hammond and Bransford (2005) believe that time constraints can be a factor, especially for advanced-level students. Teaching grammar in context could downplay other topics like pedagogy, classroom management, and subject-specific content. Also, teaching grammar wholly in context can lead to a lack of foundational knowledge of learners, limited focus on explicit rules and inconsistent outcomes, causing potential gaps in students' understanding of grammar and hindering overall language development (Chaudron, 1988; Ellis, 2006; McNamara, 1996). Hence, while teaching grammar in context could benefit language acquisition and usage, teachers could experience some challenges and setbacks in using this approach exclusively. Judging from these swings, prospective teachers should experience the combination of both explicit

grammar instruction and contextual usage to help them address the diverse needs of their learners in future.

Altogether, the contextual theory of Celce-Murcia and Larsen-Freeman (1999) is the premise supporting the overall content of the topic under study.

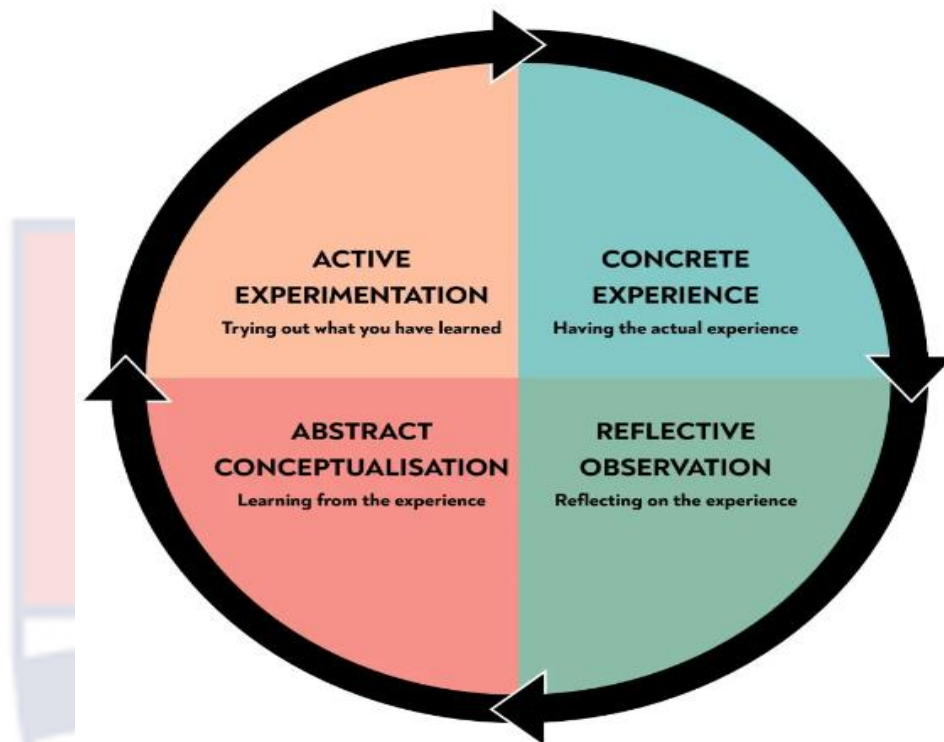
The contextual theory in teaching grammar highlights the importance of teaching grammar in a relevant and meaningful way to students. By incorporating grammar instruction into authentic communicative activities, students can develop a deeper understanding of grammar and its use in context, leading to more effective language teaching and learning outcomes.

The CoEs serve as the context for facilitating experiential learning opportunities, where tutors can better prepare students for the challenges of teaching grammar. In essence, the tutor should display effective instructional activities by integrating PCK constructs and incorporate hands-on-activities, real-world examples, and interactive exercises into the teaching of grammar for tangible experiences and skills. Hence, how learning is best experienced in the selected CoEs in Ghana is crucial to this study.

### **Experiential Learning Theory**

Learning from experience is a key component of the Experiential Learning theory put out by the psychologist, David Kolb, whose research was influenced by the theories of John Dewey, Kurt Lewin, and Jean Piaget. This kind of learning involves transitioning experience into knowledge to produce new knowledge. Grasping and modifying an experience produces knowledge (Kolb, 1984). Co-ops, practicums, and classroom activities that inspire job experience are just a few examples of the learning models used in higher education where experiential learning plays a significant role.

## The Experiential Learning Modes



*Figure 2: Kolb's Experiential Learning Modes*

The Experiential Learning Theory has learning modes called the Experiential Model Theory. These modes are categorised into two: Grasping experience and Transforming experience. Abstract conceptualisation and concrete experience are two means of understanding experience, according to Kolb (1984), while active experimentation and reflexive observation are two ways of modifying it. Each learner participates in a concrete experience (CE), an activity or assignment. To Kolb, participation is the key to learning. It needs to be more for students to read about or observe something in action. The student needs to actively participate in a task if they want to gain new knowledge.

Also, under grasping experience is Abstract Conceptualisation (AC). Here, learners are made to create a sense of events. The learner strives to extrapolate meaning from the events by thinking back on their prior



understanding. This situation entails interpreting and contrasting the event with their present conceptual understanding. Students must collaborate in groups or pairs to complete assignments in the classroom. A student's grasp of abstract concepts is deepened by this method, which also applies the lessons in actual situations. This situation could include role-playing for a concept and presentation on stage by state procedures to perform a productive task. Consequently, this furthers students' understanding of integrating language skills in a single task like communication.

The environment, stakeholders, context, and outcomes are the primary considerations at the Reflective Observation stage, when students are encouraged to reflect on their experience from a variety of perspectives deliberately. At the end of each teaching job, instructors are expected to guide learners through reflection. This condition will allow learners to consider what they believe they have learnt and to pinpoint any areas of the lesson they believe to be complicated or unclear. Situating this at the CoEs context, teacher trainees attend School Teaching Support (STS) every week to interact with the teachers and pupils. Later, they meet with their supervisors to discuss observations, including challenges and recommendations. Their findings are recorded in students' journals. Students at this stage are expected to observe and connect the knowledge acquired in college to what they observed.

Testing is the phase of Active Experimentation in the cycle. Students take part in a task again, but this time, they try to apply what they have learned to a fresh scenario. To use the new knowledge in the future, they can predict outcomes, analyse tasks, and create plans. It is relevant to the lives of learners

if they are allowed to put their knowledge into practice to ensure that the information is retained for future use.

Piaget (1983), who supports this approach from a social perspective, holds that people construct their understanding of the world by first using their existing experiences to comprehend a new concept and then modifying their expectations to consider new experiences. The Zone of Proximal Development (ZPD) and scaffolding were established by another social theorist, Vygotsky (1978), through his explanation of how social interaction shapes the human. The ZPD gauges how learners' cognitive growth is changing through social interaction in the classroom. Ideally, this helps students realise their full learning potential with the aid of their peers and teachers. Two crucial elements of the ZPD are the students' potential growth and the significance of interpersonal connection.

Also, observation, imitation, and modelling lead to learning. Bandura (1977) explains the meaning of observation to include "live" mode, a "verbal" instructional model where explanations and descriptions are presented. Advanced-level instructors mostly employ the "verbal" instructional model. Here, other symbolic models such as fiction/non-fiction in movies, television programmes, online media and books could be observed to lead to learning.

Therefore, as the individuals reflect on what is being observed (the teacher and the grammar teaching), they build a general theory of what this information might mean. That is, the observers form abstract concepts and generalisations, after which they test the implications of these concepts in new situations like practicum, in service, and communication skills.

### Theories in Practice at the Colleges of Education Context

The PCK theory, Contextual theory and the Experiential theory emphasise the importance of embedding grammar instruction with meaningful and authentic activities especially at the CoEs. When these theories are combined, the English language tutors can effectively integrate grammar instruction into their lessons by selecting relevant content, designing engaging activities, and providing targeted feedback tailored to individual students' needs.

As a result, the programmes for teacher education aid in the advancement of PCK integration. PCK elements should be incorporated in the preparation and execution of instruction since they are essential to effective teaching (Chan & Hume, 2019; Park & Chen, 2012). At the CoEs, English language tutors must understand their roles and the roles of teacher trainees. They are to construct their pedagogical content knowledge in the teaching of grammar as well as other aspects of the English language. At this stage, the role of language tutors is to help teacher trainees learn how to understand children's language teaching and learning (Flynn & Hill, 2005), to learn the teaching strategies for grammar (Guccione, 2011), and to learn the related knowledge to help pupils learn (de Jong et al., 2013).

At the CoEs, right from level 100, English major students are taken through methodology courses, supported teaching in schools (STS) programmes, and learning of contents (subject matter) in grammar to build their PCK. In school, they are made to combine content knowledge and methodology to practise teaching during on-campus teaching practice. Here, teacher trainees play two-fold roles: learning and teaching, and transforming

process. Therefore, it is the responsibility of the instructors to guide teacher trainees to shift their role from being students and learning the knowledge of content to being teachers and learning how to teach during on-campus and off-campus teaching practice (Kolb, 1984; NTECF, 2017; NTS, 2017).

English language tutors must explore the approaches to teaching grammar in the second language (Celce-Murcia & Larsen-Freeman, 1999). This situation is better if English language tutors practise PCK effectively during grammar lessons to foster learning of contents and observation of good practice (Kolb, 1984; Shulman, 1986). They also need to teach students the theories of learning language during methodology classes and the specialised approaches to language teaching designed for the levels students will teach (Nordquist, 2019). English language tutors' use of materials such as readings, films, real objects, charts, and pictures to examine learning theories and teaching helps teacher trainees master the content knowledge they need to teach. Furthermore, English language tutors' use of different strategies such as group discussion, presentations, group projects, role-play, and class meetings will help teacher trainees learn different approaches to display and demonstrate understanding. They must also see how tutors integrate approaches to teaching grammar in context (Celce-Murcia & Larsen-Freeman, 1999). Indeed, students must learn to employ actions, steps, plans, or routines necessary for processing the given information (Hashim, 2018).

Teacher trainees must be aware that teaching is influenced by the categories of PCK structure, where they consciously adopt the knowledge and skills to fit changing settings (NTECF, 2017; Shulman, 1986). This situation is so because strategies cannot be fixed as teaching contexts change.

Additionally, teachers themselves change over time as their teaching experience accumulates. Teacher trainees are to learn, experience, and practise the approach to teaching the English language for themselves and their career (NTECF, 2017). Under the National Teachers' Standards (2017), this condition will conform to international teaching standards and promote sound professional values and attitudes, professional knowledge, and professional practice (NTS, 2017).

### **Empirical Studies**

The available literature that is pertinent to the investigation is presented in this section. Professional knowledge is one element that affects teachers' ability to instruct (Evens et al., 2018). According to Shulman (1986), PCK is a special kind of knowledge that sets instructors apart from other specialists in the field. Researchers interested in studying this special skill set that only teachers use have taken an interest in PCK (Kind, 2009).

Studies in several academic fields, including Science, Mathematics, Social Studies, and English language, have examined the integrated PCK domains (Mishiwo et al., 2017; Ozden, 2008; Sri et al., 2021; Wilmot, 2020). According to Magnusson et al. (1999) and Shulman (1986, 1987), prospective teachers need to understand each PCK component and incorporate them into the teaching and learning process. For effective teaching and learning, coherence and interactions between PCK components are crucial to classroom instruction, according to Magnusson et al. (1999) and Shulman (1986, 1987). If a teacher cannot coherently integrate the PCK components, then, the teacher should understand that just one component may not be enough to accomplish a

lesson's objectives. Studies done on the premise of integrating PCK constructs are synthesised below.

Ozden (2008) investigated the effect of the amount and quality of content knowledge (CK) of PCK on Science student teachers at Adiyaman University. Though the study focused on content knowledge, it examined the students' understanding of concepts as a relationship between content knowledge (CK) and pedagogical knowledge (PK). Ozden compared 28 Science students' PCK by applying the lesson preparation method by Van der Valk and Brockman (1999), content knowledge test, and semi-structured interviews in his study. The study's findings revealed that content knowledge has a positive influence on PCK. This supports the argument that each domain of PCK is relevant and that irrespective of the construct a researcher focuses on, the other domain must be addressed. Hence, the use of lesson preparation tasks written by students indicated an integration of PK into the CK study, though it was not explicitly stated.

In another study conducted in the field of Chemistry by Sri et al. (2021), PCK integration was explored. The study explored the understanding of prospective Chemistry teachers in integrating PCK components in learning. Sri et al.'s study is similar to Ozden's (2008) study in that they both investigated prospective Science teachers. In addition, Sri et al. and Ozden had similar aims of identifying the PCK of prospective Science teachers. However, the theoretical domains of these researchers were different. Sri et al. employed Magnusson's framework to identify the ability of the prospective Chemistry teachers to each component of PCK, while Ozden used Van de Valk and Broeknnan's (1999). This indicates that although both studies were in the

Sciences, they employed different theoretical frameworks. The argument here is that no matter the discipline, the researcher could use any of the PCK models, depending on the purpose of the study.

Sri et al. (2021) made use of 61 Chemistry Education students while Ozden (2008) used 28 Science students at the Department of Primary Science Education. Even though both studies employed mixed methods design and collected documentation and interview data, their focus on PCK domains was different. Hence, their findings were different. Sri et al.'s study found that the PCK components of prospective Chemistry teachers have not been mastered properly. Consequently, each of the components needs to be developed. Also, there was the need for a professional development programme to enhance the ability of students. In addition, in the field of Science, Wilmot (2020) investigated the PCK of 149 senior high school Biology teachers for teaching genetics across different demographics in Ghana. Though the study was in Biology, he employed Magnusson et al.'s (1999) theory, same PCK model used by Sri et al. (2020) in Chemistry.

However, Wilmot's (2020) study used data from in-service teachers rather than from prospective teachers, as Sri et al. (2020) and Ozden (2008) did. Also, Wilmot used a larger sample size as compared to Sri et al. and Ozden. Wilmot did a quantitative study using questionnaire to compute the composite variables to find out the significant correlation between the five components of Magnusson et al.'s (1999) PCK. The results revealed that the PCK constructs used were the same across the different demographics of teachers, specifically with their gender.

Mishiwo et al. (2017) investigated how pre-service teachers use their PCK (teachers' understanding of material and students' thinking process) to recognise and diagnose the students' misunderstanding in juxtaposing, adding, multiplying, and dividing fractions. Pre-service teachers are expected to recognise students' misconceptions, explain why such misconceptions exist, and pose specific inquiries to determine the students' thought processes that gave rise to those beliefs. Mishiwo et al.'s study used 72 Mathematics students out of 320 in a quantitative study at Basic Seven in Akatsi District, Ghana. From the survey, it was revealed that most pre-service teachers could recognise pupils' mistakes but needed help to explain why the pupils made those mistakes. This suggests that teacher training institutions should incorporate PCK into the curriculum to give pre-service teachers the knowledge and abilities necessary to evaluate pupils' thought processes.

Synthesising these studies (Mishiwo et al., 2017; Ozden, 2008; Sri et al., 2021; Wilmot, 2020), it is evident in the literature that PCK has been studied across disciplines. Though these studies were not situated in English language, they are similar to the current study in that the current study is in the domain of PCK and supports the interaction and integration of PCK constructs. Also, though these studies looked at PCK, they came up with similar results from different contexts: pre-service teachers and in-service teachers outside Ghana and in Ghana. The results would have changed if these researchers had added observation to give more information on PCK domains since observation exposes PCK components in action. Therefore, through a mixed-method research design, the current study observes teachers in the classroom, interviews teachers, and collects quantitative data from 155



students. Also, the current study finds out how the tutors' PCK in teaching English language grammar at the selected colleges of education leads to the understanding of grammatical concepts of students. The current study also adapts Shulman's (1987) PCK constructs and the incorporation of cross-cutting issues into topic-specific pedagogy for teaching grammar content in the selected CoEs in Ghana.

It is believed that teachers' PCK advances over time. In a study conducted by Park and Oliver (2008), the results conclude that teachers' PCK improves over time. In this study, three high school Chemistry teachers were the subjects of a multiple case study that evaluated the teachers' PCK through observation, interviews, and document analysis (CRHS: Chattahoochee River High School, Georgia, USA). The results indicated that the six PCK components interact with one another so that effective teaching can occur. Therefore, teachers must integrate the components and put them into practice within a specific context. This was revealed through data analysis using three approaches: constant comparative, enumerative, and in-depth explicit PCK (Van Driel et al., 1998). The results concluded that PCK is essential to teachers' professionalism and develops with time.

In addition, PCK models can be conceptualised in any form by researchers. This implies that PCK constructs can be expanded to include other components; components could be renamed or new components could be created depending on the discipline, the context of the study, or the researcher's interest. However, the core components, pedagogy and content knowledge, should be part of the composition. Ijeh and Nkopodi (2013) looked at how much their theoretical framework influenced teachers' PCK in

Science and Mathematics in Zimbabwe and South Africa. They discussed a theoretical framework to help teachers comprehend the tripartite interaction between pedagogy, curriculum, and learners. In the study, Shulman's (1987) PCK model was expanded to add learner factors utilising a mixed-method approach that included questionnaires, interviews, lesson observations, concept map exercises, and document analysis. On that premise, the current research is in order if it expanded Shulman's PCK constructs to include cross-cutting issues as enshrined in the NTECF.

Also, in the Umgungunlovu district in Kwazulu-Natal, South Africa, Nadas (2019) explored the PCK of two Grade Six Mathematics teachers. The focus of the study was on the PCK categories that teachers drew on when teaching 2D and 3D shapes. Teachers with five or more years of experience were purposively selected to participate in the research. In this qualitative study, Ball et al.'s (2008) framework was used to analyse teachers' Mathematics Knowledge for Teaching (MKT). The results revealed that teachers implemented knowledge of content and curriculum (KCC), knowledge of content and teaching (KCT), and knowledge of content and students (KCS) in the teaching. Also, the teachers' KCS and KCC greatly influenced their pedagogical decision-making. Though the nature of instruments used in Nadas' study differs from this study, it would not have changed the results if Nadas' study had employed Shulman's (1986) model to measure teachers' PCK. However, the results would have changed if the study had included quantitative data.

These studies in Mathematics and Science from various researchers and different contexts support the idea that teaching experience is a more

practical knowledge than practice. At the same time, teacher education is more similar to the idea of theoretical knowledge that cognitive studies often evaluate. Much attention has been paid to evaluating teacher preparation and the chances it gives to prospective teachers to develop all components of PCK because there are differences between seasoned and new teachers regarding their ability to educate in the classroom.

It should be noted that studies have been conducted on pre-service students to prove that PCK leads to pupils' understanding. Mishiwo et al.'s (2017), Ozden's (2008), and Sri et al.'s (2021) research included students of a training programme in Mathematics and Science. In effect, pre-service teachers should have a good understanding of the objects they are showcasing. Therefore, teachers needed to be more adept at considering potential misconceptions the students might develop or alternative methods of evaluating students' knowledge (Bukova-Guzel, 2010). Although it is debatable whether or not the results from these studies can be applied to language teaching, research on language teaching provides evidence that PCK is valuable and should be considered as support for PCK in language studies and the current study.

In teaching English as a second/foreign language, studies on topic-specific PCK are rare. However, some studies outside Ghana have examined English teachers' PCK and how it influenced the teaching and learning process (Censur, 2018; Liu, 2013; Wu, 2021). Studies have been conducted to examine how integrating PCK constructs improves teaching quality and student achievement. In a study conducted in the United States, Liu (2013) discussed the PCK as a case study on the elementary school teacher. Using

Shulman's (1986, 1987) theory, Liu examined the knowledge ESL teacher educators have and how they develop the knowledge. Liu adapted the understanding of PCK as combining subject matter and pedagogy. Information on how teachers might plan and make their lessons exciting while catering to their pupils' needs and abilities was provided in the study.

PCK is considered the bridge between knowledge and pedagogy and can have a favourable impact on the standard of instruction and, in turn, on students' achievement. Some researchers, such as Liu (2013), believe that teachers with ESL content knowledge could teach because they already possess CK to qualify them as teachers. Hence, a teacher with PK would have more opportunities for various teaching strategies for effective and efficient learning processes. Liu, therefore, divided PCK into domain knowledge, learner pedagogical knowledge and instructional context knowledge. Only the participants' instructional expertise was the focus of the investigation. The results revealed that PK plays a more active role in teaching ESL, that policy and culture are primarily included in the training of ESL teachers, and that the early years have a more positive impact on the development of PCK.

Evens et al. (2018) compared learning environments to investigate whether only presenting PK and CK is sufficient for PCK development, whether only presenting PCK is sufficient for PK and CK development, and whether PCK development is impacted by integrating PCK, PK, and CK. As opposed to Liu's (2013) study, which was solely concerned with PK in order to arrive at its conclusions, Evens et al. discovered that although Liu concentrated on PK, CK is implicit in the observation and the documents examined and thus, merely presenting two knowledge domains to students is

insufficient. These results, therefore, confirm that PCK development in teacher education cannot be achieved just through PK and CK training.

However, concerning the structure of teacher education, there are two questions: whether PCK, PK, and CK should be included in the learning environment if the goal is to build these knowledge fields, and whether a unified appearance of PCK, PK, and CK leads to a more significant knowledge development than a divided delivery. Hence, their results would have differed if Liu (2013) and Evens et al. (2013) had extended their PCK constructs. Though these constructs were implicitly evident in their studies, studying them explicitly as part of the PCK constructs would have solidified the ground integration. Consequently, these are issues that the current study looks at, by adding more knowledge development to the pre-tertiary institutions for teachers to develop these knowledge domains with the teacher trainees. This basis is supported by the NTECF (2017) to extend PCK to include cross-cutting issues. Another difference between these studies and the current study is the instruments for data collection. The current study employs classroom observation, interviews, questionnaires, and tests to know more about how students are becoming conscious of these knowledge domains displayed by tutors in the selected CoEs in Ghana.

The relevance of integrating PCK domains requires an investigation in the language classroom to determine the PCK of English language tutors. In this area, studies have been conducted on experienced English language teachers by researchers such as Wu (2021) and Cesur (2018). Studies like these give insights into teachers' professional development and the role of principals in nurturing competent English language teachers. Also, since PCK

and its sub-constructs are believed to be discipline- and topic-specific, it is crucial for English language tutors to also make known components of PCK in the English language classroom especially in the context of study.

By listing PCK information investigated in the area of the English language, Wu (2021) contributed to the literature on this subject. Wu looked at the educational ideas of three kindergarten teachers in a classroom setting in Hong Kong. Wu conducted a recall interview with three kindergarten instructors to get their explanations for specific chunks of their lesson recordings which was analysed using Godbonto's (1999, 2008) and Mullocks's (2006) models. These teachers' instructional ideas were divided into 50 categories under eight areas. The most highly regarded pedagogical ideas were compared and analysed to identify trends, contrasts, and parallels. From the study's findings, the kindergarten English language teachers' PCK consisted of seven elements, similar to the seven categories of Shulman's (1986, 1987) teacher knowledge.

Also, Censur (2018) examined the PCK of aspiring language instructors in the Canakkale English Language Teaching Department at Sekiz Mart University. While Censur used a sequential explanatory mixed method, Wu (2021) used qualitative research. Through a questionnaire, Censur collected quantitative information from 127 potential teachers and then used descriptive and inferential statistics to analyse the information. Besides, Censur used observational techniques, interviews with three individuals and content analysis from document analysis to gather the qualitative data.

According to the study's findings, aspiring English language teachers do not think they have the necessary proficiency in the language. They

consider themselves knowledgeable in other fields. Even though they thought they would teach languages through conversational approaches, they provided new vocabulary words using the grammar-translation method. Therefore, considering their knowledge of lesson preparation, their understanding of their learners, and their knowledge of evaluation, what they believed they could do and what they did were also different.

Finding out the level of PCK of in-service English language teachers in a foreign language environment is the goal of Hijaz and Al-Natour's (2019) mixed-method study. The outcomes demonstrate the need for more subject matter expertise among Jordanian English language instructors. They were lacking in PCK. Husna (2021) investigated how EFL teachers perceive PCK and how they practise it in the teaching and learning process. In the qualitative study, observation and interviews were used to collect data from four experienced teachers, as well as documentation analysis. The results revealed that teachers made an excellent effort to transfer the subject by their PCK. However, they could have done it better because it is impacted by several contextual factors such as the facilitators they have in the school, different teaching experiences, different language backgrounds of the students, and different ways of the teacher's perception of PCK. Most teachers combined the lecturing and discussion methods while others focused on the lecturing method only.

Though these studies are similar to the current study in terms of their purpose, the number of participants differs. Wu (2021) and Censur (2018), in their qualitative data collection, made use of three participants while Hijaz and Al-Natour (2019), in a mixed method study, made use of nine participants.

The current study employs six participants. Only Censur collected quantitative data but did so with 127 participants, as the current study collected data from 155 participants. Censur's study, though mixed method, used a sequential explanatory research design, while the current study is sequential exploratory.

These studies also employed different theories to arrive at their findings than the current study. This study aligns results with Shulman's (1986, 1987) models of PCK. Some studies have provided literature on how PCK influences students' outcomes in the language classroom, which have evidence of theory, not in practice, as found in Censur's (2018) study.

PCK categories have been investigated in Africa to develop a thorough understanding of instructors' practices. It is noted that the longitudinal aspect of this research, which considers changes in teachers' practices, is one method to value research on teachers' practices. PCK components integration is another approach. PCK is not opposed to theoretical knowledge; it is a fusion of teachers' knowledge and an ongoing self-reflection that directs their classroom practices and instruction. However, the discrepancies in findings about teaching experience can be attributed to the type of knowledge being studied.

In South Africa, Toerien (2013) conducted studies to have in-depth understanding of a teacher's practice. She focused on the practice of an experienced female Science teacher for three years while the teacher taught the Organic Chemistry section of the Grade 12 Physical Science Syllabus. The qualitative study collected data on the teacher's practice through classroom observation and interviews. The study's findings revealed that the teacher had well-developed pedagogical knowledge manifested in a functional classroom



where teaching occurred every day. However, the findings also revealed that the teacher needs to fill in her knowledge of PCK, especially in the areas of students' understanding of Science and their in-depth understanding of the subject's content. As a result, an improvement in PCK is needed, especially in the area of subject matter knowledge. According to Rutt and Mumber (2019) and Shulman (1986, 1987), quality teaching practice should improve students' learning outcomes. Though the findings of this study revealed teachers' lack of subject matter knowledge, it would have yielded objective responses if the study had included quantitative data on students' understanding or their assessment of the practical aspects of teacher's PCK.

Troyan et al.'s (2017) study is similar to the study conducted by Toerien. Through the prism of Shulman's (1987) conceptions of PCK, Troyan et al. examined the knowledge that was incorporated into a foreign language teacher's implementation of Content-Based Instruction (CBI). The integration-PCK (I-PCK) model developed by Shulman is an adaption of PCK that specifically addresses the increased content knowledge required for instructors to implement content-based instruction (CBI) successfully. This case study was conducted to illustrate that the I-PCK model in action describes participant knowledge and experiences, emphasising the teacher's accomplishments in fusing academic content and world language learning, and allowing for the identification of particular areas that required more work. The findings from these studies show how essential I-PCK is in instruction.

Therefore, in the language classroom, the teacher should blend subject matter expertise with appropriate teaching strategies to enhance students' learning outcomes. The teacher's role involves understanding how to

effectively teach specific content to a particular group of students using appropriate instructional strategies, methods, and materials. Also, in using the CBI approach with I-PCK model, the English language teacher should integrate content from other disciplines into the language learning activities. Hence, combining CBI approach with I-PCK in a study will provide much evidence on English language teachers' dynamic teaching styles, an area explored by the current study with the support of the contextual theory in PCK for teaching grammar.

In Ghana, PCK of teachers and student-teachers have been studied in various disciplines such as Mathematics (Mishiwo et al., 2017), Science (Owusu - Fordjour et al., 2022; Wilmot, 2020), History (Boadu et al., 2020), and English language (Bukari, 2021; Lomotey, 2021). These studies have been conducted in both in-service and pre-service contexts. In in-service, PCK has been conducted at various levels of education, such as pre-school (Bukari, 2021; Mahamud, 2021), primary school (Owusu-Fordjour et al., 2022), senior high school (Boadu et al., 2020), and pre-service institutions (Apau, 2016; Mishiwo et al., 2017).

In Science, PCK study has been conducted to find out whether there was a link between Ghanaian Science instructors' PCK and classroom practice using 80 senior high school and junior high school teachers. One of such studies was conducted by Owusu-Fordjour et al. (2022). The findings from the descriptive questionnaire survey study revealed that subject matter understanding varies depending on teachers' level of education. Also, experienced teachers demonstrated more significant pedagogical expertise and were able to improve academic achievement than inexperienced teachers. This

supports findings from other studies such as Park and Oliver's (2008) that experienced teachers demonstrate more excellent PCK. Hence, the formal education of teachers is a strong predictor of their knowledge and ability in the classroom, likewise their number of years in the service. On the contrary, other studies, such as Censur (2018) and Hijaz and Al-Natour (2019), found that though in-service teachers have experience, they lack some PCK.

Contrary to the findings of Owusu-Fordjour et al. (2022) on PCK in Ghana are the findings of Apau's (2020) study in assessing the TPCK preparedness of student-teachers in the Department of Arts and Social Science Education, University of Cape Coast, Ghana. It was found that student-teachers have technological knowledge but lack technological PCK. Even though the two studies explored different samples of in-service and pre-service teachers, their conclusions are compatible in the sense that PCK is demonstrated by experienced teachers. However, though a questionnaire is one of the ways of collecting data on teachers' PCK, the current study differs in this sense of identifying teachers' PCK by going further to observe and interview tutors in actual classroom practice and to find out more about their practices from students through the questionnaire and test.

Also, some constructs of PCK have been researched under English language in Ghana (Anani, 2017; Bukari, 2021; Lomotey, 2021; Mahamud, 2021; Mubarik, 2021). Anani (2017), Mahamud (2021), Bukari (2021), and Lomotey (2021) investigated some categories of PCK of educators in teaching language at different levels of education. Anani investigated whether grammar instruction using an inductive method would benefit students more than deductive instruction. Mahamud explored the impact of early grade (KG1–

Class 3) learners' academic achievement on the PCK of early childhood educators in language and literacy teaching. In the Bawku Municipality, Bukari examined the strategies and difficulties of teaching English as a second language. Lomotey studied senior high school English language teachers' perspectives and ideas on critical pedagogy and its use in the classroom.

These research studies employed mixed methods, and their conclusions are relatively crucial for PCK development of language teachers at all levels. From Anani's (2017) study, students taught using an inductive approach demonstrated more excellent skills than those taught using a deductive approach. Mahamud's (2021) study found that early childhood educators had low PCK, which impacts on how well they can teach language and literacy. Bukari's (2021) study discovered that teachers primarily used the grammar-translation method rather than the communicative approach since they needed to gain knowledge of the various English language teaching approaches. Lomotey's (2021) study found that teachers saw critical pedagogy as a workable alternative to the conventional teaching methodology. Therefore, in order for pupils to feel valued as members of the society who can pursue education in freedom, the English language teacher must model democracy in the classroom.

Though these studies made use of large sample sizes (Anani used 21 teachers and 72 pupils; Bukari, 200 teachers; Lomotey 220 teachers; and Mahamud 164 educators) than the current study (152 teacher trainees), these studies explored various components of PCK but did not combine components of PCK and how these components influence one another. However, the current study is compatible with the integration of PCK constructs and the

incorporation of cross-cutting issues into the PCK in teaching grammar. This is seen as a holistic way of learning since it connects topics, subjects, and the world to the learning of grammar to help students solve real life problems.

The grammar studies conducted by Anani (2017) and Mubarik (2021) are more comparable to the current study. In the junior high school in the Walewale Municipality, Mubarik investigated instructors' and students' opinions, beliefs, attitudes, and motivations about teaching and learning of English language grammar. The only distinction is that, unlike the present study, Mubarik incorporated focused group discussions in addition to the questionnaire, interview, and observation. The findings indicated that most teachers heavily rely on Traditional Grammar teaching methods. Though the Traditional Grammar approach is used by some teachers, the choice of approach should be based on the students' needs and the goal of teaching grammar. The curriculum for the CoEs supports the Communication Approach irrespective of the type of grammar (generative or functional) taught. This requires the teacher to teach grammar in context, using authentic materials such as texts, audio, and videos. Therefore, the current study, supported by the Communicative theory and the Contextual theory, explores the teaching and learning of grammar through authentic language to promote effective communication.

This literature review is relevant to the current study as it helps to identify familiarities with relevant literature and the rationale behind this study. It also helps to understand and interpret the data collected. It highlights the importance of PCK in teachers' instructional abilities and how each construct and their sub-constructs should interact during instructions. The

review also showed areas of PCK explored by researchers and how the PCK constructs can be expanded to include other constituents. In addition, the review indicated how relevant teacher's experience plays an important role to promote quality teaching practice to improve learning outcomes. Furthermore, irrespective of the discipline, any of the PCK models can be employed based on the purpose of the study.

Hence, filling the context gap, this study is conducted in the selected CoEs in the EGA zone, Ghana. Also, the PCK for teaching grammar is supported with the contextual theory and expanded to include cross-cutting issues to promote holistic learning where grammar teaching connects with topics, subjects, and the world to help learners solve real-world problems. In addition, it fills the content gap by exploring PCK in teaching specific topics in grammar rather than subject specific pedagogy. The analytical gap is filled with the use of correlation analysis to find out the relationship between the tutors' PCK and students' understanding of grammatical concepts. Finally, it fills the methodological gap by conducting exploratory sequential mixed methods study to investigate the phenomenon.

Therefore, this study investigates English language tutors' PCK in teaching grammar at the selected CoEs in the EGA zone of Ghana and how it influences students' understanding of grammatical concepts. The next section presents a synthesis of interrelated components and variables which will help interpret and understand the topic-specific English language grammar PCK.

### **Structure of PCK: The Conceptualisation of PCK Constructs**

With the PCK model, the Contextual theory and the Experiential theory as the theoretical lens, this section examines the topic-specific English

language grammar PCK structure used for this study's measurement. Hence, before generalising the empirical evidence and contrasting results from other studies, it is necessary to take a deeper look at conceptualising the constructs and the sub-constructs. The formulation of PCK constructs incorporates knowledge of critical elements of successful grammar instruction in the selected Ghanaian CoEs. Therefore, it is essential to define the plausibility of the PCK constructs and sub-constructs for this investigation.

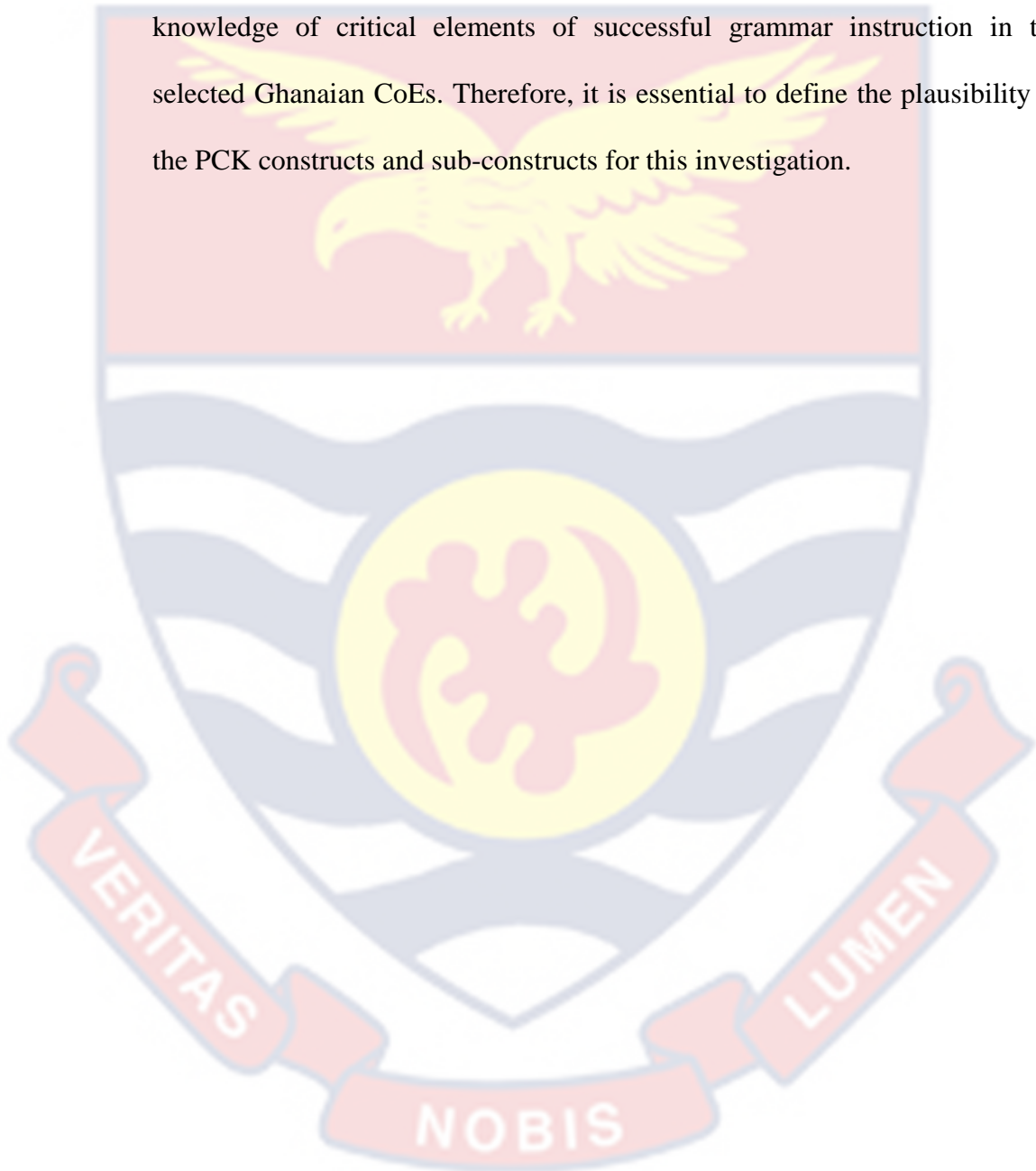






Figure 3 is a conceptual framework that shows how the components of PCK are balanced and integrated and how this affects the standard of instruction. It implies that to teach effectively, it is necessary to consider every PCK-related factor at once. The categories as PCK components, according to researchers such as Park and Oliver (2008), are interconnected to ensure that teachers can effectively transfer knowledge to students. Speaking from the standpoint of preparatory programmes for teachers, the role of English language tutors is to aid prospective teachers in developing the knowledge integrated with a considerable number of components, such as knowledge of English language (subject matter knowledge) and teaching English language (pedagogical knowledge).

However, the reformed curriculum supported by NTECF (2017) and NTS (2017) believes in the fullness of PCK knowledge if it is integrated with cross-cutting issues to influence learners' learning styles and to promote holistic learning. In other words, subject matter or pedagogical knowledge alone is only sufficient to qualify as teacher knowledge for teaching grammar if it is accompanied by cross-cutting concerns that address the requirements of the students. In order to effectively teach grammar to prospective English teachers at the CoEs in Ghana, it is crucial to investigate the interactive relationship among the various structures and sub-constructs of teacher knowledge, which are moulded into PCK.

From Figure 3, the first variable is PCK, that is, the integration of pedagogical knowledge and content knowledge to make knowledge understandable and teachable to students. To do so, teachers synergistically transform these PCK constructs and their sub-constructs (Abell, 2008). The

second variable, cross-cutting issues, an essential topic in the NTECF and the NTS, allows teachers to integrate different aspects of society into the curriculum and impact on teacher quality. If the first and second variables are observed, the third variable, differences in learning, will be enforced to promote the understanding and application of grammar knowledge. The sections below discuss the various constructs and their sub-constructs in the framework.

### **Pedagogical Knowledge Construct**

The graphic makes it evident why Shulman (1986) might have noticed a connection between content teaching and pedagogy in teacher education programmes because many more variables influence pedagogy. From Figure 3, pedagogical knowledge can be divided into three sub-constructs, and this thesis looks at the following sub-constructs for generalising empirical evidence.

#### ***Knowledge of Curriculum***

The fundamental aspect of any educational system is the curriculum. Hence, teachers and students are connected in school education via curriculum knowledge, which is the core pedagogical component of PCK (Magnusson et al., 1999; Shulman, 1986). According to Stotsky (2012), a curriculum is a strategy for reaching specific goals and objectives. The curriculum consists of activities designed to help students meet specific academic objectives. Also, the curriculum establishes the setting for a variety of educational activities. Hasan (2008) posits that the curriculum consists of educational ideas, a written plan where the ideas are documented, and the experience the students have, as teachers realise the document into reality. This idea implies that curriculum

knowledge is about the content, skills, concepts, and understanding defined and prescribed in the curriculum. Therefore, teachers' awareness of various instructional materials, teaching procedures, and learning objectives is crucial in education.

Understanding the English language curriculum means being aware of the overall objective of English language education as well as the curricular resources for particular courses and topics. The connection between the goals of teaching English language instruction and actual teaching is made possible by the curricula. English language teachers should approach the English language curriculum as a whole and make an effort to connect a particular course or topic to the full curriculum (Nan, 2005). The purpose of the English language course at the Ghanaian CoEs is to maintain a constant focus on developing the knowledge, skills, pedagogy, and fundamental understanding needed for a good English language teacher to teach English language and Literature-in-English from early childhood to junior high school in Ghana. The courses are designed to give prospective teachers a grasp of current theories, concepts, and methods in English language studies and teaching that will improve literacy.

At the CoEs, the English language grammar curriculum contains courses in generative and functional grammar to offer a comprehensive understanding of language. Generative grammar emphasises the rules governing the construction of words and sentences and how to use them effectively in meaningful communication (Celce-Murcia, 2001; Ellis, 2003; Hausa et al., 2002; Lightbown & Spada, 2013). Functional grammar, also known as systemic functional grammar, emphasises how language functions in

communication, focusing on the relationship between the form and the meaning (Halliday, 2014). By learning generative and functional grammar, students gain insight into language forms and functions in order to produce language effectively in various contexts. Also, students acquire grammar knowledge naturally through exposure to authentic language use, rather than through explicit instruction, as supported by the communicative approach (Celce-Murcia, 2001; Richards & Rodgers, 2014).

As a result, the English curriculum at the CoEs provides contents on “grammatical units/ ranks”, “grammatical classes, their functions and meanings”, “English language grammatical rank scale”, and “concord”, right from level 100 to level 300. In addition, English language major students are taught “theories of second language acquisition”, “curriculum studies”, and “methods of teaching grammar: approaches and various aspects of lesson plan preparation for grammar”. These courses guide students to develop conceptual knowledge and analytical skills for an in-depth description of basic notions such as rank scale, rank shift/embedding, grammatical unit, grammatical class, function, and concord.

### ***Knowledge of Learners***

Knowledge of learners is rated high among teachers’ capabilities (Cohen et al., 2003; Shulman, 1987). Shulman (1986) refers to the “knowledge of learners” category among the seven categories of knowledge as “the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning of the most frequently taught topics and lessons” (p. 9). They include knowledge of learners’ misunderstandings and teachers’ understanding of students’ simple and

complex issues (Shulman, 1986). In the past, learners were only passive recipients of information. Teachers predominated the educational process and only provided students with knowledge and instructional materials (Sujati, 2006).

The transition from a standard-based curriculum to a performance-based curriculum, also known as competency-based education (CBE), focuses on hands-on learning experiences, real-world application of concepts, and the development of practical skills that are relevant to the desired outcome (Gulikers et al., 2004; Pellegrino et al., 2001). Students are actively involved in problem-solving, critical thinking, and decision-making activities that stimulate real-life situations.

Consequently, students may be in the “zone of proximal development” during the learning process, where they may be on the cusp of understanding. However, they may also experience misconceptions, confusion, cognitive conflicts, or dismay (Vygotsky, 1978). In such situations, the teacher’s help is necessary for promoting learning. Teachers should be knowledgeable and intervene by posing guided or probing questions to scaffold students’ thinking and learning. The support teachers offer can be referred to as “discourse” (Brophy, 2000), “discussion” (Grouws & Cebulla, 2000), “(students’) reflective thinking” (Trafton et al., 2001), or “probing/guiding questions”. All of these behaviours communicate a crucial principle regarding using techniques to encourage students’ sense-making through contemplation, more profound comprehension of the concepts, and connection development (Brophy, 2000).

Hence, the language teacher is required to possess knowledge of learners' needs. This knowledge involves understanding learners and their characteristics, such as their needs, learning styles, motivations, and socio-cultural backgrounds (Shulman, 1987). There are many ways teachers can understand their learners. Among them are trying to identify their difficulties in learning materials, assisting them in solving problems, and utilising varying teaching styles per the learners' existing abilities. Another helpful idea is providing materials that attract learners' interests, which further optimises their attention, comprehension, and perseverance to learn (Kidwell & Triyoko, 2012).

At the CoEs, English language major students perceive grammar as a problematic aspect of the course. Hence, it is the teacher's responsibility to help students understand and use grammatical concepts to ensure timely compliance to meet the expectations of an expert. Tutors must understand their students and facilitate their potential through effective and meaningful instructional processes. Tutors should help teacher trainees to relate their existing knowledge to the new experiences they are going through. Here, the teacher plays the role of a manager to manage instructional processes so that students independently, have more chances to develop competency in the language.

### ***Content Specific Pedagogy***

Content-specific pedagogy is frequently mentioned in the PCK models. Following Shulman's (1986) original insights, a broad approach to instruction will not result in productive learning. Also, employing global principles may fail to capture the essential features of subject teaching (Leach & Moon,

2000). Instead, “methods and activities within the context of subject matter” tied to “specific purposes and goals of instruction” are required (Brophy, 2001, p.1). Magnusson et al. (1999) further categorised knowledge of instructional strategies at two levels: subject-specific and topic-specific strategies (including representations and activities). Subject-specific strategies are broadly defined as approaches applicable in teaching one subject (e.g., English language) instead of others (e.g., History, Mathematics). Topic-specific strategies are pedagogies more narrowly applied to particular topics within the subject area. Therefore, content-specific pedagogy refers to knowledge about representations and activities to facilitate students’ learning of specific topics.

### **Approaches and Strategies of Teaching Grammar**

There are many approaches and methods of teaching. These approaches include direct instruction (Rosenshine, 2012), cooperative learning (Johnson & Johnson, 1999), flipped classroom (Bergmann & Sams, 2012), verbal exposition (Biggs & Tang, 2007; Nilson, 2010), demonstration method (Gagne et al., 2004), case study (Herreid, 1997; Yin, 2018), project-based learning (Thomas, 2000), lecture-based instruction (Bligh, 2000), and problem-based learning (Savery & Duffy, 1995).

However, several methods have been proposed by linguists and educators. These approaches have moved the study of language from isolating skills to integrating language skills. Therefore, the implementation of contextualised grammar instructions is through the use of authentic texts. Larsen-Freeman (2000) states that “when grammar is presented and practised in context, it is more memorable, more readily used, and more likely to

transfer to other contexts” (p.115). Therefore, teaching grammar in context is crucial to language learning.

One such approach is the inductive approach. This approach involves providing learners with grammar examples in context and asking them to notice patterns and rules themselves. This approach is practical for teaching grammar, mainly when used alongside other approaches (Ellis, 1993). According to Nassaji and Fotos (2011), this approach can lead to better long-term retention of grammar rules since learners discover the grammar rules through examples and guided practices. This approach is more suitable for younger learners developing their language skills (Thornbury, 2005).

On the other hand, the deductive approach involves providing learners with explicit grammar rules and then asking them to apply those rules to complete exercises or tasks such as drills to practice applying them. This approach has been widely used in grammar teaching, and research suggests that it can effectively teach grammar (Ellis, 1993; Larsen-Freeman, 2000). According to Ellis (2002), the approach is often used with adult learners who have a good understanding of their native language. Nevertheless, it is useful when introducing new grammar concepts.

Communicative language teaching focuses on using grammar in the context of meaningful communication (Harmer, 2007; Richards & Rodgers, 2001). Students learn grammar by using it in real-life situations (Nunan, 2003). This approach emphasises the use of grammar in communicative contexts, focusing on the meaning and use of language rather than just the form. Research suggests this approach can be practical for teaching grammar, particularly when combined with other approaches (Doughty & Williams,



1998; Larsen-Freeman, 2000). This approach emphasises using grammar in context and real-life situations. The goal is for students to be able to use grammar in their communication.

A study by Ellis and Shintani (2014) found that the communicative approach can be practical in teaching grammar in a second language. Larsen-Freeman and Anderson (2011) note that the communicative language approach is for developing learners' fluency and communicative competence. Thus, it focuses on learners' communicative competence through authentic and meaningful language tasks. Grammar is taught in context, with learners discovering and experimenting with grammatical structures as they communicate.

Another approach to contextualise grammar instruction is Task-Based Language Teaching (TBLT). This approach emphasises using authentic tasks to promote language learning and acquisition. According to Willis and Willis (2007), the critical feature of TBLT is the provision of opportunities for learners to use language in meaningful, communicative tasks. This approach is also helpful in helping students understand the relevance of grammar in real-life situations. Hence, students should be provided with a task that requires grammar.

The integrated approach, another approach to contextualise grammar instruction, involves combining the inductive and deductive methods to balance explicit instruction with meaningful language use (Larsen-Freeman, 2018). This approach acknowledges that both explicit and implicit knowledge of grammar is essential for language learning and seeks to balance the two (Lightbown & Spada, 2013). In essence, the choice of grammar teaching

method will depend on learners' needs, goals and preferences, and the teaching contexts. Integrating approaches at the preparatory programmes is essential to the needs of the students since the tutors need to select approaches which are suitable to the needs of the students, to learn grammar and teach grammar in future. Therefore, tutors must align their teaching to the goal of teaching grammar at second language contexts, the needs of the learner, and how the individual students prefer to learn. These factors are crucial to the selection of appropriate methods for teaching grammar.

### **Contextual Knowledge**

Contextual knowledge, an essential knowledge basis for PCK, involves one or more types of knowledge regarding the curriculum, the school, and the community (Gardner & Gess-Newsome, 2011; Grossman, 1990; Magnusson et al., 1999). No matter which knowledge is included or excluded, it has been stressed how crucial it is to comprehend the curriculum and the educational framework for effective instruction. Another form of contextual awareness is curriculum knowledge, which refers to information about the subjects that should be covered in class for a specific demography of learners. Therefore, instructors must be knowledgeable of learning goals and objectives and articulate pertinent topics within a particular subject (Grossman, 1990; Magnusson et al., 1999). They should also know what students have learned in previous levels and what they are expected to learn in higher grades (Grossman, 1990; Magnusson et al., 1999). Then, the organisational structure of the subjects being taught is crucial for effective education. Although knowledge about learners' growth, abilities, and students' processes is not always included as part of curricular comprehension, teachers' evaluation of

learners' needs and scaffolding decisions are influenced by their awareness of how topics are organised and the potential utility of curriculum resources.

It is also acknowledged that familiarity with the school and the local area is essential to educational contextual knowledge. According to Vygotsky (1978) and Rogoff (1990), teaching and learning occur in specific historical, social, and cultural contexts. The environment in which knowledge is taught significantly depends on the school district. A group of students may acquire certain subjects more quickly if they know the context in which learning occurs (Ball et al., 1988; Ma, 1999). This idea aligns with Bronfenbrenner's (1984) contention that development needs to be considered within the context of the ecological system. This is the embedded educational resource that is required for effective and efficient teaching, which should include the knowledge of educational context, knowledge of educational ends, purpose and values, and philosophical and historical grounds.

### **Knowledge of Assessment and Evaluation**

Assessment and evaluation are critical components of pedagogical knowledge that teachers must possess to promote students' learning and achievement. Anderson and Krathwohi (2001) explain assessment as the process of gathering and interpreting evidence for use in making judgments about the level of student achievement and the effectiveness of the instructional programme. On the other hand, evaluation is the process of making judgments about the quality of student performance or the effectiveness of instructional programmes. Therefore, while assessment involves the process of gathering information about students' learning, evaluation involves analysing and interpreting this information to make

informed decisions about teaching and learning (Brookhart, 2013; Popham, 2011; William, 2011).

In the language classroom, the English language teacher must clearly understand assessment and evaluation concepts and their application in the classroom to ensure that their teaching methods align with the learning goals. Hence, the language teachers should use multiple assessment forms, such as observation, essays, quizzes, and self-reflection to comprehensively understand their students' learning progress.

### **Subject Matter Knowledge (Content Knowledge)**

Knowledge of the subject matter is known as content knowledge. Without question, a teacher needs to be versed in the subject matter. Shulman (1987) defined subject matter knowledge as thorough comprehension of and expertise in a particular field or area of study. Teachers with higher levels of subject matter knowledge are better equipped to explain complicated concepts to their learners, engage them in fruitful debates, and support the development of higher-order thinking skills (Graham & Perin, 2007; Hammond, 2017; Hattie, 2009).

The English language teachers need to have enough grammatical knowledge to be able to teach grammar effectively. This knowledge encompasses a range of concepts, theories, principles, and practices unique to English language grammar. The subject matter knowledge is an essential predictor of teaching effectiveness in grammar to promote students' communication skills. Basically, subject matter knowledge in grammar is crucial to the individual in various professional fields, including writing, editing, and communication.

## Content Specific Pedagogy

In addition to subject matter knowledge, teachers must also have pedagogical knowledge to design and implement effective instructional strategies for specific topics or subjects. All these, put together, contribute to what Shulman (1986) calls “pedagogical content knowledge”, which teachers use to decide how best to teach specific topics or subjects. In teaching grammar, content-specific pedagogy involves knowledge of the rules and structure and the ability to convey that knowledge to students clearly and engagingly, create compelling and engaging lessons, provide meaningful feedback, and diagnose and address common errors and misconceptions (Borg, 2003). The following are some critical elements of PCK in teaching grammar:

1. Understanding the needs of learners: Teachers need to understand the developmental and linguistic needs of their learners so they can adapt their teaching strategies and materials accordingly. They must know learners’ prior knowledge, learning styles, and language proficiency.
2. Designing practical lessons: Teachers must design lessons that engage students and provide opportunities for them to practise and apply what they learned. This may involve various teaching techniques and resources, such as examples, exercises, games, and multimedia.
3. Addressing common learner errors: Teachers need to be aware of common errors that learners make in grammar and be able to provide feedback and corrective instruction in a constructive and supportive manner (Lightbown & Spada, 2013).

4. Integrating grammar into the curriculum: Teachers must integrate grammar instruction to make it relevant and meaningful to students. This may involve integrating communicative activities such as role-play or discussions to allow students to use grammar in meaningful and relevant ways (Celce-Murcia & Larsen-Freeman, 1999). Lessons may involve connecting grammar to speaking, listening, reading, and writing.
5. Using assessment to inform instruction: Teachers must evaluate students' learning and adjust their teaching strategies accordingly. This can ensure that students' progress and achieve the intended learning outcomes. Hence, using authentic materials such as newspapers, songs, etc., will provide opportunities for learners to encounter and practise grammar in context (Tomlinson, 2003).

### **Technological Pedagogical Content Knowledge (TPACK)**

Technological pedagogical content knowledge, according to Mishra and Koehler (2006), is a dynamic interplay of technology, pedagogy, and content knowledge. Teachers must continually update and adapt their TPACK to use technology effectively to support students' learning as technology advances. Teachers need to know each domain separately and must also understand how they interact and influence each other. For example, teachers must know how to use technology to enhance their pedagogy and support content delivery. Research has shown that teachers who possess strong TPACK are better able to effectively integrate technology into their teaching practices and improve students' learning outcomes (Angeli & Valanides, 2009; Koehler & Mishra, 2009). In the context of teaching grammar, TPACK involves using

technology to facilitate the teaching and learning of grammar concepts and rules while considering pedagogical strategies and content knowledge.

There are various ways to incorporate technology in teaching grammar concepts visually engagingly, as well as facilitate students' participation and collaboration (Beauchamp & Kennewell, 2010). For example, teachers can use IWBs to display sentence diagrams or word clouds and have students manipulate the elements to identify parts of speech or analyse sentence structures. Another technology-based approach to teaching grammar is using online games and activities. According to Reinhardt and Sykes (2012), these resources (online games and activities) can provide students with an interactive and engaging way to practice grammar skills, such as identifying verb tenses or correcting sentence errors. Additionally, online resources can allow students to work independently and receive immediate feedback, promoting self-directed learning (Hattie & Timperley, 2007). Teachers can also engage students in meaningful and interactive grammar instruction while still maintaining effective pedagogical strategies and content knowledge.

However, Graham and Perin (2007) state that it is essential for teachers to note that technology should not replace effective pedagogy or content knowledge in teaching grammar. Teachers must, as a matter of need, have a strong understanding of grammar concepts and be able to effectively convey them to their students (Graham & Perin, 2007). Again, the use of technology should be purposeful and aligned with instructional goals rather than simply using technology for technology's sake (Koehler & Mishra, 2009).

The PCK constructs are under the professional practice domain of the National Teachers' Standard. However, it is enshrined in the NTECF that, to

meet learners' diverse needs and promote quality and social justice in education, PCK should include cross-cutting issues. As a result, cross-cutting issues should be introduced through PCK. Integrating pedagogical knowledge, content knowledge, and cross-cutting issues should cater to learning differences and enforce holistic learning during grammar lessons.

### **Cross-cutting Issues**

Cross-cutting issues are topics deemed crucial, impact most or all aspects of development and cut across these aspects. They are concepts or themes in education that span several fields of study or subject matter and are essential to achieving educational objectives (UNESCO, 2017, 2019; United Nations, 2016).

In the language classroom, cross-cutting integrates various subjects and topics in language instruction. Thus, it involves integrating multiple topics or themes in a single lesson and unit. This approach has been found to have several benefits for language learners (Brown, 2007; Byram, 1997; Celce-Murcia, 2001; Levy, 2009). By integrating a range of subjects and topics, students are exposed to different types of problems, which can help them to develop their critical thinking skills.

However, some subjects ought to be incorporated and mainstreamed at all phases of development, from creating policies to putting them into practice, evaluating them and learning from them. The NTECF (2017) postulates that teachers require to use new teaching strategies that address cross-cutting issues in their teaching to enhance learning (NTS, 2017; NTECF, 2017). The NTECF (2017) was nationally endorsed as the solution by experts in the teacher education community and through national consultation with all stakeholders.



This was driven by the NTS, which caved a revision of all Teacher Curricular to harmonise ITE (Initial Teacher Education) Curricular. Therefore, cross-cutting issues should cut across all the four pillars: subject and curriculum knowledge, pedagogical knowledge, literacy studies, and supported teaching in schools, which are necessary for teachers to ensure learning for all (NTECF, 2017).

These cross-cutting issues are complex and interconnected concerns that transcend specific sectors or disciplines and impact multiple areas of development. They include equity and inclusivity, professional attitudes and values, core and transferable skills, gender inclusivity, assessment strategies, action research, reflection and Information Communication Technology (ICT). These issues are important because they affect educational outcomes and the overall success of education systems. A discussion of the various cross-cutting issues and how they influence the teaching of English language grammar in the CoEs in Ghana is done in the next section.

### ***Equity and Inclusivity***

Equity and inclusivity are crucial to ensure that all students have the same opportunities and resources. According to Darling-Hammond (2017), equity refers to providing equal opportunities and treatment to all individuals, while inclusivity ensures that everyone is included and feels valued regardless of their backgrounds. While equity looks at the fair treatment, access, and opportunity for all learners, regardless of their background or circumstances, inclusivity involves creating an environment that values and respects diversity and promotes the participation and encouragement of all individuals (Kimmel & Aronson, 2021; Lee & Park, 2021).

Hence, regardless of students' race, gender, ethnicity, or socio-economic status, all professional teachers must demonstrate equity and inclusivity. At the CoEs, English language tutors are to demonstrate commitment to equity and inclusivity by promoting diversity, equity, and inclusion. One of the roles of tutors is to demonstrate equity and inclusivity through efforts such as increasing representation, fostering a culture of belonging, and addressing issues of bias and discrimination. The second role is to help teacher trainees to learn, acquire, and use these in service.

### *Professional Attitudes and Values*

Professional attitudes and values are essential in education as they shape how educators approach their work, interact with their colleagues and students, and ultimately impact on students' outcomes (NTECF, 2017; NTS, 2017). Professional attitudes and values play a crucial role in education. In other words, professional attitudes and values are the beliefs and behaviours teachers and educators exhibit in their interactions with students, colleagues, and other stakeholders.

One of the most essential values in education is a commitment to equity and social justice. This value emphasises the importance of providing all students with an equal opportunity to succeed and promoting fairness and inclusivity in the classroom (Thomas & May 2010). Another critical value is professionalism, which encompasses reliability, responsibility, and commitment to continuous learning (Slavin, 2015). In addition, a positive attitude towards teaching and a genuine care for students are also essential professional attitudes in education (Noddings, 2005).

The National Teachers' Standards in Ghana were created as a professional tool to help teacher educators, teachers, student teachers, and other stakeholders in education identify what teachers are expected to know and be able to do, qualities they are expected to possess and some conduct they are expected to demonstrate. Concerning professional knowledge, practice, behaviour, attitude, rights, and obligations, the Standards establish a clear baseline of expectations. Additionally, they are intended to enhance "the quality of teachers' delivery and students' performance" (NTS, 2017, p.3). Each of the three domains of the Standards, Professional Values and Attitudes (professional development and community of practice), Professional Knowledge (knowledge of educational frameworks and curriculum, and knowledge of learners), and Professional Practice (managing the learning environment, teaching and learning, and assessment), is further subdivided into several sub-domains. These categories and facets cover what instructors should value, know, and accomplish.

All in all, professional attitudes and values are essential to creating a positive and effective learning environment. Teachers who embody these attitudes and values benefit their students and contribute to the larger educational community. Through lifetime learning and continual professional growth, professional teachers are also required to advance their personal and professional development. Again, as part of their professional growth, teachers are required to show that they are developing their leadership skills and that of their students in the classroom and across the entire school.

### *Gender*

Gender is a critical cross-cutting issue in education, affecting access and quality. According to UNESCO (2021), gender disparities in education persist in many parts of the world, and girls and women face particular barriers to education, including discrimination, violence, poverty, and early marriage and pregnancy. In Ghana, education is for all and every child's right according to the constitution. Hence, education has been structured to impact on learning outcomes and shape future opportunities for both boys and girls. Formerly, girls tend to have lower levels of education than boys. This could be due to various factors such as social and cultural norms, lack of role models and stereotypes about gender (Ala-Mutka et al., 2008).

Closing such barriers between boys and girls in education, gender is referred to as the recognition and understanding of how gender roles, expectations, and identities intersect with all aspects of the educational system, including policies, curriculum teaching practices, and school culture (NTS, 2017; NTECF, 2017). This includes acknowledging how gender influences students' experiences, academic performances, and opportunities for success. Therefore, gender-sensitive methodologies, for example, might include strategies to promote gender equality in the classroom, such as providing equal opportunities for participation and learning, challenging gender stereotypes and biases, and creating a safe and supporting learning environment for all students. Removing gender-based violence to encourage healthy learning experiences could also be a way of promoting gender sensitivity (World Bank, 2020).

### *Core and Transferable Skills*

Core and transferable skills are critical for success in any workplace. According to the European Commission (2020), core skills refer to individuals' fundamental skills to succeed in any workplace. They include communication, problem-solving, teamwork, and digital literacy. At the same time, transferable skills are skills that individuals can apply across different roles and industries, such as leadership, adaptability, and critical thinking.

Therefore, teachers must communicate clearly and effectively with their students verbally and in writing. They must listen actively and respond appropriately to students' questions and concerns (Brown, 2007; Glanz, 2018; Lui, 2021). Also, they must be able to plan and organise lessons effectively, including setting clear learning objectives and designing activities that help students achieve those objectives (Brown, 2007). In planning and organising a language lesson, it is essential to consider the goals and needs of the learners, as well as their interests and backgrounds.

According to Nunan (1991), a good lesson plan should include the following elements: objectives, warm-up, presentation, practice, feedback, and extension. The first component, objectives, should clearly state what the students are expected to achieve at the end of the lesson. According to Harmer (2001), these objectives should be specific, measurable, and achievable within the time frame of the lesson. The second component, warm-up, sets the tone for learning. To Scrivener (2011), the warm-up activity should be related to the lesson topic and activate the students' prior knowledge. The third component, presentation, is the stage for introducing the new language or grammar point to the students. This can be done through various methods,

such as using realia, pictures, or videos (Ur, 2016). The fourth component, practice, is the stage for students to use new language in a controlled or semi-controlled activity. This can be done through drills, gap-filling exercises, or role-plays (Lightbown & Spada, 2013).

The fifth component, feedback, is essential for students to understand their strengths and weaknesses to improve their learning. Teachers should provide feedback on accuracy and fluency (Ellis & Shintani, 2014). The final component, extension, is where the teacher provides opportunities for the students to use the new language or grammar point more communicatively and creatively. This can be done through tasks or projects (Bygate et al., 2001). In effect, if teachers follow a well-designed lesson plan, they can create a compelling and engaging learning environment for their students. Also, a conducive classroom environment encourages effective communication between the teacher and the students to develop these core and transferable skills.

### ***Classroom Management***

Teachers must be skilled in classroom management techniques to create a safe, orderly, and productive learning environment. This includes setting clear expectations for behaviour, providing structure and routine, and handling disruptive or challenging behaviours (Borich, 2019; Brown, 2007; Harmer, 2019). According to Richards and Rodgers (2014), classroom management is essential to any language lesson, as it sets the tone for the learning environment and facilitates students' learning. In essence, effective classroom management should maximise students' learning and engagement while minimising disruptions and distractions (Marzano et al., 2003).

A critical aspect of classroom management is establishing clear student behaviour expectations. This includes academic expectations such as completing assignments and participating in discussions and behavioural expectations such as respecting classmates and following classroom rules. According to Brophy (2013), these expectations enforce students and help teachers create a structured and positive learning environment. Also, effective classroom management promotes students' engagement in a language classroom. This involves a teacher using various strategies such as interactive teaching techniques, incorporating real-life examples and scenarios, and providing opportunities for student collaboration and discussion (Brock & Rankin, 2008).

Effective classroom management in language lessons should also involve providing students with appropriate feedback and support. This can include giving constructive feedback on assignments and assessments, providing individualised support for struggling students, and offering opportunities to practise applied language skills in a supportive environment (Brown, 2007; Larsen-Freeman, 2000). Hence, by providing targeted feedback and support, teachers can help to build students' confidence and competence in language learning.

In effect, classroom management is a crucial aspect of language teaching which the language teacher should not take for granted. The set-up of physical environment and the expected behaviours are instituted to facilitate learning. Therefore, English language teachers should help foster love for language learning to promote long-term retention of language skills.

### *Knowledge of Language*

In order to effectively teach a language, a teacher must have a deep understanding of the language. According to Nunan (2019), knowledge of language is also a core skill for language teachers. Teachers should deeply understand the target language, including its grammar, vocabulary, and pronunciation (Nunan, 2019). With this knowledge, communicating effectively with students, identifying and correcting errors, and providing clear explanations of linguistic concepts would be easier.

Larsen-Freeman and Anderson (2011) assert that “the foundation of language teaching is a thorough knowledge of the language being taught” (p. 4). This includes not only knowledge of the target language but also an understanding of the student’s first language and how languages are learned and acquired. Hence, the language teacher must be able to explain the rules of the language clearly and accurately, identify and diagnose the source of errors, and provide clear examples and explanations of how the language works (Nunan, 2015). In essence, a deep understanding of the language and the ability to effectively communicate that knowledge to students is essential in the language classroom.

### *Cultural Awareness*

Language teachers should be aware of the cultural nuances of the language they are teaching as well as the cultural background of their learners to facilitate understanding and avoid misunderstanding (Kramsch & Sullivan, 1996). Also, teachers should understand the language and culture of the target language in order to incorporate cultural elements into the curriculum to promote cross-cultural understanding (Brown, 2007; Brown & Lee, 2015).



Teachers' awareness of the cultural and social aspects of the language, such as understanding the cultural norms, values, and beliefs, can effectively help language learning and help students become proficient in the target language.

### ***Assessment Strategies***

Effective assessment strategies should be aligned with learning objectives and provide timely feedback to students (Hattie & Timperly, 2007). Teachers must use various assessment strategies to gauge students' progress and adjust instructions accordingly. Assessment is an ongoing process aimed at understanding and improving students' learning (Brookhart, 2013; Hattie & Timperley, 2007) so, teachers must make their expectations explicit and public; set appropriate criteria and high standards for learning quality; systemically gather, analyse, and interpret evidence to determine how well performance matches those expectations and standards; and use the resulting information to document, explain, and improve performance (Hattie & Timperley, 2007).

### ***Action Research***

*Action research* is a systematic inquiry process that helps educators identify and solve problems in teaching practice. Action Research is also a form of self-reflective inquiry undertaken by participants in social situations to improve the rationality and justice of their practices, their understanding of them, and the situations in which they are carried out (Kemmis & McTaggart, 1998). In essence, teachers must examine their practices, identify improvement areas, and implement changes to enhance students' results (Cochran-Smith & Lytle, 2009). The reason is that action research requires educators to evaluate their methods and pinpoint areas for development. This

type of professional development allows teachers to take charge of their students' learning and enhance their results. Teachers can better their teaching and learning results by collaborating with peers and identifying their strengths and limitations through action research. Collaboration between educators, students, and other stakeholders is a crucial component of action research, which can significantly enhance teaching and learning.

### ***Reflection***

Reflection is a critical aspect of teaching and learning, as it allows for self-assessment, identifying areas for growth and improving practice. Schon (1983) defines *reflection* as the capacity to reflect on action to engage in continuous learning. Reflection involves taking time to review and evaluate teaching practices in order to improve upon them (Zeichner & Liston, 2013). It can take many forms, including journaling, self-reflection, peer observation, and feedback from students and participation in reflective communities of practice (Korthagen, 2017).

Reflection allows teachers to identify areas of their teaching that need improvement (Boud et al., 1985). By reflecting on their teaching practices, teachers can better understand what is working well and what is not and make adjustments accordingly. This can lead to more effective teaching, ultimately benefiting students in the classroom. It can improve teachers' self-efficacy, increase job satisfaction, and improve students' learning outcomes (Korthagen, 2017; Schon, 1987). Additionally, reflection can help teachers become more aware of their biases and assumptions, leading to greater cultural competence and inclusivity in the classroom (Zeichner & Liston, 2014). Therefore, the English language teachers' continuous reflection of instruction

can lead to a more innovative and effective teaching practices, which can, in turn, benefit students.

### ***Information and Communication Technology (ICT) Integration***

Teachers must be able to integrate technology into their teaching practice effectively. This includes online resources, digital tools, and other technologies to enhance learning and engagement (Mishra & Koehler, 2006). ICT has been increasingly used in education to enhance teaching and learning experiences. However, there are concerns about the digital divide, where students may not have access to technology, which can further exacerbate existing inequalities (UNESCO, 2021).

ICT tools such as social media, online forums, and video conferencing platforms help to transform the way students collaborate and learn from each other (Anderson & Dron, 2014; Mayer, 2009). These tools enable learners to interact with their peers worldwide, thus promoting intercultural dialogue and understanding. As a cross-cutting issue, ICT can potentially transform education in various ways. Its impact can be seen in personalised and differentiated learning, collaborative learning, and access to education and teacher professional development (Mayer, 2009). ICT has the potential to transform the way teaching and learning are conducted, providing students with access to a range of resources and tools that were previously unavailable (Mayer, 2009). E-learning and blended learning have the potential to enhance the quality of education, provide students with access to a wide range of resources and improve students' learning outcomes.

### *Implications of the Cross-cutting Issues*

Cross-cutting issues in education have important implications for students, educators, and education systems as a whole. First, cross-cutting issues significantly affect how education is developed, delivered, and evaluated. They require a collaborative approach that involves educators, policymakers, and other stakeholders to ensure that education systems are responsive to the needs of all students and reflect the values of the communities they serve. Second, they require the curriculum to be developed to integrate these themes across different subjects. This means that educators must work together to create a curriculum that reflects the importance of these issues and ensures that they are covered meaningfully.

Third, cross-cutting issues require educators to adopt new pedagogical approaches that are inclusive, interactive, and reflective of the diversity of students' experiences. This means that educators must be trained to teach in a culturally responsive way that encourages critical thinking and problem-solving skills. Fourth, they require that assessment methods be developed that align with the educational goals and reflect the diverse ways in which students learn. This means that assessment should go beyond traditional measures of academic achievement and evaluate students' abilities to apply their knowledge in real-world situations. Fifth, they require that policies be developed that promote equity, inclusion, and sustainability in education. This means that policymakers must work to create policies that address the needs of marginalised communities, promote access to high-quality education and support the development of environmentally friendly practices in schools (UNESCO, 2017; UNESCO, 2019; United Nations, 2016). In effect, cross-

cutting issues have strong implications in the language classroom to promote holistic and inclusive learning.

### **Differential Learning Styles**

People with different learning styles learn and process information differently (Dunn & Dunn, 1992). Fleming and Mills (1996) explain learning styles as styles used to enhance the effectiveness of the learning process. Felder and Silverman (1988) state that cognition, strengths and weaknesses, personality traits, and environmental preferences can affect an individual's learning style. Dunn and Dunn (1992) explain how individuals prefer to learn based on Felder and Silverman's factors that individual learners' preferences for specific learning activities or strategies can influence how they learn.

There are several different models of learning styles, and the concept is often debated in education. These learning styles include Kolb's learning styles model (Kolb & Kolb, 2005), Honey and Mumford's learning styles model (Honey & Mumford, 1986), VARK Model (Fleming, 2011), and Gardner's Theory of Multiple Intelligences (1983, 1999). Individuals may have different learning preferences in different contexts, and effective learning involves using various strategies and approaches. For example, Kolb's learning style is believed to improve students' learning outcomes in business education (Kolb & Kolb, 2005). Fleming (2011) and Mills (1992) also found the VARK Model as a valuable tool for understanding the learning preferences of medical students.

With much-emerging studies in education on the significant impact of learning styles in teaching and learning, other researchers like Pashler et al. (2009) and Kirschner and van Merriënboer (2013) have argued against the

validity and utility of learning style models. These researchers have criticised the learning models for over-simplifying the complex nature of learning styles and for lacking empirical evidence (Howard-Jone, 2014; Kirschner & van Merriënboer, 2013). Willingham (2009) argues that these learning styles are essentially a myth and that no scientific evidence supports the idea that matching instruction to students' learning styles leads to improved learning outcomes.

However, other schools of thought also argue that understanding individual differences in learning styles can help educators tailor instruction to better meet the needs of their students (Pasher et al., 2009). Empirically, Coffield et al. (2004) concluded in a review of over 70 studies on learning styles that there is some evidence to suggest that matching instructional materials to learners' preferred learning styles can improve learning outcomes. On the other hand, in a literature review by Pashler et al. (2009), they acknowledged that though there needs to be more evidence to support the use of learning styles in education conclusively, the lack of evidence against the idea should not be taken as evidence.

Inclusive Education Policy is an international goal enshrined in Ghana's 1992 constitution (national goal). Currently, in Ghana, the inclusion of inclusivity in education is a topic in cross-cutting issues in education (NTECF, 2017; NTS, 2017), indicating some support for using learning styles in education. This debate among researchers continues, and more evidence is needed through studies like this to fully understand their validity and ability to make educators adopt flexible and adaptable instructional methods to accommodate these differences.

### **Adopted Learning Style Construct**

In the context of language teaching, the VARK Model has been widely used. VARK is a popular framework for understanding learning styles. VARK is an acronym for Visual, Auditory, Reading/Writing, and Kinesthetic. The VARK Model was developed by Neil Fleming in 1992. The VARK Model categorises learners into four types based on their preferred learning styles. According to the model, each person has a dominant learning style but also uses other styles depending on the situation (Fleming, 2011; Pashler et al., 2009).

#### ***Visual Learning***

Learners in this category prefer to learn through images, diagrams, and other visual aids. They often have a good spatial awareness and enjoy creating and interpreting visual representations. Learners tend to process information better when presented in a visual format (Fleming, 2011).

#### ***Auditory Learning***

Learners prefer to learn through sound and music. Thus, they prefer to learn through listening and verbal communication. They often have good hearing and enjoy listening to lectures, podcasts and other audio resources. Learners learn best through lectures, discussions, and other forms of verbal communication for participation in group information through verbal means (Fleming, 2006; Hawk & Shah, 2007).

#### ***Reading/Writing Learning***

Learners prefer to process and retain information through written texts. They prefer to learn through reading and writing. Learners in this category often have good literacy skills and enjoy reading textbooks, taking notes and

writing summaries, articles, and handouts. A reading/writing learner might find it helpful to take detailed notes during lectures or read through writing materials several times to solidify their understanding (Felder & Soloman, 2000; Fleming, 2011).

### ***Kinaesthetic Learning***

Learners in this category process and retain information through hands-on activities and movements. They learn through movements and physical activities (Fleming, 2011). Learners in this category tend to remember information better when actively engaged in learning.

Ultimately, the VARK model is chosen for this study based on the premise that students in CoEs in Ghana have different learning preferences. By extension, teacher education in Ghana encourages educators to include all learners in the teaching and learning process. It must be noted that these students will practise inclusive education in service. Hence, using the VARK model will include all learners: visual, auditory, or kinaesthetic (tactile) (Felder & Soloman, 2000; Fleming, 2011). Learners will hear, touch, manipulate objects, and read or write information in grammar lessons as the English language tutor effectively conveys knowledge to the students. This means that the language teachers should incorporate various activities that cater to each learning preference, such as using pictures and videos for visual learners, songs and chants for auditory learners, and hands-on activities to promote the learning of grammar for all in Ghana.



### Chapter Summary

In this chapter, the theories and concepts used in this study as well as some previous studies on the current topic are reviewed. The conceptual framework that highlighted topic-specific English language grammar PCK is also discussed in this chapter. The research method for the study is presented in the next chapter.



## CHAPTER THREE

### RESEARCH METHODS

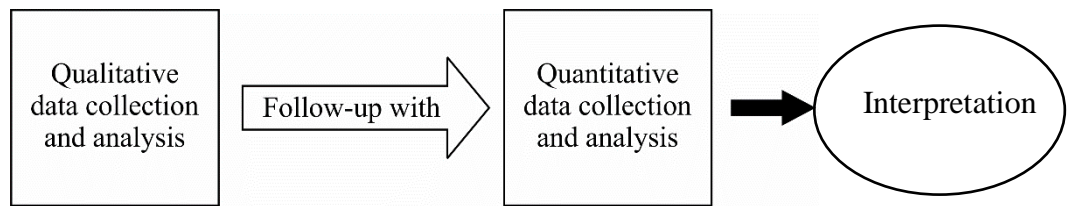
Information on how the study was conducted is provided in this chapter. In the chapter, there is a discussion of the research design, the participants and how they were selected. The chapter ends with a description of the instruments used for data collection and how the data obtained were analysed to gain insights into how English language tutors at the colleges of education (CoEs) integrate the components of PCK into teaching grammar.

#### Research Design

This study followed the exploratory sequential mixed methods design (Creswell & Plano Clark, 2011; Onwuegbuzi et al., 2010; Tashakkori & Teddlie, 2008). Qualitative data were collected and analysed, followed up with the collection of quantitative data to gain insight into how CoEs English language tutors integrate the components of PCK into grammar teaching.

For the qualitative phase, data on how English language tutors integrate PCK components into the teaching of grammar, how cross-cutting issues were introduced, and how the integration of cross-cutting issues and PCK in teaching grammar promote differential learning among students were obtained with an observation guide and semi-structured questionnaire. For the quantitative phase, data on teacher trainees' understanding of grammatical concepts were collected with a test.

Finally, the results from both the qualitative and the quantitative data were integrated. A schematic diagram of the exploratory sequential mixed methods design is presented in Figure 4.



*Figure 4:* Exploratory Sequential Mixed Methods Design (Adopted from Creswell, 2003)

### **The Rationale for Exploratory Sequential Mixed Method Design**

The exploratory sequential mixed method design was utilised because this study used both qualitative and quantitative approaches, with qualitative data collected and processed first to derive the development of the quantitative data.

Johnson and Onwuegbuzie (2004) assert that “research methods should follow research questions in a way that offers the best chance to obtain useful answers” (pp. 17–18). Consequently, this study was exceptionally well suited for a mixed-method design that included qualitative and quantitative methodologies since it provided insight into the study’s underlying questions. As a result, the researcher was able to comprehend English language tutors’ integration of PCK components into grammar teaching. Therefore, the efficient way to address the research topic and study’s objectives was to collect both qualitative and quantitative data. Furthermore, the exploratory sequential design is more advantageous for this study because the research questions are more qualitative than quantitative.

The choice of this design was based on the kind of research questions of the study. The research questions are as follows:

1. What pedagogical content knowledge do English language tutors show in teaching grammar in the selected colleges of education in Ghana?

2. How are cross-cutting issues introduced through PCK in grammar teaching by English language tutors in the selected colleges of education in Ghana?
3. How does incorporating cross-cutting issues through PCK in teaching grammar promote differential learning among students in the selected colleges of education Ghana?
4. How does integrating the practical aspects of PCK enhance teacher trainees' understanding of grammatical concepts in the selected colleges of education in Ghana?

Creswell (2003) states that selecting an effective mixed methods design necessitates considering three factors: importance, execution, and integration. Priority is based on the sort of research topic, such as whether a researcher prefers to look into “what” and “how” in qualitative studies or “if” in quantitative studies. The order in which quantitative and qualitative data are collected and analysed is then determined by the implementation, whether sequentially or concurrently. After data collection in the research process, integration occurs when the researcher tries to combine or connect the data.

Since the current study showed both exploratory and sequential features in addressing its problems, it used the exploratory sequential mixed methods design. The primary goal (priority) of the study's exploratory component was to examine the English instructors' pedagogical and subject matter expertise. It also examines how PCK-related cross-cutting issues have been included in grammar instruction. The study also examined how cross-cutting concerns are included in grammar instruction through PCK to support student learning differences. Finally, it is to show how integrating the practical

aspect of tutors' pedagogical and content knowledge helps learners understand grammatical concepts in the classroom.

Additionally, this study used a multi-layered approach, collecting qualitative data, analysing them, and then collecting quantitative data in numerical codes, which were then integrated for the successive feature (implementation). Since the quantitative aspects of the sequential exploratory design help understand the qualitative findings, the use of the quantitative data in the study was feasible.

### **Research Paradigm**

Three paradigms—critical realism, critical theory or transformative learning, and pragmatism—have been identified by proponents of mixed-method research methods as viable bases for such work (Bazeley, 2003, 2013; Maxcy, 2003; Johnson & Onwuegbuzie, 2004; Riazi & Candlin, 2014; Tashakkori & Teddlie, 2003). These perspectives are reflected in social science in various ways. Ontology (i.e., the conception of reality) and epistemology (i.e., how knowledge of this reality is produced) are the primary concerns of critical realism (Danermark et al., 2002). In order to identify and clarify their ideas about ethics, truth, knowledge, and technique, researchers are guided by metaphysical frameworks such as critical theory or transformational learning (Mertens, 2003).

Different worldviews that inform inquiry distinguish qualitative and quantitative research as distinct techniques. The positivist paradigm, which is more objective and holds that knowledge is achieved by empirical evidence, is frequently used in quantitative research (Seligman, 2011). Also, the interpretive paradigm focuses on understanding the subjective meaning

individuals attribute to their experience. Qualitative research frequently uses the interpretive paradigm (Denzil & Lincoln, 2011). The pragmatic research paradigm combines elements of positivism and interpretivism. Since this research aims at combining the knowledge gained from qualitative and quantitative research, there was the need to align the study with the pragmatic worldview.

The pragmatic research paradigm emphasises the practical application of research findings and often employs mixed methods (Creswell & Plano Clark, 2018). However, “paradigm pluralism” proponents argue this is not the case (Greene, 2006; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2012). Some people hold the view that many worldviews like these cannot coexist. Teddlie and Tashakkori (2012) refer to paradigm pluralism as “methodological eclecticism” and emphasise “diversity at all levels of the research enterprise” (p. 776). These authors define methodological eclecticism as when “Mixed Method Research practitioners select and creatively integrate the most appropriate techniques from a wide variety of QUAL, QUAN and mixed strategies to investigate the phenomena of interest thoroughly” (Teddlie & Tashakkori, 2012, p.777).

Like paradigmatic pluralism, the pragmatic worldview accepts a plurality of theories and methods while recognising the importance of subjective and objective knowledge. A practical solution is created by pragmatics by combining the knowledge gained from qualitative and quantitative research (Johnson & Onwuegbuzie, 2004). As a result, knowledge is the product of both inductive and deductive thinking, according to

pragmatic theory (Bazeley, 2013). Knowledge is formed via reflection and experience.

### **Justification for Selecting Pragmatism**

The choice of pragmatism for this study is grounded in its potential to address the complex and multifaceted nature of the research questions at hand. Pragmatism, with its flexible and problem-centred approach (Creswell, 2014), allows researchers to navigate the intricate terrain of pedagogical and content knowledge of English language tutors in Ghanaian CoEs. This paradigm's emphasis on "what works" and the centrality of research questions aligns seamlessly with the study's objectives, where practical solutions and effective methods for addressing research inquiries are paramount.

Pragmatism's commitment to finding common grounds between different philosophical perspectives offers a unique opportunity to bridge the gap between the often dichotomous choices presented by other paradigms, such as constructivist and positivist approaches. By embracing pragmatism, the researcher can transcend these philosophical dualisms and employ a blended methodology that draws from qualitative and quantitative research methods. This paradigm's focus on the integration of knowledge from multiple sources, including inductive and deductive thinking (Misak, 2019), aligns with the research's aim to provide a comprehensive understanding of the pedagogical and content knowledge of English language tutors in the teaching of grammar, making it a fitting and practical choice for the study.

Furthermore, the pragmatic worldview's recognition of the importance of subjective and objective knowledge aligns well with the study's objectives. English language tutors' pedagogical and content knowledge is a multifaceted

phenomenon that cannot be fully understood through a single perspective or method. Pragmatism's acknowledgement of the value of subjective experience and the need to combine insights gained from qualitative and quantitative research methods allows for a more holistic examination of this complex subject (Creswell, 2014).

By choosing pragmatism, the research aims to create a practical solution that integrates various theories and methods, making the study's findings richer and more nuanced. This approach encourages blending mechanical and epistemological aspects (Cresswell, 2014), providing a balanced view of the research questions. Pragmatism offers a methodological framework that mirrors the intricate nature of the research topic, enabling a more comprehensive and meaningful exploration of the pedagogical and content knowledge of English language tutors in teaching grammar in some selected CoEs.

### **Population**

There are nine colleges of education in the EAGAR zone. Therefore, the target population for the study comprised all English language tutors and third-year teacher trainees majoring in English language in the CoEs in the EAGAR zone. The third years were required for this study because at the time of this study, they had gone through enough grammar content, taken some courses in methodology and were almost due for practicum. The accessible population for this study was 1,169, consisting 19 English language tutors and 1,150 third-year students in the selected CoEs namely, Kibi Presbyterian College of Education (KPCE henceforth), Seventh Day Adventist College of



Education (SDACE henceforth), and Accra College of Education (ACE henceforth) (Colleges Administrative Offices, 2022).

Here is a breakdown of the population of the third-year students.

**Table 1: Population of Third Year Students in the Selected Colleges of Education**

College	Male	Female	Total Population
Kibi Presbyterian College (KPCE)	227	153	380
Seventh Day Adventist College	154	266	420
Accra College of Education (ACE)	240	110	350
Grand Total	621	529	1,150

Source: Colleges administrative offices, 2022

A look at Table 1 indicates that the total number of third-year students in KPCE is 380 with the majority being males. With respect to SDACE, the population of third-year students was 420. Here, majority of these students are females. Finally, a total of 350 students makes up the third-year students in ACCE. Majority of these are males (240) with the females (110) forming the minority.

Here is a breakdown of the teachers who teach English at the selected CoEs:

**Table 2: Population of English Language Tutors in the Selected Colleges of Education**

College	Male	Female	Total Population
Kibi Presbyterian College (KPCE)	3	3	6
Seventh Day Adventist College	4	2	6
Accra College of Education (ACE)	4	3	7
Grand Total	11	8	19

Source: Colleges administrative offices, 2022

In Table 2, it is evident that ACE has the highest number of English language tutors. They are seven in all whereas the other schools have six each.

### **A Profile of Kibi Presbyterian College of Education (KPCE)**

The Kibi Presbyterian College of Education is academically affiliated to the University of Cape Coast. It was founded in October 1963. The KPCE

began with 80 students to pursue four-year post-secondary courses. Currently, the college has about 1,800 students. The Kibi Presbyterian College of Education provides a range of Bachelor of Education (B.Ed.) programs, including Early Childhood Education, Primary Education, Science & Mathematics, I.C.T & Mathematics, Science & I.C.T, Technical & Vocational, Social Studies, French, and General Education. Additionally, the college offers counselling programs designed specifically for its graduating teacher trainees, enhancing their professional development and support as they enter the field of education. These diverse programs reflect the college's commitment to preparing educators across various disciplines and providing comprehensive support for their career growth and success (KPCOE, 2023). It is a co-educational school.

#### **A Profile of Seventh Day Adventist College of Education (SDACE)**

The Seventh Day Adventist College of Education is affiliated to the University of Education, Winneba (UEW). The college was established on the 16<sup>th</sup> of October, 2013. It was the executive at the Central Ghana Conference (CGC) of the Seventh Day Adventist church that set up a committee to see to the establishment of the college. The vision of the college is “To be a centre of academic excellence for the training of competent, God-fearing and self-motivated teachers for Ghana and beyond.” The mission of the college is “to provide a comprehensive training for holistic development of students who would be morally upright, competent, committed and dedicated to professional work ethics” (SDACOE, 2023). The SDACE has increased in population from the initial 120 students to over 2,000 students (Colleges Administrative Offices, 2022). Also, it has a well-furnished sports field and infrastructure, and

it is regarded as one of the 46 CoEs in Ghana which are well planned and well developed. The SDACE has the distinctive experience to help students become well-rounded, refined, and qualified professionals through its General, Early Childhood Education, Mathematics, and Science programmes. It is a co-educational school.



Figure 5: A Map Showing the Colleges Education Selected for the Study

### A Profile of Accra College of Education (ACE)

According to the official website of the Accra College of Education, it was established in November 1902 at Accra New Town as a Government Teacher Training College with an initial intake of 19 students. By way of the vision of the college, the college “is committed to be the ultimate centre of

excellence for quality teacher education in Ghana” and its mission is to “train and orient student-teachers to become competent professional teachers of high calibre for Basic schools in Ghana through quality teaching and learning, research and application of modern technologies” (ACCE, 2023). The college was moved to its present site at East Legon in January 1985 (ACCE, 2023). Until 2018, the college was associated with the University of Cape Coast, after which it established a new affiliation with the University of Ghana, Legon. The college encompasses six academic departments, namely Languages, Social Sciences, Education Studies, Vocational Skills, Mathematics/ICT, and Science (ACCE, 2023). Courses offered in ACE include Primary Education, English Language, and Early Childhood Education. Though infrastructure was a significant setback of the college, it can boast of high infrastructural development such as hostel facilities, provision of internet connectivity, furnished ICT centre, staff housing facilities, clinic, and rehabilitation of existing buildings. It is a co-educational school.

**Table 3: A Summary of the Colleges of Education under EAGAR**

College	Mission/ Government	Year Established
Accra College of Education	Government	1909
Ada College of Education	Government	1963
Presbyterian Women’s College of Education, Aburi	Mission	1928
Presbyterian College of Education, Akropong	Mission	1848
Kibi College of Education	Mission	1963
MT. Mary’s College of Education	Mission	1962
Abetifi College of Education	Mission	1952
SDA College of Education	Mission	1962
Methodist College of Education	Mission	2012

Source: Colleges administrative offices, 2022

## Data and Sources

The researcher utilised a multi-faceted approach to gather comprehensive data for this study. The primary sources of data included observations of the instructional sessions conducted by six English language tutors. These observations provided first-hand insights into the teaching practices and strategies employed by the tutors in grammar instruction.

Additionally, interviews were conducted with each of the six tutors to delve deeper into their perspectives, experiences, and pedagogical approaches in teaching grammar. These interviews were invaluable in gaining a nuanced understanding of the tutors' pedagogical and content knowledge and how it helps the teacher trainees or students.

Furthermore, questionnaires were distributed to the students of these tutors. These questionnaires aimed to capture students' perceptions, experiences, and feedback regarding the grammar teaching methods employed by their respective tutors. The students' perspectives added a valuable dimension to the data, providing insights into the effectiveness of the teaching approaches from the learners' standpoint.

To assess the students' learning outcomes and comprehension of grammar concepts, a test was administered. This test served as an objective measure of the students' understanding and retention of the grammar content taught by the tutors.

By utilising multiple data sources, including observations, interviews, questionnaires, and tests, this study ensured a comprehensive and triangulated approach to gather rich and diverse data for analysis and interpretation.

## Sample and Sampling Procedures

### Sampling of College

Ghana's 48 CoEs are grouped into five zones: EGA, VOLTA, NORTHERN, ASHBA, and CENTWEST. The EAGAR zone refers to the CoEs within the Eastern and Greater Accra Regions. The VOLTA zone refers to colleges of education within the Volta and Oti Regions. Furthermore, the NORTHERN zone refers to colleges of education within the Northern Regions (Upper East, Upper West, Savannah, Northern and North East Regions of Ghana). The ASHBA zone refers to colleges of education within the Ashanti, Bono, Bono East and Ahafo Regions. Lastly, the CENTWEST zone refers to the colleges of education within the Central, Western, and Upper West Regions. By way of purposive sampling, the EAGAR zone was chosen because most colleges found in this zone offer English language as a core and elective subject.

A multi-stage sampling technique was used to select English language tutors and teacher trainees for the study (Cohen et al., 2007). To arrive at the sample size, three colleges out of nine that offered the English language as a major course were selected using a purposive sampling technique. This was because they were the only colleges that offered English language as a major course at the time of the study. Using computer-generated random numbers, a simple random sampling technique was used to select three CoEs for the study. The remaining CoE was used for the pre-testing of the instruments.

Therefore, among the nine colleges of education in the EAGAR zone, four colleges offer English Language as a programme of study, and one of

these four, specifically Abetifi College of Education, was chosen for the pilot study. Thus, Abetifi College of Education was excluded from the main study.

**Table 4: Colleges of Education under EAGAR zone Selected for the Study**

Number	College	Affiliated University
1	Kibi Presbyterian College of Education	University of Cape Coast
2	Accra College of Education	University of Ghana
3	SDA College of Education	University of Education, Winneba (UEW)

Source: Colleges administrative offices, 2022

### Sampling of English Language Tutors

Two English language tutors for Level 300 were purposively selected in consultation with the heads of the languages department of all three colleges. Here, gender equality was considered to provide equal rights, responsibilities, and opportunities to both men and women who teach the English language grammar in the selected CoEs (UN Women, 2020). Gender equality is an argument used in this study to ensure that both genders' issues and observations are an integral part of the design, implementation, monitoring, and evaluation of PCK in grammar teaching, preventing inequality in grammar teaching and learning in our schools from continuing (United Nations, 1997). Also, tutor's experience was considered. Thus, in addition to gender factor, English language tutors with more than five years teaching experience in English language (grammar) were primary to the selection. Hence, in each college, tutors who have more than five years' experience in teaching English language grammar were selected. Therefore, in all three selected public colleges, six English language tutors were selected for this study. Three of these were female tutors while the other three were male.

*Profile of Respondents*

Table 5 shows the demographic profile of tutors sampled for the study. Their characteristics include their qualification, years of experience, and college.

**Table 5: Profile of English Language Tutors**

Teacher's Code	Qualification	Years of experience in teaching English	College
ET1	MPhil. English	7	CoEs 1
ET2	MPhil. English	11	CoEs 3
ET3	MPhil. English	14	CoEs 2
ET4	MPhil. Linguistics	16	CoEs 1
ET5	MPhil. TESOL	22	CoEs 3
ET6	MPhil. English	18	CoEs 2

Source: Field Data, 2023

Table 5 shows that tutors used for this study have accumulated substantial knowledge and expertise in teaching the English language through their experience and qualifications (Darling-Hammond, 2000; Feiman-Nemser, 2001).

**Sampling of Trainee Teachers**

The sample for this study included third-year English major teacher trainees for the quantitative part of the study. These students were the only group who had been taught enough English grammar content and the various methods of teaching grammar in the college. Second, as at the time of conducting this study, they were the only group who had taught some courses in grammar.

The sampling method employed for the quantitative part of this study was a census. The three colleges of education have a single-stream English language elective class. Thus, all the students in those classes were selected for the study. All students who read elective English Language course were selected and given the questionnaire and test items to evaluate the integration



of the practical aspects of the pedagogical content knowledge and cross-cutting issues of their tutors in teaching grammar and its outcome on students' learning of grammar. In total, 155 English major students in the three selected colleges responded to the questionnaire and test items.

### Demographic Characteristics

The study's sampled respondents were profiled based on their age, gender, and the CoE they belonged to. Table 6 shows the demographic characteristics of the respondents to this study.

**Table 6: Demographic Profile of Students**

Demographic Item	Categories	Frequencies	Percentages (%)
Gender	Male	71	45.8
	Female	84	54.2
Age	16-20	3	1.9
	21-25	108	69.7
	Above 25	44	28.4
College	CoEs 2	51	32.9
	CoEs 1	61	39.4
	CoEs 3	43	27.7
N = 155			

Source: Field data, 2023

Regarding gender, there were 71 male respondents, accounting for 45.8% of the total sample. On the other hand, 84 female respondents comprised 54.2% of the total sample. The study's gender distribution is relatively balanced, with slightly more female respondents than male respondents. This gender balance is critical, ensuring diverse perspectives and avoiding gender bias in results (World Bank, 2018). In terms of age, only three respondents fell into this age (16-20) category, accounting for 1.9% of the total sample. The study's largest age group consisted 108 respondents, all between the ages of 21 and 25. They account for 69.7% of the total sample. There were 44 respondents over the age of 25, representing 28.4% of the total

sample. According to the age distribution, most respondents were between the ages of 21 and 25.

In terms of the colleges to which the respondents belonged, CoE 1 had the most participants, accounting for 39.4% of the total sample, with 61 participants. CoE 2 had 51 respondents, accounting for 32.9% of the total sample. The smallest group, CoE 3, had 43 respondents, accounting for 27.7% of the total sample. The distribution of respondents across colleges is relatively balanced, with no single college predominating the sample. This balanced representation improves the findings' generalizability and ensures that the results are not biased towards a specific college.

**Table 7: Sample of the Study**

College	English Students	English Tutors	Total
<b>CoE 2</b>	51	2	47
<b>CoE 1</b>	61	2	73
<b>CoE 3</b>	43	2	38
<b>Total</b>	<b>155</b>	<b>6</b>	<b>158</b>

Source: Colleges Administrative Offices, 2022

### Data Collection Instruments

The instruments developed for the study were:

1. An observation guide on the components of PCK integrated into grammar teaching
2. An interview guide on the components of PCK integrated into teaching grammar
3. A questionnaire on students' understanding of grammatical concepts, tutors' PCK in teaching grammar, and topics covered in grammar lessons
4. A test to verify students' understanding of grammatical concepts

## Observation Guide

Generally, visiting the research situation is to observe the situation's people, activities, and physical aspects (Yin, 2009). Six English language tutors were observed in their natural settings. The researcher employed an observation guide and a video recorder for the observations. The following elements made up the observation guide: pedagogical knowledge, content knowledge, and knowledge of cross-cutting issues like equity and diversity, professional views and principles, core and transferable abilities, methods of evaluation, action research and reflection, ICT, differential learning such as strategies, activities, and assessment procedures that catered to individual students' learning styles.

The researcher designed the observation guide to help document the various components of PCK as outlined by Shulman (1986) and the cross-cutting issues as stated in the NTECF (2017) to cater for individual learning (Kolb, 1984; NTECF, 2017) during classroom instructions. A multi-dimensional observational guide was developed to obtain how tutors integrate PCK components into grammar teaching. The first part contained items that required tutors to provide demographic information, and the second part consisted of 22 items (see Appendix 1). A video recorder on a mobile phone was used for the observation. The observation was related to Research Questions 1, 2, and 3:

1. What pedagogical content knowledge do English language tutors show in teaching grammar in the selected colleges of education in Ghana?

2. How are cross-cutting issues introduced through PCK in grammar teaching by English language tutors in the selected colleges of education in Ghana?
3. How does incorporating cross-cutting issues through PCK in teaching grammar promote differential learning among students in the selected colleges of education in Ghana?

The researcher utilised the digital video camera on her phone for recording the observation. The camera is capable of recording in MP4 format, ensuring high-quality video capture. The capacity to collect real-time data from typically occurring social settings is one of the distinctive properties of observation as a research technique (Cohen et al., 2009).

Some of the topics that tutors taught while the observation was done included nouns, relative clauses, types of sentences according to structure, subject-verb agreement, and noun phrase. The least number of students in a class during the observation was 33 while the highest number was 60. The observations took place between 30 to 45 minutes. Two of the lessons taught lasted for 45 minutes while four of the lessons lasted for an hour. In the process of examining the qualitative data, texts from the observation were obtained by transcribing the video recordings of the six lessons. The lessons were carried out in English. As a result, the transcription of the audio was done from English to English.

#### **Semi-Structured Interview**

Interviews were used to investigate PCK in grammar teaching and to determine cross-cutting concerns. A semi-structured interview was adopted to understand tutors' pedagogical and subject knowledge in teaching grammar.

The purpose of the research questions was to pique people's curiosity by hearing about tutors' experiences and how they interpret PCK. The interview was conducted with six purposively selected English language tutors.

The following elements made up the interview guide: pedagogical knowledge, content knowledge, and knowledge of cross-cutting issues like equity and diversity, professional views and principles, core and transferable abilities, methods of evaluation, action research and reflection, ICT, differential learning such as strategies, activities, and assessment procedures that catered to individual students' learning styles. The interview questions had 31 items categorised into four sections (refer to Appendix II). An audio recorder was used in capturing the statements of the English language tutors. The interviews responded to Research Questions 1, 2, and 3.

### **Questionnaire**

Questionnaires can be used to gather data on participants' social characteristics, behaviours, attitudes, and beliefs regarding the topic under investigation (Creswell, 2014). This author adds that the purpose is to collect data in a uniform format to be compared within the dataset and across events.

In operationalising, the questionnaire was administered to 155 English major students to assess their understanding of grammatical concepts and their teacher's pedagogical content knowledge in teaching grammar. The questionnaire had four parts: the first covered socio-demographic data, the second covered knowledge of grammatical concepts, the third focused on students' evaluation of how their teacher integrated pedagogical content knowledge, and the fourth was focused on students' self-reported

understanding of grammatical concepts using a Likert scale. The questionnaire was administered in the classroom of the students before a lecture took place.

### **Test**

Tests assess a person's knowledge and skills in a particular area. Language proficiency tests precisely measure a person's linguistic abilities (Vogt & Tsagari, 2022)—the test in this study was aimed at validating the results from the questionnaire administered to teacher trainees. The test was used to evaluate the trainees' understanding of grammatical concepts through English tutors' pedagogical content knowledge in teaching grammar. Test items were generated on the topics of Word Classes, Functions of Word Classes, and Concord, which were identified as necessary based on the questionnaire responses.

The test items were administered after the questionnaire administration to support the results from the first two phases of the study. The test items were focused on the topics that appeared most frequently in the questionnaire responses (Word Classes and Functions of Word Classes) and those that appeared least frequently (Concord). The test items were created two weeks after the questionnaire was administered in June 2023. The test items consisted three sections: Section A was made up of the identification of 10 word classes in context; Section B was made up of the identification of 10 word classes, 10 functions of word classes (five on subject and five object) in context and a brief explanation of one's answer; and Section C was made up of five sentences on concord. The test items were designed to determine teacher

trainees' understanding of grammatical concepts on Word Classes, Functions of Word Classes, and Concord.

### **Reliability and Validity in the Instrumentation**

According to Cohen et al. (2007), accurate reporting, contextual analysis, thorough inclusion of the findings in discussions, interpretation of the findings, and a convincing conclusion are all necessary for qualitative data to be reliable. According to Allwright and Bailey (1991) and Weir and Roberts (1994), the consistency of classroom observations is the most important. In collecting, processing, and interpreting data, Seliger and Shohamy (1989) contend that consistency is a crucial criterion of reliability.

#### **Reliability**

To increase reliability, the researcher used two ways for data collection and analysis: comparing the intra-rater dependability of the results and cross-checking the obtained data as well as inter-rater reliability. Comparing measurements taken by the same observer during various instances of the same event is known as intra-rater or intra-observer reliability (Hair et al., 2018). After the first categorisation of the responses, the researcher randomly re-rated half of the audiotapes to investigate this reliability. This was done to assess how well the first and second analyses agreed.

Inter-rater reliability refers to the extent of agreement or consistency among different raters or researchers when analysing qualitative data. Given the subjective nature of the qualitative part of this research, it is essential to demonstrate that independent researchers can reach similar conclusions when interpreting the data.

In this study, inter-rater reliability was assessed through the coding of qualitative data by multiple people—the researcher and a colleague of the researcher as well as supervisors of the researcher. Each of them independently analysed the data and identified themes based on predefined criteria and coding guidelines. After completing the coding process, the level of agreement among researchers was examined to determine the reliability of the coding scheme. It was evident that there was agreement in the themes that were gleaned from the observation and interview.

Cronbach's alpha is considered to determine the level of dependability of the items within an instrument to enforce an acceptable measure of internal consistency for the quantitative data (Pedhazur & Schmelkin, 1991). The Cronbach's alpha, according to Pedhazur and Schmelkin (1991), reflects "the degree to which the items on a measure are representative of the domain of the construct being measured" (p. 104).

### **Preliminary Reliability Analysis for the Pilot Test (Test Items)**

#### **Kuder-Richardson Test**

The Kuder-Richardson (KR) test is a family of statistical methods used to evaluate the internal consistency reliability of tests or scales that measure dichotomous (binary) or multiple response options. The most common form of the Kuder-Richardson test is Kuder-Richardson Formula 20 (KR-20), which is used for tests or scales with dichotomous (binary) items that have two response options, typically labelled as "correct" and "incorrect." KR-20 calculates the reliability coefficient based on the proportion of agreement or consistency among item responses in a test or scale. KR-20 ranges from 0 to 1, with higher values indicating more excellent internal consistency reliability or



the extent to which the items in the test or scale measure the same construct consistently.

This test was performed to check whether the items for measuring students' understanding of word class, functions of words (subject and object), and concord can be relied on in testing the students during the primary survey. Twenty students took part in the pilot test that assessed students' understanding of grammatical concepts. Ten items were used for the word class test, five for the subject test, and five for the object test. Both subject and object are, arguably, the typical functions of words in sentences. Also, the items for testing students' understanding of concord were five. The KR-20 coefficients for word class, functions, and concord items are discussed under "Pilot Testing" section of this chapter.

### **Validity**

Validity is described by Mugenda and Mugenda (2003) as the precision and significance of a conclusion drawn from study findings. According to Mason (1996), validity is evaluating whether one is seeing, measuring, or explaining what one says they are doing. Data collection, analysis, interpretation, and presentation must be authentic for a research process to be accurate and authentic (Cohen et al., 2007). According to Cohen et al. (2007), the data must be comprehensive, carefully collected, and triangulated using various sources and techniques.

The observational tool and the conclusions gained from the observation must be pertinent to subsequent research (Chaudron, 1988). According to Beretta (1986), observations must satisfy three requirements:

1. They must accurately reflect what happened.

2. They must be relevant to the program's defining characteristics.
3. They must be complete in that they reflect the entire program.

In order to satisfy these validity requirements, there was concentration on the requirements for ESL classrooms as outlined by the NTS (2017) and the literature on the application of PCK in teaching grammar, cross-cutting issues, and differential learning in the CoEs English curriculum. This was done by collecting, analysing, and interpreting data. The researcher used data generation to determine what she thought the data sources and generation techniques could reveal and how successfully she could achieve these (Mason, 1996). In particular, this meant carefully assessing how closely the methodology's logic matched the given study questions. In this instance, the researcher saw how ESL instructors used PCK to integrate the targeted cross-cutting issues into grammar instruction to support students' differentiated learning. Valid evidence regarding the research issue under inquiry was produced by examining the teaching strategy employing classroom observations.

Additionally, determining validity entails determining the data analyses' accuracy and the interpretation's foundation (Mason, 1996). Mason (1996) contends that the final output must include a justification of the process used to get at the interpretation in order for it to be considered valid in any qualitative research. This indicates that it was necessary to determine the researcher's process to understand specific problems. Differentiated learning (Kolb, 1984) during instruction, cross-cutting issues, and PCK features (including the NTECF's third pillar) were examined within the chosen CoEs environment to achieve the abovementioned goals. Additionally, a description

of the way data were combined to describe how certain instances in the observation data may be seen as demonstrative of the use of PCK in teaching grammar at the CoEs was provided.

To continually ensure the validity of the interview guide and the observation checklists, all the constructs were reviewed by experts in the field of research and the two supervisors of the thesis. Again, interview data collected, transcribed, and interpreted were later sent to respondents to confirm whether they reflected their views shared. The instruments were also pilot-tested at Abetifi Presbyterian College of Education to ascertain the appropriateness and desirability of the tools in eliciting the required responses. The instruments were modified or changed when there was a need to do so. This was done in consultation with the supervisors and the Institutional Review Board.

#### ***Pilot-Testing***

A pilot test was done on the chosen instruments to evaluate their quality. According to Selinger and Shohamy (1989), pilot testing enables the tools to be revised and improved before being applied to the study subjects. This study component is essential for spotting potential instrument use problems. According to Fraenkel and Wallen (2000), this enables the researcher to understand the practicality of the data-gathering technique.

In getting participants for the pilot test, the simple random sampling technique was used to select English tutors and third-year teacher trainees in a college that was not part of the CoEs where the actual study was conducted. Abetifi Presbyterian College of Education was used for the piloting. As indicated earlier, four colleges offer elective English in the EGA zone.

Therefore, the remaining three colleges, ACE, SDACE, and KPCE, formed part of the study.

For the pilot study in Abetifi Presbyterian College of Education, two English language tutors were observed and interviewed by the researcher to assess the quality of the qualitative instruments (observation protocol and interview guide) of the study. After testing the qualitative instrument, 20 students were given questionnaires and test items to respond to. This was to assess the quality of the study's quantitative instrument (questionnaire and test items).

The selection of 20 students to pilot the questionnaire and test was based on practical factors such as feasibility, resource limits, and the objective of the pilot testing. This sample size made administration and analysis more achievable during the pilot phase, considering constrained resources such as time and logistics. It also allowed for a more targeted approach to detecting and correcting potential difficulties or ambiguities in the questionnaire and test design prior to wider implementation. This ensured that the questionnaire's functioning and clarity were thoroughly tested and enhanced.

#### *Measuring Understanding of Word Class by Students*

There were ten questions used to measure whether students understood grammatical concepts. The first grammatical concept analysed was students' understanding of the word class. Table 8 below shows the general KR-20 coefficient:

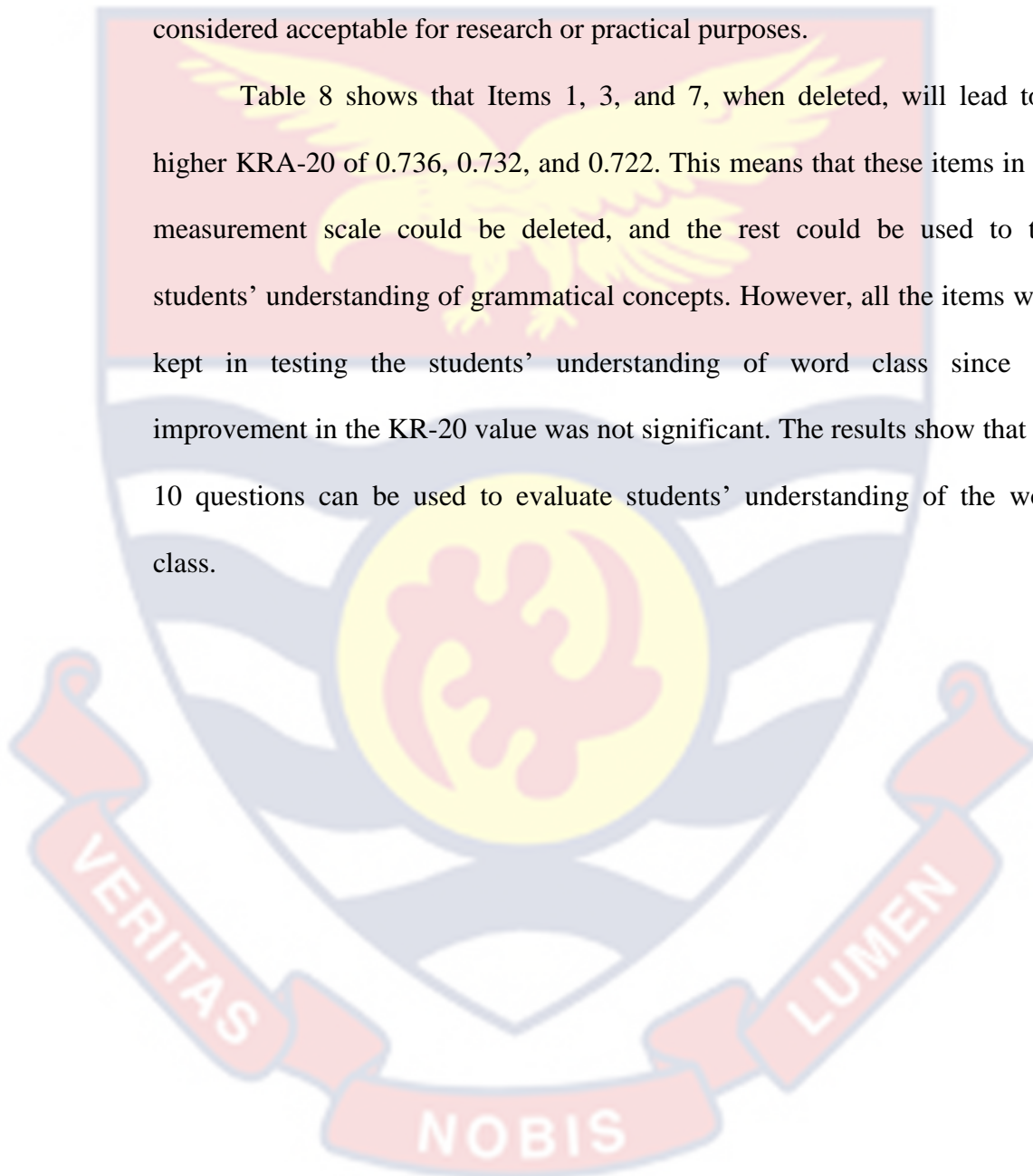
**Table 8: Reliability Statistics for Word Class**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.720	.720	10

Source: Field data, 2023

Table 8 provides information on the reliability of a test or scale using KR-20. Based on the table, the KR-20 coefficient is 0.720. This indicates the level of internal consistency reliability for the test or scale. In general, a Cronbach's alpha coefficient (in this case KR-20) of 0.70 or higher is often considered acceptable for research or practical purposes.

Table 8 shows that Items 1, 3, and 7, when deleted, will lead to a higher KRA-20 of 0.736, 0.732, and 0.722. This means that these items in the measurement scale could be deleted, and the rest could be used to test students' understanding of grammatical concepts. However, all the items were kept in testing the students' understanding of word class since the improvement in the KR-20 value was not significant. The results show that the 10 questions can be used to evaluate students' understanding of the word class.



## Item analysis

Table 9: KR-20 stats for Word Class

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Total Correlation	Item-Squared Correlation	Multiple Cronbach's Alpha if Item Deleted
WORD CLASS ITEM 1	6.6000	4.964	.061	.142	.736
WORD CLASS ITEM 2	5.8250	4.353	.482	.479	.687
WORD CLASS ITEM 3	6.0500	4.510	.192	.244	.732
WORD CLASS ITEM 4	5.8750	4.420	.353	.203	.703
WORD CLASS ITEM 5	5.9500	3.895	.607	.541	.658
WORD CLASS ITEM 6	6.0500	4.203	.355	.220	.704
WORD CLASS ITEM 7	6.1500	4.336	.262	.312	.722
WORD CLASS ITEM 8	5.9250	3.866	.658	.497	.651
WORD CLASS ITEM 9	6.0000	3.949	.528	.478	.671
WORD CLASS ITEM 10	5.8750	4.420	.353	.399	.703

Source: Field data, 2023

The KR-20 coefficient when some test items were deleted were also calculated.

*Measuring Understanding of Functions of Word Class by Students =*  
**SUBJECT**

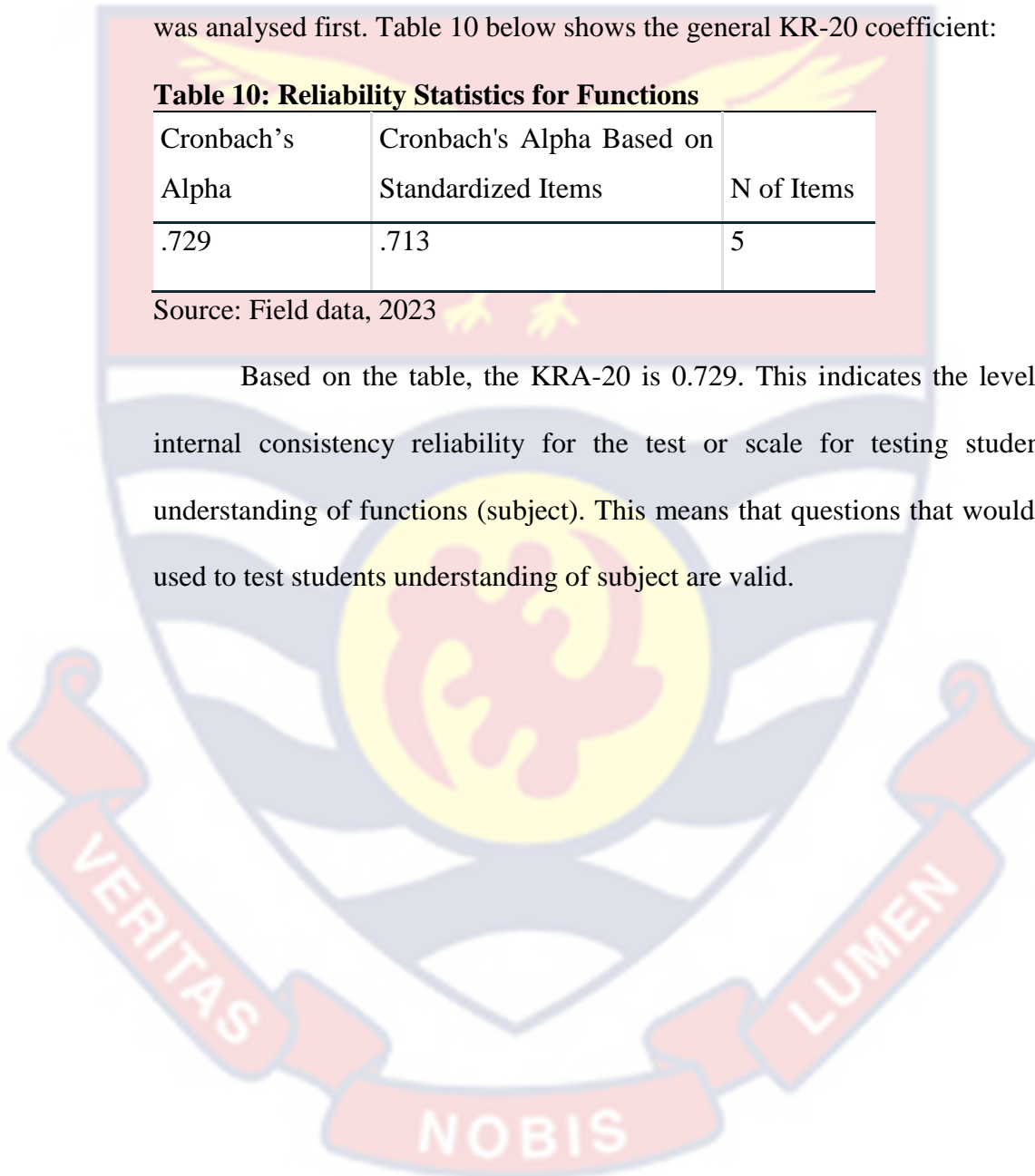
The second grammatical concept that was analysed was students' understanding of the functions of word class. An aspect of functions, subject, was analysed first. Table 10 below shows the general KR-20 coefficient:

**Table 10: Reliability Statistics for Functions**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.729	.713	5

Source: Field data, 2023

Based on the table, the KRA-20 is 0.729. This indicates the level of internal consistency reliability for the test or scale for testing students' understanding of functions (subject). This means that questions that would be used to test students understanding of subject are valid.



**Table 11: KR-20 Statistics for Subject**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SUBJECT ITEM 1	3.3250	1.456	.021	.821
SUBJECT ITEM 2	3.4000	.810	.873	.504
SUBJECT ITEM 3	3.4750	1.025	.390	.735
SUBJECT ITEM 4	3.4000	.810	.873	.504
SUBJECT ITEM 5	3.3000	1.241	.423	.709

Source: Field data, 2023



From Table 11, it is evident that Items 1 and 3, when deleted, could lead to a higher KRA-20 of 0.821 and 0.735, respectively. This means that items 2, 4, and 5 could be used to test students' understanding of subject. However, since a KR-20 value of 0.729 is satisfactory, these items were not deleted in the main survey.

### Measuring Understanding of Functions of Word Class by Students = OBJECT

The reliability statistics for object is captured in Table 12:

**Table 12: Reliability Statistics for Object**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.859	.805	5

Source: Field data, 2023

Based on the table, the KRA-20 is reported as 0.859. This indicates the level of internal consistency reliability for the test or scale for testing students' understanding of functions (object).

**Table 13: KR-20 Statistics for Object**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
OBJECT ITEM 1	2.6500	3.054	-.047	.179	.935
OBJECT ITEM 2	2.8750	1.856	.817	.756	.790
OBJECT ITEM 3	2.9500	1.792	.805	.813	.793
OBJECT ITEM 4	2.9500	1.792	.805	.729	.793
OBJECT ITEM 5	2.9750	1.666	.917	.857	.757

Source: Field data, 2023

From the table, it is evident that when Item 1 is deleted, it will lead to a higher KRA-20 of 0.935. This means that Items 2, 3, 4, and 5 can be used to test students' understanding of object. However, all test items were maintained in the main survey since the general KR-20 was satisfactory.

### Measuring Understanding of Concord by Students

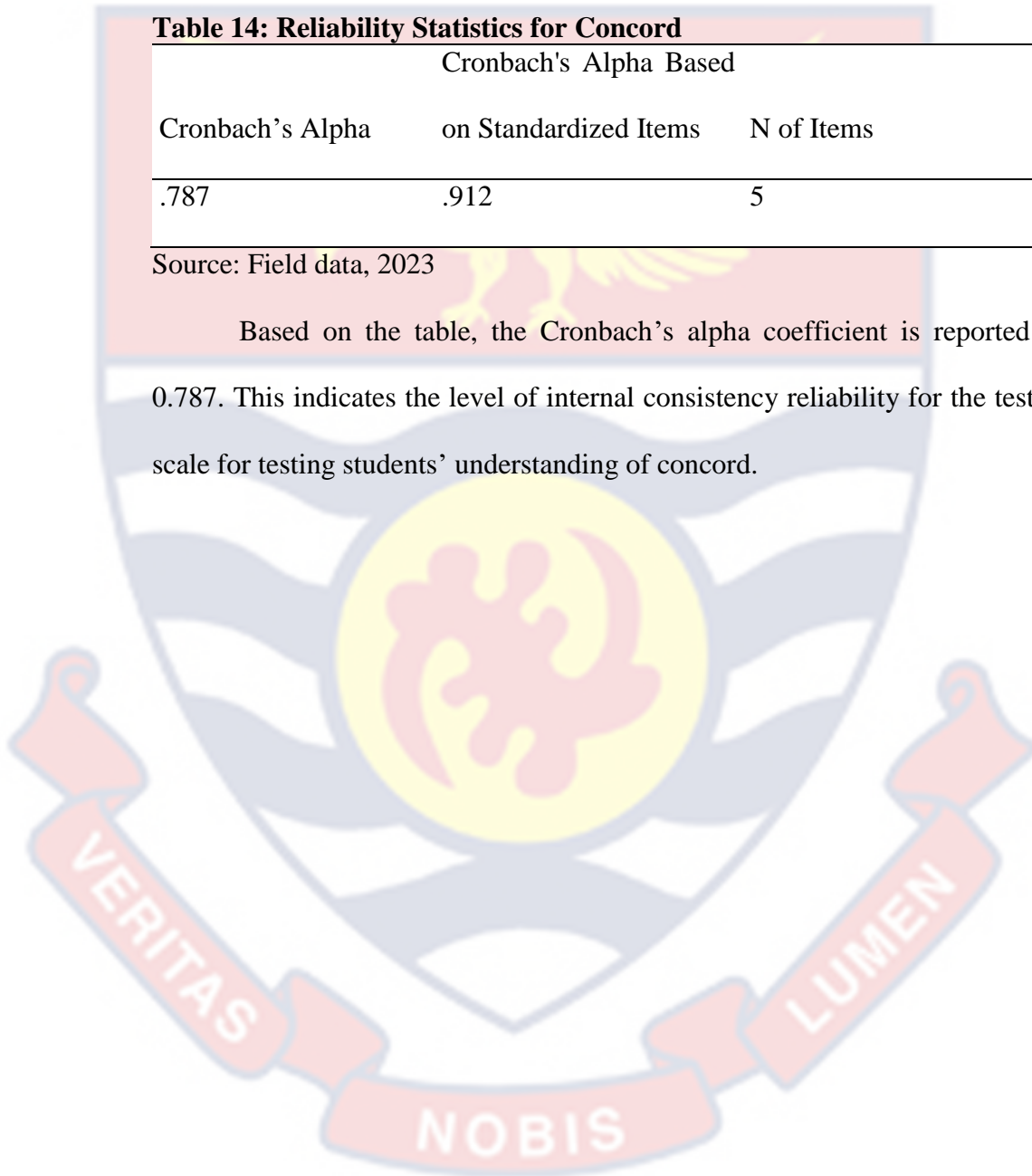
The third grammatical concept that was analysed was students' understanding of the Concord. The table below shows the general KR-20 value.

**Table 14: Reliability Statistics for Concord**

Cronbach's Alpha Based		
Cronbach's Alpha	on Standardized Items	N of Items
.787	.912	5

Source: Field data, 2023

Based on the table, the Cronbach's alpha coefficient is reported as 0.787. This indicates the level of internal consistency reliability for the test or scale for testing students' understanding of concord.



**Table 15: KR-20 statistics for Concord**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Total Correlation	Item-Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
CONCORD ITEM 1	3.2500	.808	.840	.	.686
CONCORD ITEM 2	3.2500	.808	.840	.	.686
CONCORD ITEM 3	3.2500	.808	.840	.	.686
CONCORD ITEM 4	3.2500	.808	.840	.	.686
CONCORD ITEM 5	3.8000	.779	.187	.	1.000

Source: Field data, 2023

If Item 5 was deleted, the KRA-20 would be 1.0, indicating perfect internal consistency of all the other items namely items 1, 2, 3, and 4. However, because the general KR-20 coefficient was satisfactory, all items were maintained in the main survey.

### Summary of KR-20 Coefficients

**Table 16: KR-20 Coefficients for Grammatical Concepts**

Scales	Number of items	KR-20 Coefficient
Word Class	10	0.720
Subject	5	0.729
Object	5	0.859
Concord	5	0.787

Source: Field data, 2023

### Trustworthiness of the Study

Trustworthiness is an important aspect in qualitative research since it ensures the credibility and reliability of study findings. In this study, trustworthiness was developed using a variety of tactics targeted at improving the validity and dependability of the research process.

One of the key issues that was ensured in the research was credibility. It relates to how well the study findings reflect the participants' experiences and viewpoints, especially with respect to the interviews. In this study, credibility was established through extended participation and persistent observation, allowing the researcher to gain a thorough grasp of the phenomenon under inquiry. Additionally, participant verification or member checking was used to evaluate the correctness of data interpretation and ensure

that the findings were consistent with the participants' experiences (Shenton, 2004).

Another thing that was ensured in this study with respect to its trustworthiness was dependability. Dependability refers to the stability and consistency of study findings throughout time and across situations (Morse et al., 2002). This study's reliability was verified by using transparent and methodical data gathering and analysis techniques. A detailed documentation of the research process, including data collection methods, coding procedures, and analytical conclusions, was kept to aid auditability and replication of the study by other researchers (Creswell & Poth, 2018).

Finally, confirmability was ensured. Confirmability refers to the objectivity and neutrality of the research findings, ensuring that they are not influenced by the researchers' biases or preconceptions (Lincoln & Guba, 1985). In this study, confirmability was promoted through reflexivity, where researchers critically examined their own biases and assumptions throughout the research process (Charmaz, 2006). Reflexive journaling and peer debriefing sessions were used to reflect on the researcher's perspectives and interpretations, thereby minimising the impact of personal biases on the study findings (Creswell, 2013).

### **Data Collection Procedures**

Streubert and Carpenter (2003) assert that researchers should consider the rights of the participants in research studies. With the Institutional Review Board's clearance, formal letters from the authorities in the Department of Arts Education, University of Cape Coast were received and used to seek permission from appropriate authorities of the selected CoEs for the study. An

initial visit was made to these colleges (KPCE, ACE, & SDACE) so as to get acquainted with the environment, the Heads of the Languages Departments, the English language tutors, and the third-year English Language major students.

On the first visit to each of the colleges in March, 2023, the researcher met first with the principals and explained the nature of the research and its purpose to them. Afterwards, with permission from the principals, the same day, the researcher also met with Heads of the Languages Department (HoDs) during their break times at the departmental office to discuss the purpose of the study with them. Based on the agreement from the first visit, the following week of the first visit, the researcher met the English tutors first and later, on the same day, with the teacher trainees (English major). The researcher sought the assistance of the HoDs in meeting the two groups to interact with and explain the purpose of the study to them. During the visits, the researcher discussed dates and times for the administration and collection of the instruments with the Principals, Departmental Heads, the English language tutors and teacher trainees.

For the first phase, observations and interviews for the selected English language tutors were undertaken first in April/ May 2022 during grammar lessons at their respective basic schools. The observations of lessons of English language tutors were done first for a period of 45 to 60 minutes while the interview sessions were done right after the observation for a period of 30 minutes to one hour. The observation and interview involved videotaping and audio recording of grammar lessons in participants' classes to identify aspects of PCK in teaching grammar and how participants introduce cross-cutting

issues through PCK in teaching grammar to cater for differential learning among students.

The observations and interviews were conducted at the times designated by the selected colleges. They were done once for each participant to get first-hand information on PCK in teaching grammar at the selected CoEs. The observational protocols and the interview guides were designed to cater for previous and current lessons (routine practices of participants). Hence, there was no need for more sessions with participants.

The observations were done in the classrooms where the English language tutors were conducting their lessons. These classroom settings provided a first-hand view of the teaching practices and interactions between tutors and students. The ambience of the classroom varied depending on factors such as the teaching style, student engagement, and classroom dynamics. Overall, the mood of the participants during observations was focused and engaged, with both tutors and students actively participating in the teaching and learning process.

The interviews were usually held in the Head of Department's office at the CoEs. This setting created a professional and structured environment for the interviews, maintaining privacy and focus throughout the discussions. Furthermore, interviews were performed in various conducive and serene locations within college campuses, creating a comfortable and relaxed environment for the participants. The ambience of the setting contributed to a positive mood among the participants. This encouraged open and candid conversations during the interviews. For the interviews, dedicated digital audio recorders were employed for the recording. The recorders captured clear



and detailed audio data. In the process of examining the qualitative data, texts from the narratives were obtained by transcribing the audio recordings with the six participants that took part in the study. The interviews were carried out in English. Consequently, the audios were transcribed from English to English.

The second phase of data collection involved the administration and collection of questionnaires to the selected third-year (English major) students. On the day of administering and collection of questionnaires, in the month of June 2023, the researcher, led by the HoD and some tutors of the department, administered questionnaire and test items to the selected Level 300 students in the selected colleges. The selected teacher trainees were expected to answer the questionnaire within 30 minutes duration and later in about three weeks' time responded to test items within 30 minutes.

Steps were taken to adhere to significant ethical rules and legal criteria when collecting data from the population of the study, so this approach would be expanded all through the duration of this project. The identities of study participants, along with the answers on questionnaires, were kept confidential. As a result, measures were taken to protect the intellectual interests of the participants in the study so that their involvement in this project somehow does not endanger their overall well-being.

### Data Processing and Analysis

Information obtained with the instruments were analysed based on the four research questions and one hypothesis that were formulated to guide the study. The first research question sought information on PCK English language tutors show in the teaching of grammar. This research question was analysed based on the themes that emerged. The second research question sought information on cross-cutting issues introduced through PCK in teaching of grammar. This was analysed based on the themes that emerged. The third research question explored the incorporation of cross-cutting issues through PCK in teaching grammar to promote differential learning among students. This research question was analysed using thematic analysis.

With respect to Research Questions 1, 2, and 3, observational protocols and semi-structured interview guides were adopted. In so doing, the data were collected and stored using digital video and audio recording. The process of collecting and storing data using digital video and audio recording involved several key steps and techniques. Initially, the researcher utilised the digital video camera on her phone. The camera is capable of recording in MP4 format, ensuring high-quality video capture. For audio recording, dedicated digital audio recorders were employed, capturing clear and detailed audio data. Once the recording sessions were completed, the digital video and audio files were transferred to a secure storage system on the researcher's computer.

The observations and interviews were taped, transcribed, and coded (codes generated by the researcher) with the help of research assistants who were trained by the researcher. Consequently, the transcribed data were imported into Excel broadsheet and then uploaded unto NVivo 12. This application allowed the data to be organised into themes and to also highlight

similarities and differences in the data collected. The analyses of the results generated from NVivo 12 were used for the write-up. Hence, key points and themes from the data were outlined as they relate to the research.

The fourth research question sought information on how the integration of practical aspects of PCK enhanced teacher trainees understanding of grammatical concepts in the classroom. Questionnaire and test items were administered to 155 third-year teacher trainees offering English as a major subject in the selected CoEs within the EAGAR zone. The questionnaire mainly examined their understanding of grammatical concepts (including PCK in teaching grammar) that they have been taught and the PCK in teaching grammar on the lesson that was observed. The test items validated their understanding of the topics *Word Classes*, *Functions of Word Classes*, and *Concord* to validate the results from data collected on teacher trainees' understanding of grammatical knowledge.

Research Question Four was analysed using descriptive and inferential statistics. Frequency distributions and measures of central tendency like mean and standard deviation were used in relation to the descriptive data. Pearson Correlation tests were utilised for the inferential statistics.

Also, the hypothesis sought information on whether there was a significant relationship between the PCK of the tutors and the understanding of grammatical concepts by the students. With regard to this hypothesis, a correlation analysis was employed. A correlation analysis indicates whether there is a significant relationship between two continuous variables. It also shows the strength of the relationship. The relationship can either be positive or negative.

**Table 17: Summary of Data Analysis Procedures and Research Questions**

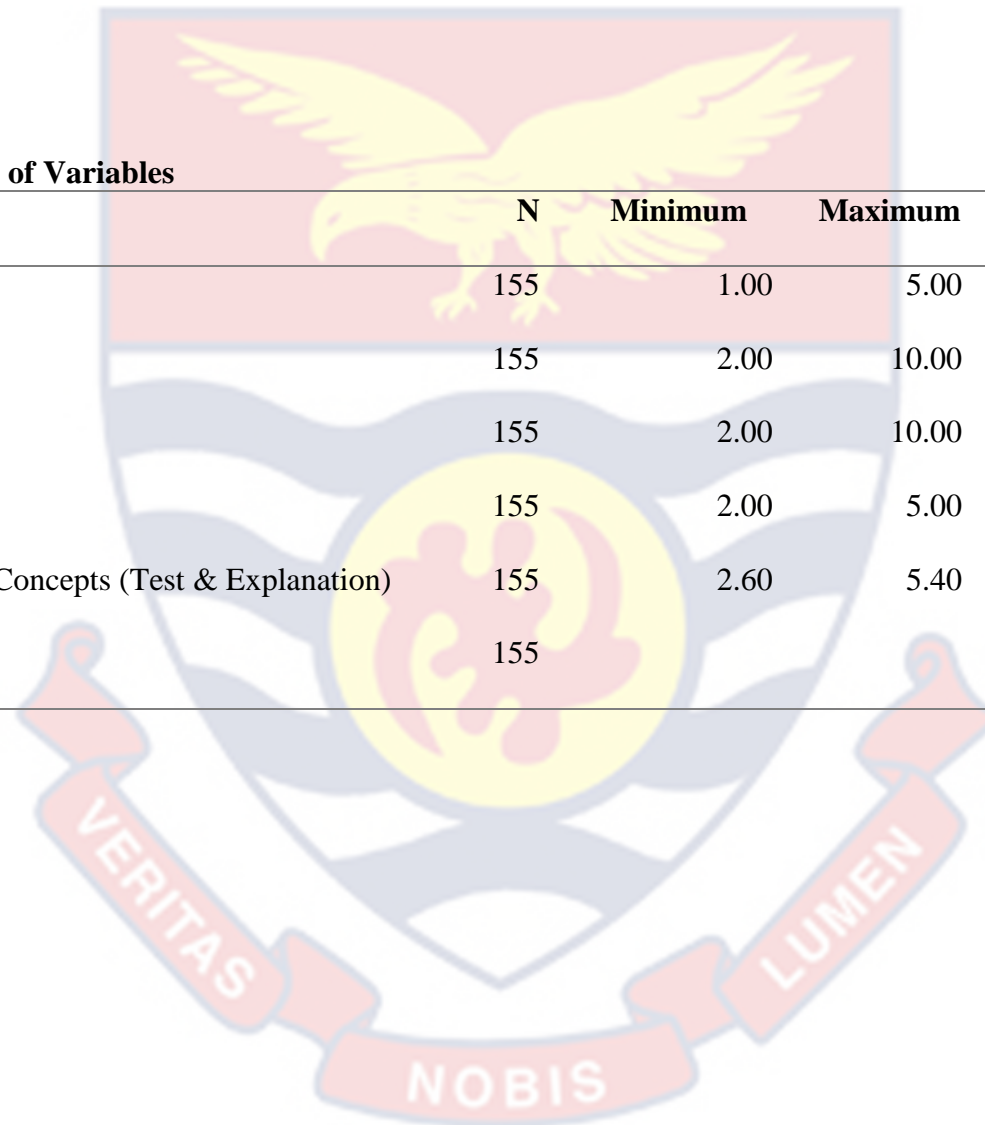
Research Questions & Hypothesis	Data Collection Instrument	Data Analysis
1. What pedagogical content knowledge do English language tutors show in the teaching of grammar in the selected colleges of education in Ghana?	Interview & Observation	Thematic analysis using NVivo 12
2. How are cross-cutting issues introduced through PCK in the teaching of grammar by English language tutors in the classroom in Ghana?	Interview & Observation	Thematic analysis using NVivo 12
3. How does the incorporation of cross-cutting issues through PCK in teaching grammar promotes differential learning among students in colleges of education in Ghana?	Interview & Observation	Thematic analysis using NVivo 12
4. How does integrating the practical aspects of PCK enhance teacher trainees' understanding of grammatical concepts in the classroom in Ghana?	Questionnaire/ Test	Mean & Standard Dev.
5. There is a strong relationship between English tutors' PCK and teacher trainees' understanding of grammatical concepts	Questionnaire/ Test	Pearson Correlation

Source: Autor's own construct

**Table 18: Descriptive Statistics of Variables**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
PCK of Tutors	155	1.00	5.00	4.1463	<b>.62268</b>
Word Class Test	155	2.00	10.00	7.0387	<b>1.77239</b>
Functions Test	155	2.00	10.00	8.9355	<b>1.52331</b>
Concord Test	155	2.00	5.00	4.4194	<b>.79667</b>
Understanding of Grammatical Concepts (Test & Explanation)	155	2.60	5.40	4.3523	<b>.53213</b>
Valid N (listwise)	155				

Source: Field data, 2023



### **Data Management**

Each dataset was scrutinised for errors and inconsistencies before being analysed. The data for the study were saved on my computer. The researcher made sure that she saved a copy on her Google account. All folders containing research data saved in any account were given passwords that are accessible to only me. Soft copies of data of observations, interviews, and questionnaire were sent to my two supervisors and subsequent data collected were kept by the researcher. The data would be kept for at least 5 years after the study before it would be destroyed. The soft copies of interviews, observations, and questionnaires saved on the computer would be deleted. The five-year duration before the destruction is as against any situation where every milestone of the study is considered tentative and subject to review with time and the assumption, therefore, is that the information might have outlived its usefulness and no longer relevant.

### **Measurement of Variables/ Constructs**

The constructs for this study comprised pedagogical content knowledge of tutors, content knowledge of English major students, students' understanding of grammatical concepts, and students' performance in word classes test, functions of word class test and concord test. Questionnaire and test were used to collect these data.

Tutors' pedagogical content knowledge (PCK) construct containing 25 items from the questionnaire were measured on a scale of 1 to 5 (1 = Strongly Disagree; 2 = Disagree; 3 = Undecided; 4 = Agree and 4 = Strongly Agree). In measuring this construct, a composite variable was computed in SPSS by taking the average of all twenty (25) items to represent the construct. The

Cronbach alpha for this construct was 0.951, indicating a high internal reliability of the scale items.

The other three constructs, performance of students in word class test, functions of word classes test and concord test, were the actual scores obtained by students in test covered in these three grammatical concepts. These three grammatical concepts were chosen for the test because they had the highest mean in the self-report of grammatical concepts from the questionnaire by the students. Since the students had reported that they understood these concepts very well, a test was conducted in these topics to further probe or ascertain their understanding of these three grammatical concepts. The test items for these tests were validated by the KR-20 test. The test for the word class contained 10 questions. Accordingly, the highest score for this test was 10. The same was the case for the test on the functions of word classes (nouns). The highest score for this test was also 10. However, with the test of the students' understanding in concord, only five questions were asked. Consequently, the highest score was five.

### **Descriptive Statistics**

The descriptive statistics for the study's constructs (tutor pedagogical content knowledge and students' understanding of grammatical content) showing the mean scores and standard deviations are reported in Table 18.

The results show that the assessment of tutors' PCK among students was averagely 'very good' or 'quite high'. The statistical numbers recorded by the respondents' assessment of PCK ( $n = 155$ ;  $M = 4.15$ ;  $sd = 0.62$ ) provide support for the assertion that students described their tutors' PCK to be high.

The standard deviation is quite low relative to the mean, and this suggests that respondents were very sure of their opinions about the state of tutors PCK.

Also, the test results show that, on the average, the students performed well in all three areas of word class identification, functions and the subject-verb agreement. In the word class test, the statistical numbers ( $n = 155$ ;  $M = 7.04$ ;  $sd = 1.77$ ) indicate a solid understanding of word classes. Similarly, their performance in identifying *functions of word classes (nouns)* was strong, as evidenced by the statistical numbers ( $n = 155$ ;  $M = 8.94$ ;  $sd = 1.52$ ). Moreover, (their performance in the area of *concord*) was also good as evidenced by the statistical numbers ( $n = 155$ ;  $M = 4.42$ ;  $sd = 0.79$ ). Finally, students' understanding was measured by using the variable "Understanding Total".

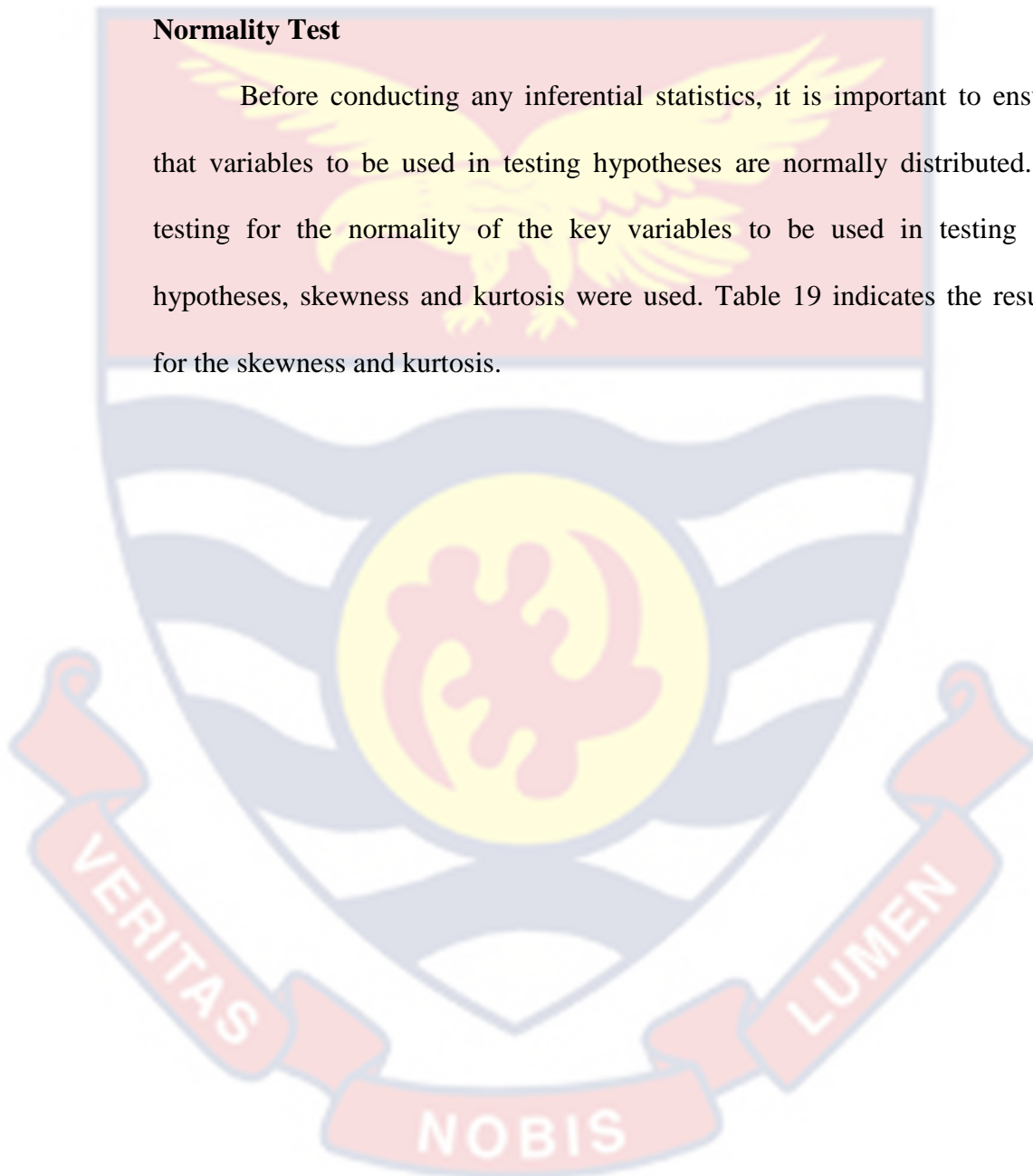
In the colleges of education, understanding can be measured by a student's performance in a test. In addition, understanding can be measured by the knowledge of the students. In this study, the students were asked to identify word classes underlined in a passage, identify the functions of word classes (nouns) in context, correct concord errors and explain some answers given. Thus, "Understanding Total" is a variable that comprises students' performance in the test as well as their explanation of some of the answers given. The average of the three tests and their explanation of some answers were computed as "Understanding Total". Thus, even though students gave a self-report of their understanding of grammatical concepts from the questionnaire, the research used this variable as measurement of students' understanding. The statistical numbers of this variable ( $n = 155$ ;  $M = 4.35$ ;  $sd = .53$ ) reveal that students had an average understanding of grammatical concepts. These findings highlight the students' ability to identify word



classes in a passage, functions of word classes (nouns) in contexts, and their understanding of concord. Overall, it appears that students did better in the functions test than in the word class test as function test had the highest mean score of 8.94 and the least standard deviation of 1.52.

### **Normality Test**

Before conducting any inferential statistics, it is important to ensure that variables to be used in testing hypotheses are normally distributed. In testing for the normality of the key variables to be used in testing the hypotheses, skewness and kurtosis were used. Table 19 indicates the results for the skewness and kurtosis.



**Table 19: Normality Test of Variables**

	<b>N</b>	<b>Mean</b>	<b>Skewness</b>		<b>Kurtosis</b>	
	<b>Statistic</b>	<b>Statistic</b>	<b>Statistic</b>	<b>Std. Error</b>	<b>Statistic</b>	<b>Std. Error</b>
PCK Tutors	155	4.1463	-1.694	.195	5.647	.387
Test Word Class	155	7.0387	-.726	.195	-.006	.387
Test Functions	155	8.9355	-2.011	.195	4.341	.387
Test Concord	155	4.4194	-1.137	.195	.287	.387
Understanding of grammatical concepts	155	4.3523	-.982	.195	1.063	.387
Valid N (listwise)	155					

Source: Field data, 2023



Skewness values for all variables ranged from -0.726 to -2.380. Furthermore, kurtosis values ranged from -0.006 to 5.647. Both skewness and kurtosis were found to be within the acceptable ranges of less than 3 for skewness and less than 8 for kurtosis (Kline, 2016). As a result, the assumption of normally distributed data was not violated.

### **Factor Analysis**

Factor analysis is a statistical technique widely used in social science research to identify underlying factors that explain variation in a set of observed variables (Salkind, 2018). Factor analysis is helpful because it enables researchers to simplify complex data sets by identifying the underlying factors that influence observed correlations between variables (Lee & Omrod, 2015). Researchers can better understand the underlying structure of the data and identify critical factors that drive the relationships between constructs by reducing the number of variables.

Factor analysis was utilised in the study to examine whether all 25 items on the questionnaire for measuring PCK measure the construct. The study's goal was to see if any underlying factors could explain the variation in students' understanding of grammatical concepts and whether their tutors' PCK influenced these factors. As such, it was hypothesised that their tutors' PCK influences students' understanding of grammatical concepts. Investigating this relationship between the two constructs was essential. This is because grammatical concepts are fundamental in language learning, and a solid understanding of these concepts is essential for effective communication. As a result, understanding the factors that influence students' understanding of

grammatical concepts is critical for improving the teaching and learning of these concepts.

### **Ethical Issues**

Some ethical issues were likely to arise during this study; hence, it is necessary to demonstrate how these issues were addressed in this study. Some of the ethical issues are as follows:

#### **Ethical Issues Relating to the Research Problem**

This enables the researcher to build trust and respect with the respondents by ensuring that the questionnaires and the interview guide items are well structured to meet the demands of the problem being studied and that the study has no tendency to marginalise any individual involved in the research study. Hence, all participants were treated equally as co-researchers to avoid any biases.

#### **Ethical Issues in the Purpose and Questions**

In this instance, the researcher communicated and described the study's goal to the respondents, ensuring that both parties shared it. This was accomplished using the English language, the official teaching language in Ghana at all educational levels. All the participants had excellent command of the English language, making it easy for them to comprehend and interpret the instructions for the questionnaires and interview guide items.

#### **Ethical Issues in Data Collection**

To protect and value participants, research plans were sent to IRB to be reviewed. Also, an informed consent form was designed for respondents to sign before participating in the research. The administration of the informed consent forms was done for four weeks before data collection. This was to

acknowledge the rights and protection of the respondents during data collection and to assure them that information that may infringe on their rights will remain concealed. Hence, the participants had the right to opt out of participating in this study at any time. The questionnaires for teacher trainees were administered in well-spaced and ventilated classrooms to avoid stressful conditions. The recorded video of observations and recorded audio of interviews were stored confidentially with the researcher. During the observations and interviews, participants were assured of the confidentiality of the recording that will take place.

### **Ethical Issues in Data Analysis and Interpretation**

This is to ensure that the anonymity of the respondents was protected during and after the data collection process. Hence, the names and index numbers of the participants were disassociated from the responses at all stages of data processing and analysis, especially in both the questionnaire and the interview. Once collected and analysed, the data were owned by only the researcher and were not accessible to anybody or association. Again, once the data had been analysed, they would be kept under lock and key for five years, after which they will be discarded by the researcher so that they do not fall into the hands of others. Pseudonyms were used for tutors as well as the colleges. The colleges were given pseudonyms such as College of Education One (e.g.CoE 1). Also, tutors were given pseudonyms, for example, English Tutor One as ET 1.

### **Ethical Issues in Writing and Disseminating the Research**

Language or terms that are discriminatory towards people based on their gender, sexual orientation, race or ethnicity, handicap, or age were not

used in this study. The researcher provided an unbiased account of the data gathered to reflect the characteristics of the English language tutors and teacher trainees.

### **Potential Limitations of the Study**

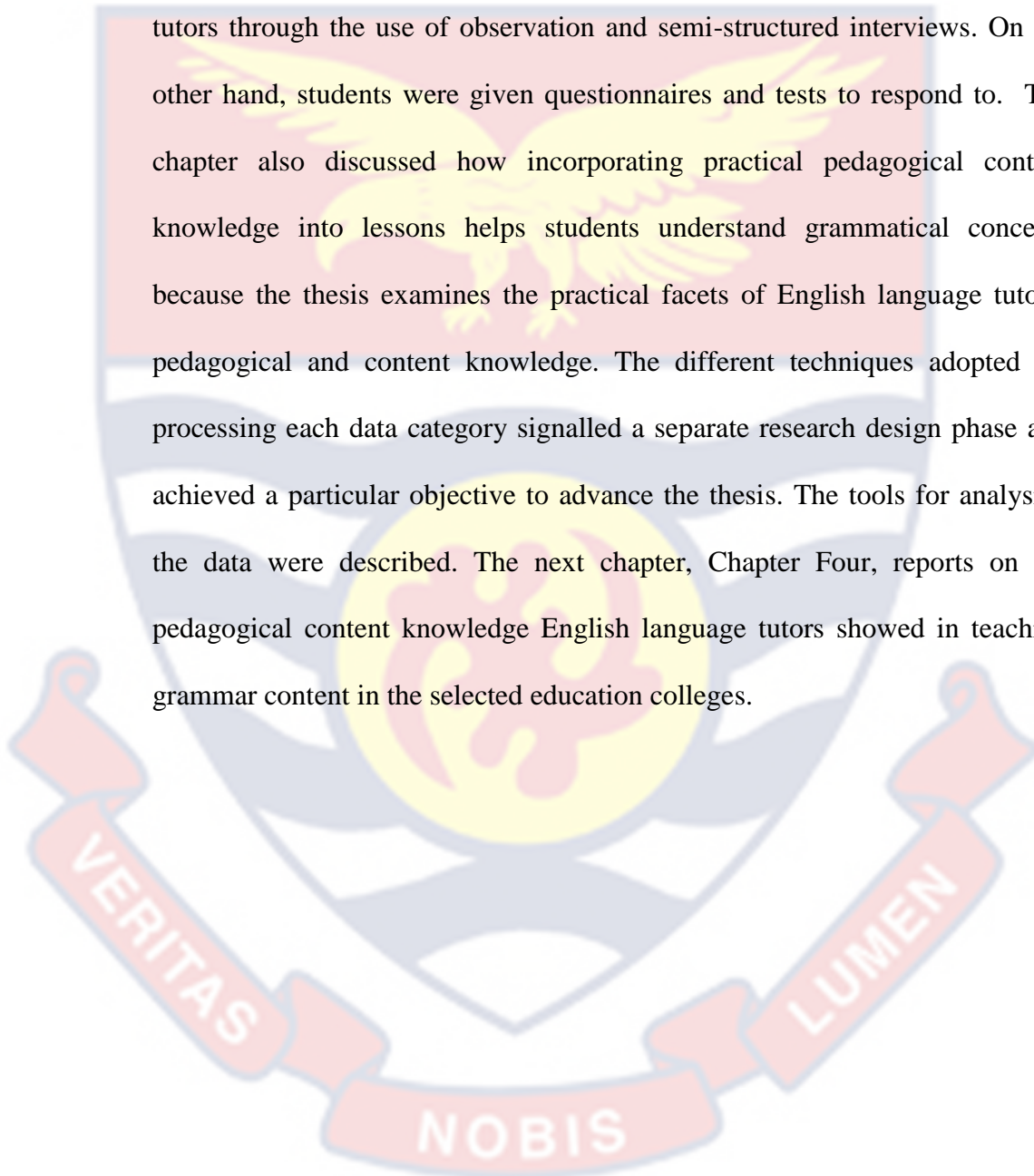
Various procedures were taken to increase the validity and reliability of the assessment utilised in this study. However, there were some restrictions. One of these restrictions is how far the results could be applied outside the scope of the study. The sample size covered only some colleges in Ghana, but it was limited to the selected colleges for this study, which is too narrow to make generalisations.

Again, given that most of the data were gathered during teaching sessions, the 30 minute time limit for delivering the questionnaire may have caused uneasiness for specific students (Kroll, 1990). Hence, to not take much of the time of students and tutors, the questionnaire administration was done with some speed limit, though all questionnaire sections were catered for. This act may have produced some anxiety for students to respond within the stipulated time.

Due to the numerous techniques used, there were constraints on the precision of gathering information, entry, and analyses: coding, content analyses for common themes, typing and analyses of both descriptive and inferential results with videos and other primary data collected. This act reduced errors in recording data but did not eliminate the limitations of the accuracy of data collection. Additionally, given the intricate dual structure of the data analysis used in this work, it cannot be completely ruled out that sporadic errors may have happened.

## Chapter Summary

The methodology used for this thesis was covered in this chapter. Several phases of data from multiple sources were gathered through various methods and tools. The first data phase was collected from English language tutors through the use of observation and semi-structured interviews. On the other hand, students were given questionnaires and tests to respond to. The chapter also discussed how incorporating practical pedagogical content knowledge into lessons helps students understand grammatical concepts because the thesis examines the practical facets of English language tutors' pedagogical and content knowledge. The different techniques adopted for processing each data category signalled a separate research design phase and achieved a particular objective to advance the thesis. The tools for analysing the data were described. The next chapter, Chapter Four, reports on the pedagogical content knowledge English language tutors showed in teaching grammar content in the selected education colleges.



## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### Introduction

In this chapter, the results obtained from data analyses on how English language tutors in CoEs integrate PCK components into teaching grammar are presented and discussed concerning the four research questions and the only hypothesis formulated to guide the study.

To achieve these, lessons from six English language tutors were observed, and follow-up interviews were done. The results from the observations and interviews are presented and discussed in this section. In addition, the responses from the questionnaire as well as the performance of the teacher trainees were analysed and discussed.

#### Presentation of Results

##### Results of Observation

The first three research questions focus on what pedagogical content knowledge English language tutors show in teaching grammar in the selected colleges of education in Ghana, how cross-cutting issues are introduced through PCK in grammar teaching by English language tutors in the selected colleges of education in Ghana, and how incorporating cross-cutting issues through PCK in teaching grammar promotes differential learning among students in the selected colleges of education in Ghana. Based on these three research questions, classroom observation and post-observation interviews were conducted on six tutors (ET1-ET6) and analysed based on the theories underpinning this study (Celce-Murcia & Larsen-Freeman, 1999; Kolb, 1984; Shulman, 1986) and the adapted PCK conceptualisations for the study



(NTECF, 2017; Shulman, 1986). Therefore, this description is focused on the following components: knowledge of subject matter, pedagogy, curriculum, learners, cross-cutting issues, and promotion of differential learning among students in the observation and interview data. For each observation, sub-topics include description of lesson, discussion stage, implementing teaching chronologically, students' engagement, lesson focus and direction, predictions and discussion of mistakes, handling of students' questions, knowledge of pedagogy, knowledge of subject matter, identification of cross-cutting issues, differential learning, employment of assessment procedures, and language used.

### **Observation of ET1 (CoE 1)**

There were 60 students present although the class register had 61 students for English major. There were more females than males in the lecture room. The lecture hall was spacious, but the students were sitting close to one another. The lesson took one hour. The school and the lecture hall are resourced in terms of infrastructure; the lecture hall has a white writing board, a projector, sockets, lights, and enough tables and chairs. The lesson started at 9:00 a.m. All ethical protocols were observed.

#### ***Description of Lesson 1***

Topic: *Noun*

#### ***Introduction Stage***

ET1 began the lesson by revising students' previous syntax knowledge, demonstrating the tutor's awareness of addressing learning gaps. ET1 employed the verbal exposition method, discussion, and interaction to engage students in understanding the concepts of syntax and grammar. This stage set

the foundation for the new topic of nouns, indicating a well-designed lesson plan. Here, ET1 demonstrated knowledge of instruction, curriculum knowledge, knowledge of assessment, pedagogical content knowledge, and subject matter knowledge.

***Discussion/Explanation Stage:***

The lesson was designed to develop students' understanding of nouns, including their meanings, forms, and functions in context. ET1 utilised discussions, interaction, and chalkboard analysis to teach the forms and functions of nouns. By incorporating these activities, ET1 fostered active student engagement and facilitated comprehension of the grammatical concepts. ET1 acted as a facilitator in the teaching-learning process by guiding students to respond positively to the concepts under discussion. ET1 displayed the integration of pedagogical knowledge, its sub-constructs (classroom management and organisation, knowledge of strategies, knowledge of assessment), and differential learning.

***Implementing Teaching Chronologically:***

ET1 structured the lesson chronologically, covering the necessary components logically. ET1 addressed the syntactic structure, grammar concept, parts of speech (specifically nouns), and forms and functions of nouns in a sentence. This organised approach allowed students to build a solid foundation of knowledge and understanding. ET1 displayed the integration of pedagogical knowledge and its sub-constructs (classroom management and organisation, knowledge of strategies, knowledge of assessment), knowledge of subject matter, and catering for differential learning.

### *The Lesson Engaged Students*

ET1 successfully engaged students by encouraging active participation through discussions, sentence construction, and analysis. This communicative approach allowed students to apply their knowledge, contributing to a deeper understanding of the topic. ET1 created an environment that fostered engagement and active learning by involving students in the learning process. The tutor taught grammar in context.

### *The Lesson Focus and Direction*

Ideas from students and the tutor determined the lesson's focus and direction. The students identified and contributed to discussions on the functions of nouns, constructed their sentences, and identified nouns and their functions within the sentences. ET1 also provided rules and patterns for sentence construction, allowing students to analyse and explain these concepts. By using an integrated approach to teaching grammar (inductive and deductive methods), ET1 catered to different learning styles and fostered a comprehensive understanding of the topic.

### *Encouraging Predictions and Discussion of Mistakes*

ET1 actively encouraged students to make predictions and discuss their mistakes. ET1 rephrased and responded to students' mistakes, fostering a supportive learning environment. The students were encouraged to predict the stages of the lesson and explain stated points. Their responses were written on the chalkboard and analysed according to the functions of nouns in sentences. These activities promoted critical thinking, reflection, and error analysis. ET1 integrated knowledge of learners, CK, knowledge of educational context, and cross-cutting issues (core and transferable skills/ communication skills).

### *Handling of Students' Questions Professionally*

Although students were encouraged to ask questions at some points during the lesson, it would have been beneficial for ET1 to encourage consistent student participation by inviting questions throughout the lesson. This would have provided more opportunities for clarification and would have addressed students' inquiries in real time, promoting a deeper understanding of the content. ET1 responded promptly to students' questions by rephrasing them, allowing students or other classmates to respond. ET1 intervened if responses needed clarification, ensuring that students' questions were given the necessary attention and to effectively address any confusion or misconceptions. ET1 exhibited professionalism in responding to students' questions, irrespective of their nature. At the discussion stage, ET1 displayed the integration of PK and CK and some cross-cutting issues.

### *Knowledge of Pedagogy (PK)*

ET1 utilised discussion, interactive, and verbal exposition methods to achieve the objectives. ET1 also incorporated appropriate teaching resources and differentiated activities, including using mobile phones for research and group discussions. This ensured that the students with varying access to resources could participate and learn effectively. Integrating the four language skills further enhances students' language acquisition and comprehension. Therefore, ET1 displayed enough PK and sub-constructs such as curriculum knowledge, strategies (discussion and verbal exposition methods), integrated methods of teaching grammar (inductive and deduction), knowledge of classroom management, and knowledge of learners.

### ***Knowledge of the Subject Matter***

ET1 demonstrated a command of the subject matter by exploring areas such as the meaning of nouns, forms, and functions of nouns in context. The tutor's comprehensive knowledge aligned with the curriculum requirements and provided students with accurate information. ET1 also taught content sequentially.

### ***Identification of Cross-cutting Issues***

ET1 demonstrated some cross-cutting issues and the interconnectedness of language learning. ET1 related the topic to other English language topics. ET1 actively welcomed diversity of ideas by distributing questions across gender and space in the classroom. ET1 integrated the four language skills (listening, speaking, reading, and writing) and employed various means of communication, such as speaking, writing boldly on the board, and demanding responses.

These actions created an inclusive learning environment and encouraged students' active participation. ET1 also promoted professional values and attitudes by fostering a friendly and tension-free atmosphere, establishing order and responsibility within the classroom. ET1 demonstrated good classroom organisation by contributing to a conducive learning environment. ET1 incorporated ICT in the process of teaching.

### ***Differential Learning***

ET1 incorporated group work, pair work, individual work, presentations, and interactions to encourage differential learning. Thus, students wrote on the board, contributed to the discussion, and interacted with other students and the tutor. ET1 also allowed students to read from the board

and their phones, and encouraged students to analyse sentences on the board. ET1 integrated the four language skills, employed various teaching methods, and displayed effective classroom organisation and management.

### ***Employment of Assessment Procedures***

ET1 employed various assessment procedures, including pair work, individual work, and self-directed/formative assessment. These diverse assessment methods allowed the students to demonstrate their understanding and facilitated ongoing reflection on their learning progress.

### ***Language Used***

ET1 used the English language as a medium of instruction throughout the process.

### ***Conclusion***

ET1 generally displayed pedagogical and content knowledge and some cross-cutting issues throughout the observed lesson. The integration of PCK and cross-cutting issues suggested the promotion of differential learning.

### **Observation of ET2 (CoE 2)**

Despite the English Major class register indicating 43 students, only 38 were in the lecture room. The female students outnumbered the males in attendance. Also, though the lecture hall was spacious, the students were tightly packed as they sat. The lesson lasted 45 minutes. It commenced at 9:00 a.m. and ended at 9:45 a.m. The lecture hall was adequately equipped with infrastructure, including writing boards, projectors, sockets, lights, and sufficient tables and chairs.

## *Description of Lesson 2*

Topic: *Nouns*

### *Introduction Stage*

ET2 started the lesson by revising students' previous knowledge of a language's grammar and introducing them to the topic and rules in nouns. Although the tutor's introduction was not explicitly described as exciting and captivating, ET2 engaged students by presenting a sentence and prompting them to identify the parts of speech of individual words. This stage demonstrated the tutor's attempt to effectively bridge the learning gap and introduce the new topic. ET2 displayed pedagogical knowledge, knowledge of strategy and approach to teaching grammar (context-sentence), and cross-cutting issues (communication skills, drawing links in related topics).

### *Discussion/Explanation Stage*

The lesson was designed to develop students' understanding of the parts of speech, the meaning, forms, and functions of nouns. ET2 employed the verbal exposition and discussion methods to convey information on parts of speech, nouns, forms of nouns, and functions of nouns. By incorporating these activities, ET2 fostered active student engagement and facilitated comprehension of the grammatical concepts. ET2 acted as a facilitator in the teaching-learning process by guiding students to respond positively to concepts under discussion. ET2 displayed the integration of pedagogical knowledge, its sub-constructs (classroom management and organisation, knowledge of strategies, knowledge of assessment), and differential learning.

### ***Implementing Teaching Chronologically***

ET2 structured the lesson chronologically by addressing different components of grammar rules in a logical sequence. ET2 covered RPK on grammar, word classes, the definition of nouns, forms/structure of nouns, and functions of nouns in sentences. This sequential approach aimed to understand nouns and their grammar rules comprehensively.

### ***The Lesson Engaged Students***

It was observed that students actively contributed to discussions by providing examples of types of nouns during the lesson. ET2 engaged students by asking them to mention nouns, construct sentences and identify concepts like the type of nouns and the functions of nouns. ET2 constructed sentences on the board for students to identify noun types and their functions. These activities indicate some level of student involvement and application of knowledge. Under the tutor's instructions, students went online to search for information and shared it with their colleagues.

### ***The Lesson Focus and Direction***

Ideas from the students or ET2 determined the lesson's focus and direction. The students were provided with sentences to identify the parts of speech and the characteristics of word classes. The students also constructed sentences and identified nouns and their functions in context, suggesting some level of student-centredness and engagement.

### ***Encouraging Predictions and Discussion of Mistakes***

ET2 encouraged the students to make predictions and to engage in discussions. ET2 and colleagues reshaped the mistakes of some students, and the responses of the students were written on the chalkboard and analysed



based on the forms and functions of nouns. This approach promoted active thinking, error analysis, and reflection on students' learning. ET2 displayed knowledge of learners. ET2 integrated knowledge of learners, CK, knowledge of educational context and cross-cutting issues (core and transferable skills/communication skills).

### ***Handling of Students' Questions***

ET2 provided opportunities for the students to ask questions, and the tutor reshaped these questions to ensure clarity and understanding. ET2 demonstrated responsiveness to the students' questions by summarising the responses provided by students, indicating a commitment to addressing students' inquiries and promoting a supportive learning environment. ET2 responded responsibly to students' questions, regardless of the nature of questions. ET2's professionalism in addressing students' inquiries indicates a supportive and respectful learning environment.

At the discussion stage, ET2 displayed the integration of PK, CK and some cross-cutting issues.

### ***Knowledge of Pedagogy (PK)***

ET2 employed discussion and verbal exposition methods to achieve the set objectives. ET2 used the integrated approaches to teaching grammar (inductive and deductive approaches). However, the lesson needed to be more interactive to promote effective use of language. ET2 also utilised limited teaching resources (phone and chalkboard) and occasionally incorporated differentiated activities such as individual, group, and whole-class discussions. Therefore, it can be concluded that ET2 displayed PK and some sub-constructs, such as curriculum knowledge, knowledge of strategies (discussion

and verbal exposition methods), integrated methods of teaching grammar (inductive and deduction), knowledge of classroom management, and knowledge of learners.

### ***Knowledge of the Subject Matter***

ET2 demonstrated knowledge of the subject matter by exploring areas stated in the curriculum, such as the grammar of language, types/features of word classes, the meaning of nouns, forms of nouns, and functions of nouns in context. This understanding of the content aligned with the curriculum requirements. ET2 also taught content sequentially.

### ***Identification of Cross-cutting Issues***

ET2 moved back and forth on the topic by revising students' RPK on parts of speech. Integrating the four language skills and various means of communication, such as speaking, writing boldly on the board, and demanding responses, indicated some effort to create an inclusive learning environment. ET2 distributed questions evenly across the length and breadth of the classroom, considering gender as well. ET2 consistently upheld mutual respect between himself and the students by reinforcing classroom protocols and exhibiting effective classroom organisation and management skills.

The observation highlighted a friendly atmosphere and a good relationship between ET2 and the students, contributing to orderliness in the classroom environment. These actions created an inclusive learning environment and encouraged students' active participation. She also promoted professional values and attitudes, fostering a friendly and tension-free atmosphere by establishing order and responsibility within the classroom. ET2 incorporated ICT and reflection in the process of teaching.

### *Differential Learning*

ET2 integrated strategies to present information to students, including writing on the board, allowing students to read from the board and from their phones, and facilitating interactions. ET2 integrated the four language skills and employed various teaching methods, indicating an attempt to cater for individual differences in learning styles and preferences. Also, different activities, such as individual work, analysis of sentences on the board, and using their mobile phones to search for information, promote differential learning.

### *Employment of Assessment Procedures*

ET2 employed individual work to assess the students during the teaching process. However, the students were given topics to prepare and present in the next lesson. Overall, the observation also indicated a recap of the lesson to assess students' understanding of the sequence of the topics covered.

### *Language Used*

ET2 used the English language as a medium of instruction throughout the process.

To summarise, the evidence indicates that during the observed lesson, ET2 demonstrated certain pedagogical and content knowledge constructs and sub-constructs, and addressed some overarching issues. ET2 showed efforts to encourage prediction discussions and address students' questions. However, improving these areas could enhance student engagement, promote inclusive learning, and cater for individual differences. Additionally, a more consistent

and comprehensive approach to assessment could provide valuable feedback on student learning outcomes.

### **Observation of ET3 (CoE 3)**

Although the English Major class register indicated 51 students, 48 were present for the lesson. Although the lecture hall itself was spacious, the students were tightly packed and seated in close proximity to each other. The lesson lasted 60 minutes, and it commenced at 1:30 p.m. and ended at 2:30 p.m. The school and the lecture hall were well-equipped with essential infrastructure, including a writing board, a projector, sockets, lights, and enough tables and chairs.

#### ***Description of Lesson 3***

*Topic: Relative Clause*

#### ***Introduction Stage***

By reviewing the previous presentation on relative pronouns, ET3 showed a strong connection between previous skills and new skills. ET3 then introduced the topic and assigned a group to present on relative clauses. This approach aimed to bridge the learning gap and smoothly transition to the new topic. ET 3 displayed PK (knowledge of strategies and curriculum knowledge) and cross-cutting issues (drawing links between topics).

#### ***Discussion/Explanation Stage***

The lesson design focused on developing students' understanding of relative clauses, including their definition, identification, differentiation between restrictive and non-restrictive clauses, and explanation of their functions. The group presentation was the primary teaching strategy, supplemented by discussions and interactions.

### ***Implementing Teaching Chronologically***

ET3 structured the lesson chronologically by assigning the group to present on different aspects of relative clauses, including RPK on relative pronouns, identifying relative clauses, distinguishing between restrictive and non-restrictive clauses, and explaining their functions. This sequential approach aimed to provide a comprehensive understanding of relative clauses.

### ***The Lesson Engaged Students***

It was observed that each group member actively contributed to the discussion, and the students constructed their sentences and analysed them. While ET3 acted as a facilitator, the student engagement and involvement level varied as they took charge of the entire lesson (student-centred). ET3 sometimes comes in to brighten the discussion, clarify concepts, and keep all students engaged.

### ***The Lesson Focus and Direction***

Students were allowed to provide the sequence of the various parts of the lesson, indicating a degree of student-centredness and involvement in determining the focus and direction. They also constructed their sentences and identified types of relative clauses and their functions. ET3 and the group provided guidance and clarification to ensure the lesson progressed effectively.

### ***Encouraging Predictions and Discussion of Mistakes***

ET3 encouraged students to make predictions and engage in discussions. ET3 corrected students' mistakes, and the group provided explanations with illustrations. Effective classroom management and organisation were demonstrated, and ET3 addressed students' confusion

regarding the use of “wh” words as relative pronouns. ET3 displayed the knowledge of learners. ET3 integrated knowledge of learners, CK, knowledge of educational context, and cross-cutting issues (core and transferable skills/communication skills).

### ***Handling Questions***

Students were encouraged to ask questions, and the group members and ET3 responded promptly. Some questions were postponed to subsequent presentations if they were not directly related to the current topic, indicating a reasonable approach to addressing students’ inquiries. ET3 and the group members responded to students’ questions and provided inferences from previous presentations. ET3 also probed the group for further clarifications, demonstrating a commitment to addressing students’ questions effectively.

At the Discussion stage, there was the display of the integration of PK: knowledge of strategies (presentation and contextual approach to teaching grammar), curriculum knowledge, classroom management and organisation; CK; and cross-cutting issues (communication, core and transferable skills, use of ICT, professional values and attitudes, equity, gender, inclusivity).

### ***Knowledge of Pedagogy***

The teaching methods employed included group work, discussion, and presentation, allowing students to participate and engage with the content actively. Appropriate teaching resources, such as projectors and the chalkboard, were mentioned as “sometimes,” indicating some level of resource integration. Therefore, it can be concluded that ET3 displayed enough PK and sub-constructs such as curriculum knowledge, knowledge of strategies (verbal exposition, discussion and presentation methods) and

integrated methods of teaching grammar (inductive and deduction), knowledge of classroom management, and knowledge of learners. PK demonstrated in class is supported by the Experiential Learning Theory (Kolb, 1984).

### ***Knowledge of Subject Matter (Content)***

The group members demonstrated knowledge of the subject matter by exploring areas stated in the curriculum, such as explaining what a relative clause is, identifying relative clauses, distinguishing between restrictive and non-restrictive clauses, and explaining their functions. This understanding aligned with the specific learning objectives for the lesson. The lesson was sequentially presented. Students displayed curriculum knowledge, content knowledge, and general pedagogical knowledge.

### ***Handling of Students' Questions***

ET3 and the group members responded professionally to students' questions, making inferences from previous presentations and providing clarifications. The tutor's approach of postponing unrelated questions to subsequent presentations focuses on maintaining relevance and maximising students' understanding.

### ***Identification of Cross-cutting Issues***

The observation indicated that the class could contribute and ask questions regardless of gender or position. This approach encouraged diverse ideas and perspectives to be shared during the lesson.

### ***Equal Respect among the Teacher and the Students***

ET3 and the group members practised good classroom organisation and management, resulting in an orderly and responsible classroom

environment. The tutor's interactions with male and female students indicated an inclusive and respectful learning atmosphere.

### *Differential Learning*

ET3 used appropriate strategies to present information to students, including group work, presentation (problem-solving), and discussion. Integrating the four language skills and using teaching resources, such as the chalkboard and projector, aimed to cater to individual differences in learning styles and preferences. The tutor's integration of cross-cutting issues, such as relating the topic to other aspects of the English course, further enhanced the differential learning experience.

### *Employment of Assessment Procedures*

ET3 employed various assessment procedures, including group presentations, individual work, project work, and self-directed work. The observation provided specific criteria for assessing the group presentations, including appearance, fluency, content, reflection, self-study questions, and problem-solving (formative and summative).

### *Language Used*

ET3 used the English language as a medium of instruction throughout the process.

In conclusion, there is some evidence that ET3 demonstrated some pedagogical strategies and content knowledge during the observed lesson. The group presentation format encouraged student engagement and participation. In contrast, the tutor's facilitation role and responsiveness to students' questions contributed to a supportive learning environment that fostered students' understanding of relative clauses. Overall, ET3 demonstrated some



competence in delivering the lesson and creating a respectful classroom environment conducive to learning.

### **Observation of ET4 (CoE 3)**

Although the class register for the English Major indicated a total of 51 students, 46 students were present. Within the lecture room, there was a more significant number of females than males. Despite the spacious lecture hall, the students were tightly packed and sitting near one another. The lesson lasted for 1 hour, commencing at noon and concluding at 1:00 p.m. The school and the lecture hall were well-equipped with essential infrastructure, including a writing board, a projector, sockets, lights, and ample tables and chairs. Throughout the lesson, all ethical protocols were strictly adhered to.

#### ***Description of Lesson 4***

##### ***Topic: Types of Sentence (Structure)***

##### ***Introduction Stage***

ET4 effectively merged previous skills with new skills by using a question-and-answer technique to revise the previous lessons on conjunctions and types of conjunctions. ET4 also introduced the group to present on the topic of simple sentences and outlined the protocols for the presentation. ET4 displayed the integration of PK, CK, and cross-cutting issues.

##### ***Discussion/Explanation Stage***

The lesson was designed to develop students' understanding of simple sentence. The group presentation focused on explaining a simple sentence, identifying its elements/structure, constructing and analysing simple sentences, and discussing their uses. The teaching strategy involved group work, problem-solving, discussions, and interactions.

### ***Implementing Teaching Chronologically***

ET4 followed a chronological order in implementing the teaching by starting with the revision of conjunctions and types of conjunctions, followed by the definition of a simple sentence, explanation of its structure/elements, and construction and analysis of simple sentences.

### ***The Lesson Engaged Students***

It was observed that each member of the heterogeneous group actively presented different aspects of simple sentences. The students were also involved in constructing their sentences and identifying the structure and uses of simple sentences. The tutor's role as a facilitator and clarifier further indicates efforts to engage students in the learning process.

### ***The Lesson Focus and Direction***

ET4 encouraged interaction and discussion through post-presentation discussions with the tutor. Students were allowed to provide the sequence of various parts of the lesson, construct their sentences, and identify the structural type of the sentence. This demonstrates a degree of student-centredness and involvement in determining the focus and direction of the lesson.

### ***Encouraging Predictions and Discussion of Mistakes***

ET4 encouraged students to make predictions and reshape their mistakes with the help of the tutor and colleagues. Students' responses were written on the board and analysed according to the structure and elements of a simple sentence. This approach fostered active participation and allowed for clarification and further explanation. This indicates the knowledge of learners by the tutor. ET4 integrated knowledge of learners, CK, knowledge of

educational context, and cross-cutting issues (core and transferable skills/ communication skills).

### *Handling Questions*

Students were given the chance to ask questions during the lesson, and their questions were rephrased to help them get answers. This interactive approach facilitated students' understanding and addressed their inquiries. ET4 and the group members responded to students' questions responsibly and promptly. ET4 reconstructed questions to allow students to respond themselves or allow other students to provide answers. Also, the tutor intervened if the responses needed to be clarified, ensuring that students' questions received the necessary attention. At the Discussion stage, PK, CK, and cross-cutting issues were displayed.

### *Knowledge of Pedagogy*

The teaching methods included group work, discussions, interactive sessions, and problem-solving activities. Using teaching resources such as mobile phones, projectors, and the chalkboard fostered student-centred discussion.

Therefore, it can be concluded that ET4 displayed enough PK and sub-constructs such as curriculum knowledge, knowledge of strategies (discussion, verbal exposition and presentation methods) and integrated methods of teaching grammar (inductive and deduction), knowledge of classroom management, and knowledge of learners. However, the lesson could have used authentic materials to assess students' learning.

### ***Knowledge of Subject Matter***

The group members demonstrated knowledge of the subject matter by exploring areas stated in the curriculum, including the definition/explanation of simple sentences, their structure/elements, and their uses. This indicates competence in delivering the lesson's content supported by Experiential learning (Kolb, 1984).

### ***Handling Questions***

ET4 and the group members responded to students' questions responsibly. Presenters redirected them to the class for responses before providing additional clarification. This approach ensured that students' questions were addressed professionally and provided a supportive learning environment.

### ***Identification of Cross-cutting Issues***

ET4 and the group members demonstrated good classroom organisation and management, resulting in an orderly and responsible classroom environment. This indicates a respectful atmosphere that promotes effective teaching and learning. The group and ET4 distributed questions evenly across gender and space in the lecture hall, creating an inclusive learning environment that welcomed diverse ideas and perspectives. Other cross-cutting issues in the lesson included professional values and attitudes, core and transferable skills (leadership, communication), linking topics (previous lesson to new one), gender, inclusivity, and ICT.

### ***Differential Learning***

ET4 employed appropriate strategies to present information to students, including writing on the board, allowing students to read from the

board, using projectors, and integrating the four language skills. The mention of integrating cross-cutting issues, such as relating the topic to other aspects of the English course and counting words in a sentence as a mathematical concept, further enhanced the differential learning experience.

### ***Employment of Assessment Procedures***

ET4 employed various assessment procedures, including group presentations and individual work. Formative (project work for the next presentation and analysis of sentences) and summative (preparation for the next presentation) assessments were employed.

### ***Language Used***

ET4 used the English language as a medium of instruction throughout the process.

In conclusion, the observation points to ET4 demonstrating effective teaching strategies and content knowledge during the observed lesson. The group presentation format and interactive discussions fostered student engagement and understanding of simple sentences. The tutor's facilitation role, use of teaching resources, and responsiveness to students' questions contributed to a positive learning environment.

### **Observation of ET5 (CoE 2)**

Despite the English Major class register indicating a count of 43 students, only 33 students were present. The lecture room had a higher proportion of females than males. Although the lecture hall had ample space, the students were seated closely together, resulting in a crowded setting. The lesson was 1 hour, starting at noon and ending at 1:00 p.m. The school and lecture hall were well-equipped with necessary facilities, including a writing

board, a projector, electrical sockets, lights, and sufficient tables and chairs. Throughout the lesson, all ethical guidelines were strictly adhered to.

### *Description of Lesson 5*

#### *Topic: Subject-Verb Agreement*

##### *Introduction Stage*

ET5 revised the previous lesson through the use of sentence analysis and discussion. This helped bridge the learning gap and prepared students for the current lesson on concord (subject-verb agreement). ET5 displayed PK, CK, and cross-cutting issues.

##### *Discussion/Explanation Stage*

The lesson was designed to develop students' understanding of concord, specifically the basic rules. The teaching strategy involved a combination of discussion and verbal exposition methods, with ET5 using sentence analysis to identify subjects and verbs. ET5 used discussion and interactive methods to teach the rules of the language. The integrated approach to teaching grammar (inductive and deductive methods) was employed. Students were tasked to go online to look for the basic rules of concord and explain them. Through the question-and-answer technique, ET5 solicited responses from students. Students constructed sentences, identified the subject and verb, and corrected errors as necessary.

##### *Implementing Teaching Chronologically*

ET5 implemented chronological teaching of content by starting with constructing sentences and then analysing them for subject-verb, single subject-verb, definite pronouns as subject, collective nouns, and others. The basic rules of concord were discussed with students, and sentences were

constructed and analysed to identify the subjects and verbs based on the stated rules.

### ***The Lesson Engaged Students***

Students were actively involved in searching for information on the internet to contribute to discussions on concord. They also responded to questions and constructed their sentences to identify the subjects and verbs. This indicates a degree of student engagement and participation in the lesson.

### ***The Lesson Focus and Direction***

ET5 used an integrated approach to teaching grammar (inductive and deductive methods) to teach the concepts. Students searched for concord rules, stated them, and constructed sentences to explain rules. ET5 also constructed sentences for the students to analyse by identifying parts of a sentence (subject-verb). The students predicted subsequent rules of concord during the teaching process. This student-centred approach gave the students some control over the lesson's focus and direction.

The Discussion stage displayed PK, CK, and cross-cutting issues during the teaching process.

### ***Encouraging Predictions and Discussion of Mistakes***

ET5 encouraged students to make predictions about subsequent rules of concord. ET5 reshaped grammatical constructions in students' submissions to allow for self-correction. Students also corrected their colleagues' sentences with errors related to concord. This approach promoted active participation, reflection, and self-correction. This indicates the tutor's knowledge of learners. ET5 integrated knowledge of learners, CK, knowledge of educational

context, and cross-cutting issues (core and transferable skills/ communication skills).

### ***Handling Questions***

Students were given the chance to ask questions during the lesson. ET5 sometimes rephrased their questions for other students or ET5 to respond. This indicates a supportive environment where students feel comfortable seeking clarification. ET5 responded to students' questions responsibly, rephrasing and brightening students' questions for easy understanding. ET5 reshaped responses as necessary. This approach ensured that students' questions received their deserved attention and contributed to their learning experience. This is a display of PCK to cater for individual differences.

### ***Knowledge of Pedagogy***

The teaching methods employed included discussion, verbal exposition, and demonstration methods through chalkboard analysis. ET5 used teaching resources such as mobile phones for online searches and sentence analysis as strategies for teaching the concepts. Therefore, ET5 displayed enough PK and sub-constructs such as curriculum knowledge, knowledge of strategies (lecture and discussion methods) and integrated methods of teaching grammar (inductive and deduction), knowledge of classroom management, and knowledge of learners.

### ***Knowledge of the Subject Matter***

ET5 demonstrated knowledge of the subject matter by teaching the concepts sequentially, exploring the language rules online, and using students' examples to explain concepts. This indicates a strong understanding of concord and the ability to convey the information to students effectively.



### ***Handling Questions***

ET5 responded to students' questions responsibly, allowing them to respond to their colleagues' questions and reshaping them for easy understanding. This approach fostered a respectful and supportive learning environment. This caters for individual differences.

### ***Identification of Cross-cutting Issues***

ET5 allowed students to respond to tasks willingly and distributed questions across genders and the classroom space. This inclusive approach promoted diversity of ideas and perspectives.

### ***Equal Respect among the Teacher and the Students***

ET5 provided good classroom organisation and management, resulting in an orderly and responsible classroom environment. Students responded to questions by raising their hands, indicating a logical approach to class participation. This atmosphere of respect contributed to effective teaching and learning and good classroom organisation and management. This indicates the promotion of cross-cutting issues such as professional values and attitudes.

### ***Differential Learning***

ET5's integration strategies include discussion, verbal exposition, constructing and analysing sentences, and integrating language skills (listening, speaking, reading and writing) during the teaching and learning process. These activities promoted differential learning. Including reflection through journaling and self-reflection indicates an opportunity for students to review their learning experiences and identify areas for improvement.

### *Employment of Assessment Procedures*

ET5 employed various assessment procedures, including individual work (formative assessment) and homework (summative) to determine students' understanding.

### *Language Used*

ET5 used the English language as a medium of instruction throughout the process.

In conclusion, ET5, to some extent, demonstrated effective teaching strategies and content knowledge during the observed lesson. The combination of discussion, verbal exposition, demonstration methods, and the integration of cross-cutting issues make it conceivable that ET5 fostered student engagement and understanding of concord. The tutor's role as a facilitator and effective classroom management and organisation contributed to a positive learning experience.

### **Observation of ET6 (CoE 1)**

There were 53 students present although the class register had 61 students for English Major. There were more females than males in the lecture room. The lecture hall was spacious, but students were packed, sitting close to each other. The lesson took 45 minutes. The school and the lecture hall were resourced in terms of infrastructure; the lecture hall had a writing board, a projector, sockets, lights, and enough tables and chairs. The lesson started at 9:00 a.m. and ended at 9:45 a.m. All ethical protocols were observed.

### *Description of Lesson 6*

**Topic:** *Noun Phrase*

#### *Introduction Stage*

ET6 started the lesson by revising students' previous knowledge of word classes and phrases. Through questioning, students responded by explaining the concepts, word class, and phrases. ET6 then introduced the topic for the lesson, Noun Phrases and the Characteristics of Noun Phrases: Meaning of Noun Phrases, Forms, and Functions of Noun Phrases in Sentence/Context.

Here, it was observed that ET6 displayed the components of PCK adapted for the study. He revised students' RPK. ET6 employed question and answer technique and discussion methods to introduce the new topic, NP, and solicited students' responses. Also, ET6 designed and taught lessons chronologically: Noun Phrases, Forms of NP, and Functions of Noun Phrases to develop students' understanding of the various characteristics of the topic, Noun Phrase. These characteristics demonstrated by ET6 confirm Harmer's (1991) assertion that the tutor's chief task when teaching grammar is to show the student what the language means and how it is used, and must also show students what the grammatical form of the new language is and how it is said and written.

#### *Discussion / Explanation Stage*

The curriculum stresses the need to teach grammatical items in context because language is "context-sensitive", according to Thornbury (1999, p. 69). ET 6 presented characteristics using interesting and captivating illustrations and student-centred activities. ET6 used brainstorming, pairing, and individual

work to solicit students' contributions to noun phrases. Students used their mobile phones to search for meanings of concepts and constructed sentences to substantiate their understanding of definitions.

Also, ET 6 put examples of sentences on the chalkboard for students to identify elements of noun phrases and their functions. ET 6 employed both deductive and inductive techniques of teaching. At one point, ET6 stated the concepts and asked learners to give examples (deductive). At other point in the delivery, students constructed sentences and identified noun phrases and their functions (inductive). Students were made to read, identify structures, underline them and state their functions. ET6 employed strategies such as pair work, individual work, reading from the board, and analysing sentences on the chalkboard by students to cater to individual differences.

#### ***Knowledge of Pedagogy***

ET6 used various learning strategies such as verbal exposition, discussion, problem-solving methods through chalkboard analysis, and paired work. Therefore, ET6 displayed enough PK and sub-constructs such as curriculum knowledge, strategies and integrated methods of teaching grammar (inductive and deduction), classroom management knowledge, and learners' knowledge.

#### ***Knowledge of Subject Matter (Content)***

ET6 displayed knowledge of the subject matter. He taught chronologically. He also linked previous knowledge to new lessons.

#### ***Identification of Cross-cutting Issues***

ET6 distributed questions evenly to both genders and promoted effective classroom organisation and management, which are evidence of

professional attitudes and values, core and transferable skills, assessment strategies, action research, reflection, and ICT. ET6 employed strategies that allowed students to display their strengths and develop areas in which they were weakest. Thus, by engaging students in hands-on experiences and reflection, individual students can better connect theories and knowledge learned in the classroom to real-world situations.

### ***Handling Questions***

ET6 responded to students' questions responsibly, allowing them to respond to their colleagues' questions and reshaping them for easy understanding. This approach fostered a respectful and supportive learning environment. This catered for individual differences. ET6 integrated knowledge of learners, knowledge of educational context, and cross-cutting issues (core and transferable skills/ communication skills).

### ***Differential Learning***

ET6's integration strategies include discussion, lecture, constructing and analysing sentences, and integrating the language skills (listening, speaking, reading and writing) during the teaching and learning process. These activities promoted differential learning. Including reflection through journaling and self-reflection indicates an opportunity for students to review their learning experiences and identify areas for improvement.

### ***Employment of Assessment Procedures***

ET6 employed various assessment procedures, including individual work and chalkboard analysis (formative assessment). The types of assessment used in the lesson were not enough to cater for individual differences.

### *Language Used*

ET4 used the English language as a medium of instruction throughout the process.

In conclusion, ET6 demonstrated PCK constructs and some sub-constructs by effectively combining subject matter knowledge, curriculum understanding, pedagogical strategies, and consideration of learner needs. Incorporating cross-cutting issues and promoting differential learning highlight ET6's professionalism and commitment to creating a meaningful and engaging learning experience for the students.

### **Summary of Observation**

From the results, it could be inferred that the six English language tutors observed in the selected CoEs in Ghana used what is perceived as strong or sufficient PCK in grammar teaching. Also, sub-constructs include curriculum knowledge, knowledge of strategies (lecture and discussion methods), and integrated methods of teaching grammar (inductive and deduction), classroom management knowledge, and learners' knowledge. The tutors' teaching practices reflected a comprehensive understanding of subject matter – teaching topics chronologically.

Also, from the observations, in teaching nouns, ET1, ET2, and ET6 used the exact representations and activities. Therefore, the topic-specific strategies for teaching nouns/ noun phrases were verbal exposition and discussion. However, ET1 made the lesson interactive. ET3 used group work, discussion, verbal exposition, and presentation methods in teaching relative clauses. ET4 also used presentation, group work, verbal exposition, and discussion methods to teach the topic “Types of Sentences”. Based on what

ET3 and ET4 did, there is an indication that in teaching grammar at the clausal/sentence level, tutors employed these strategies. ET5 used demonstration, discussion and verbal exposition methods in teaching the topic, “Subject-verb Agreement”. All in all, these tutors integrated inductive and deductive approaches to teach grammar.

The tutors skilfully accommodated individual differences through differentiated instruction, contextual grammar instructions, and various assessment methods. Their excellent classroom management and integration of cross-cutting issues, such as communication skills, gender and inclusivity, helped to create a respectful and inclusive learning environment. Overall, the tutors demonstrated broad pedagogical knowledge and a dedication to providing meaningful and engaging learning experiences for their students.

### **Results of Interviews**

Based on the first three research questions, interview sessions were organised for the six tutors after the classroom observation. Key themes emerged that shed light on various aspects of PCK and its significance in English language teaching. These themes encompassed the understanding and demonstration of PCK, the perceived importance of PCK, pedagogical techniques such as the use of the question-and-answer method, equitable distribution of questions, awareness of cross-cutting issues, and the facilitation of differentiated learning experiences, among others.

### ***Tutors’ Understanding of PCK***

One of the essential elements in the interviews was the goal to investigate teachers’ understanding of PCK. When asked about their understanding of PCK, one respondent remarked:

*My understanding is that if you have content how do you deliver the content to the student? That is my understanding. You combine both content and methods to teach well. So if you have the content you must know how to deliver the contents too (ET6, Individual Interview).*

Similar to the assertions of ET6, another respondent, ET3, asserted good understanding of PCK. The tutor also mentioned two key terms mentioned by ET6. These key terms are content and methods. This is how the tutor put it:

*Pedagogy has to do with methods; what is the method you employ in teaching. So, if you are talking about pedagogical content knowledge, then, it is a mixture of the method and subject content (ET3, Individual Interview).*

Another tutor provided an inductive explanation of PCK by looking at the meaning of the individual words in the concept and joining them together to form a definition. In the words of this tutor:

*When I put the words one after the other, I know that pedagogy deals with methodology. How you teach? And the content deals with the actual thing that you are teaching. And the knowledge means that the idea you have about the subject that you are teaching. So, when I put the three together, then, it comes to mind that every teacher, when you are teaching, you have to have the methodology, then you also have to have the mind that you should have the content. That's when I interpret the words literally (ET5, Individual Interview).*



ET5's explanation aligns with Shulman's (1986, 1987) definition of what PCK is. This indicates that tutors had a fair understanding of PCK. This suggests that this tutor and the other tutors have a good grasp of what PCK entails according to established literature. It implies that these tutors are likely incorporating PCK principles into their teaching practices, which can contribute to more effective and meaningful learning experiences for students.

### ***Importance of PCK***

Aside understanding PCK, the tutors expressed their views about the importance of PCK. The role of PCK is to help teachers create meaningful and engaging learning experiences for their students (Shulman, 1986), and to enhance students' comprehension (Magnusson et al., 1999). One respondent remarked:

*Yes, that will also help the students to get the understanding of what you're teaching. So yeah (ET6, Individual Interview).*

Furthermore, an importance of PCK is its usefulness in making a lesson interesting and eliciting the participation of learners (Magnusson et al., 1999; Shulman, 1986). A respondent explained that:

*I am very mindful as to how to make the lesson very interesting and lively. You know that in the teaching of grammar, sometimes, it becomes boring for the learners, so I have to develop strategies as in the group work just to cater for the individual differences. I use questions too to elicit their points (ET1, Individual Interview).*

It is evident that there is an emphasis on PCK's role in creating meaningful and engaging learning experiences. This underscores the

importance of student-centred teaching approaches. English language tutors leverage PCK to design activities and lessons that actively involve students in the learning process, fostering higher levels of engagement and participation (Kidwell & Triyoko, 2012).

### ***Tutors' Display of PCK***

One notes from the interview that a number of methods were employed in the teaching of the grammatical concepts by the tutors. These methods include introduction of lessons in an interesting way, consideration of RPK, use of question-and-answer strategy, drawing of linkages between topics, assignment of tasks, roles and responsibilities, use of group work and presentations, and even distribution of questions. These methods explicitly demonstrate English tutors' integration of PCK constructs, such as pedagogical knowledge (e.g., curriculum Knowledge, knowledge of strategies, classroom management, etc.) and content knowledge (e.g., conceptual knowledge, pedagogical content knowledge, etc.) in the teaching of grammar.

The diverse range of teaching methods observed highlights the tutors' ability to adapt their pedagogical approaches based on the subject matter and students' needs. This flexibility in pedagogy is crucial for addressing different learning styles and promoting active engagement in the learning process (Darling-Hammond & Bransford, 2005). Moreover, the use of various teaching strategies, such as introduction of lessons in an interesting way, question-and-answer strategies, group work, and presentations, reflects the integration of PCK constructs. This integration encompasses pedagogical knowledge (e.g., curriculum knowledge, knowledge of strategies, classroom management) and

content knowledge (e.g., conceptual knowledge, pedagogical content knowledge), as outlined by Shulman's (1986) PCK framework.

### *Introduction of Lessons in an Interesting Way*

One of the methods used by teachers is the introduction of lessons in an interesting and captivating way. A tutor highlighted the importance of this particular strategy. The tutor asserted:

*It is important to introduce topics in an interesting way because grammar itself, as I said earlier, is very boring, so when you the teacher, you don't develop any strategy or techniques of handling them, it means that the student will not understand what you are teaching. They will not grasp the concept. That's why I keep mentioning the use of the pair method, that is think pair and share or you ask them to consult the net, the use group presentation so that they can learn from each other (ET1, Individual Interview).*

Another tutor gave a similar view on the introduction of lessons in an interesting way. This respondent explained:

*Introducing a topic in an interesting way catches their attention to the lesson. So, that they know that, for example, what they are about to learn is something that they need. It's a way of interest. So, I need to pay attention. So, it's very good to give an interesting introduction (ET2, Individual Interview).*

These statements from these tutors from different schools show the importance of introducing a topic in a captivating way.

### *Consideration of RPK*

As tutors introduce new topics to students, they also consider the relevant previous knowledge of the students. When asked about the relevance of this practice, all respondents indicated that they consider the relevant previous knowledge (RPK) of learners. Some tutors explained how they elicit the RPK of their students. One tutor remarked that:

*I take their RPK into account because for teaching to become more effective, there is a need for the teacher to build on the existing knowledge of what students know. They already know something, so you have to trigger it before you introduce them to the actual topic (ET1, Individual Interview).*

A tutor shares similar views by ET1. The tutor stated clearly that every learner has some knowledge that can be built upon. These are the words of this tutor:

*In education, it is said that no child is a tabular rasa. So every child has something, so it is important that we begin from what they know to where they don't know (ET4, Individual Interview).*

Deliberately eliciting RPK from students enables tutors to identify misconceptions or gaps in understanding. Addressing these gaps early on promotes deeper conceptual understanding and prevents cognitive conflicts that can hinder learning progress (Vygotsky, 1978). With respect to eliciting the RPK of the learners so that it informs teachers on how to approach new topics, some respondents indicated that they used the question-and-answer technique. This issue is discussed next.

### *Use of Questions and Answers*

One of the techniques that was prevalent was the use of the question-and-answer technique. The tutors employed this technique to elicit students' RPK. One tutor remarked that she uses questions and answers to ascertain what her students already know before introducing a new topic. This is how she put it:

*Question and answer are one, and then as I said, sometimes, before you come to the main thing you are doing for the day, you can give them a whole passage on what you did before. So, it's like exercise (ET3, Individual Interview).*

The question-and-answer technique was used to ascertain students' RPK. Aside this, the technique was used to ensure that students understood the lessons on grammatical concepts they were taught in class. With regards to this strategy, one respondent asserted:

*I try to use questions and answers to find out what they know about the lesson or nouns before we go to noun phrases (ET6, Individual Interview).*

Also, the question-and-answer strategy was used to introduce topics during grammar lessons. ET4 indicated that, "Sometimes I use the break, question and answer and brainstorming to introduce a topic."

### *Distribution of Questions*

Closely related to the use of questions and answers is the distribution of questions or how questions are distributed in the classroom since this has an effect on the teaching and learning process. This important domain was therefore explored to understand how the tutors distributed their questions

during lessons in the COES. One tutor explained why he distributes questions evenly among students:

*The class is mixed class of both genders, so I try to give questions to both genders. Then, also, those in front, middle and then at the back of the class (ET6, Individual Interview)*

This assertion by the tutor was also evident in the lesson observed. The tutor did his best to ask both males and females questions. In addition, the tutor made sure that students sitting at the various locations of the classroom (those in front, at the centre/ middle and at the back) answered questions.

Another tutor explains the distribution of questions evenly, and the approach used in distributing the questions. The tutor explained:

*Please, when I go to class, for every student to take active part, I ask question for those who are at the back, those who are in front, the girls and the gentleman, as in the male and the female, they answer questions. I evenly distribute my questions for them to list the points they have (ET3, Individual Interview)*

ET3 stated that the reason for distributing questions evenly is to make sure that everyone in class takes active part in the teaching and learning process. ET3 is also mindful of gender when distributing the questions.

In addition to this, a tutor goes beyond gender and even considers ethnicity and religion of students. This tutor narrated:

*I look at the gender balance. So, I don't distribute questions for only males or only females. I also look at ethnicity, or religious background. Sometimes, when I ask a question, whoever is*

*ready to answer I call the person without looking at their ethnicity or any other thing (ET5, Individual Interview).*

This statement above indicates that ET6 is aware of cross-cutting issues like gender and inclusivity and, therefore, introduces it during the teaching process. Introducing cross-cutting issues like gender and inclusivity during teaching demonstrates a commitment to creating an inclusive and equitable learning environment. Tutors who are mindful of diverse perspectives and experiences contribute to a classroom culture that values diversity, respect, and equal opportunities for all students (Gay, 2010).

#### ***Assigning Tasks and Roles to Promote Interactions***

Furthermore, tutors indicated that they assigned tasks and roles to encourage interactions among students during teaching. One tutor narrated how he does that when he is teaching grammar:

*You want the learners to participate, so you assign them roles that would allow them to come out with their views to help them understand the lessons better. I asked students to provide their own examples and to tell us why their examples are correct (ET5, Individual Interview).*

Another tutor described the art of assigning tasks and roles to promote interactions. This is what the tutor had to say concerning this subject:

*Exactly. So, that is the main thing. I do so. You give them a task for them to perform and then there's always an interaction. So, those who are silent and don't want to talk, you are forced to talk. So, sometimes, when it is group work, I ask a group to present. Sometimes, I ask all the members to come forward. And then after, one person presents. In order for them to interact, I also ask them, the individual, questions. So*

*in a group of ten members, after one person has presented, all the nine others must speak. You talk. You interact. Because I'll ask you questions. I'll give you marks (ET6, Individual Interview).*

This means that ET6 assess students' formatively as they participate in roles and responsibilities during the teaching process.

Another tutor explains how the assignment of roles and responsibilities was utilized to promote interactions in the grammar class. The tutor explained that he gives sentences, and tasks the class to provide similar sentences with the same structure. This is how the tutor puts it:

*Sometimes, I give eh... a basic task; that is an exercise.*

*Sometimes, you ask them to give illustrations. That is to model the structure, and sometimes too, they should just play with it even though it is a structure. They will play with it in a form of a game. So that, they can play with it, and by the time they play with it, they have finished getting the structure (ET4, Individual Interview).*

There is no doubt that interactions among students during tasks and role assignments contribute to a deeper understanding of the subject matter. Students learn from each other's insights, clarify concepts, and develop a more comprehensive grasp of the material (Slavin, 1995).

#### ***Use of Group Work***

In addition to the methods discussed, tutors also revealed that they put students into groups in order to share ideas. As a result, weak students can be helped by good students. This is how the tutor put it:



*I make them sit in groups, and then, they share ideas, and then they come out with their answers. I realise that, at times, not all of them understand what I am teaching, so they can learn from others. Then, sometimes, when they are going online to search for information, some also don't have smartphones to catch up with the information. So, when you put them together in groups, they benefit from each other (ET6, Individual Interview).*

This statement is indeed true. During the observation of ET6's lesson, ET6 instructed the students to go online with their smartphones and search for some information on noun phrases.

The significance of using group work was also explained by another tutor. This tutor highlighted when to use group work. ET4 explained the use of group work to build the confidence of some students who may not be bold enough to speak in public. ET4 explained:

*So ehmm, for group work, I use group work a lot, especially when I don't have a very large class. So, I can put some structures, and ask them to look at it and come up with their views when they present. You can give them like 30 minutes for them to work on it, but if the class is big for that group work, they will go and do it as an assignment. So, I know the group is individual based so sometimes I want them to gather some confidence especially for those who are shy (ET6, Individual Interview).*

A tutor explains how the use of group work can be viewed as student-centred activity. ET2 explained how she is mindful of the fact that the teaching and learning process should not always be teacher centred. This is how she put it:

*When I go to class, I have both teacher-led activities and student-led activities. So, once in a while, within a lesson, they do group work or pair work to share their ideas (ET2, Individual Interview).*

These tutors, through the interview sessions, have revealed their knowledge and use of pedagogical knowledge (PK) in teaching grammar. According to Shulman (1986), PK is the understanding and expertise teachers possess in relation to the principles, strategies, and practices of teaching and learning. Grossman (1990) defines the multifaceted nature of PK, including knowledge of curriculum, knowledge of learners, instructional strategies, assessment practices and classroom management that the use of group work in the classroom helps all students to participate in the teaching and learning process.

Also, the tutors demonstrated their knowledge of having thorough comprehension and expertise in the teaching of grammar. They stated the theories of teaching grammar to include functional theory, contextual theory, and grammar-translation approach. Also, they listed topics under the grammar section of the curriculum and explained how they taught them. The implication is that the tutors possess a deep understanding and expertise in teaching grammar, as evidenced by their knowledge of different teaching theories related to grammar instruction. Specifically, their mention of functional theory, contextual theory, and the grammar-translation approach

indicates a comprehensive grasp of various pedagogical approaches to teaching grammar. This suggests that the tutors are well-equipped to employ diverse teaching strategies and methods tailored to different learning contexts and student needs.

### ***Knowledge of Cross-cutting Issues***

The NTECF encourages the incorporation of cross-cutting issues into the teaching and learning process. Tutors presented their views on these cross-cutting issues, namely, cross-cutting issues that impact language learning and instructions, professional attitudes and values; core and transferable skills, assessment strategies, action research, reflection, and ICT. However, tutors were knowledgeable of some of these issues and, therefore, implemented them. These were their responses to what cross-cutting issues are. One respondent said:

*At least I know of gender, inclusivity, with respect to gender when you are teaching you cater for both genders. Then also, when there are people who are challenged in the classroom, you make sure that they all take part... they become active members so that they all take part in the lesson. (ET6, Individual Interview)*

A tutor displayed in-depth knowledge of the cross-cutting issues. The tutor explained how cross-cutting issues are incorporated into the teaching and learning process. This ET1 narrated that:

*I'm so much aware of the cross-cutting issues. We have inclusivity, we have transferable skills, assessment strategies and professional attitude. For example, with professional*

*attitude, this talks about things that you the teacher will do for the learners to love and see the importance of teaching as a profession. One, you don't go to class without preparing as a teacher. Two, you go to class as a role model. Whatever you are teaching you have to teach it well for the learners to understand. Three, as a professional, your dressing, and the way you present yourself, you have to be punctual. All these things they are learning from you. We have what you call the transferrable skills. This is where the student learn communication skills and leadership skills. When you ask them questions the way they speak the way they pronounce the word. This will help them to communicate their thoughts for standard of communication skills. Then the leadership also, how they should be able or be bold to speak in public. You can you talk about the assessment strategies that move around. Please you don't go to class all the time, and you give them exercises only at the end of the term before they do work. Every time you go to class, we have what you call assessment as, assessment for, and assessment of. You the teacher, you take them through all. You record, you give feedback of whatever you are assessing (ET1, Individual Interview).*

Another tutor, just like the first tutor (ET6), admits that she only knows about gender and inclusivity. According to ET3, “I know inclusivity and gender. I know these two when it comes to cross-cutting issues”. Also, ET5, just like ET1, mentioned a number of the cross-cutting issues. However,

unlike ET1, this tutor did not go on to explain what these cross-cutting issues mean, and how they could be seen in the classroom. ET5 mentions that “We have gender, equity and inclusivity, professional attitudes and values, computer literacy.”

The implication of this results is that the tutors have profound comprehension and awareness of cross-cutting issues, encompassing crucial aspects such as inclusivity, gender considerations, and proficiency in computer literacy. This signifies a holistic approach to teaching that integrates these significant dimensions into their pedagogical strategies and classroom practices. By demonstrating a deep understanding of inclusivity, the tutors create an environment that embraces diversity and ensures equitable learning opportunities for all students. Their awareness of gender dynamics enables them to foster an inclusive and supportive atmosphere where every student feels valued and respected, irrespective of gender identity.

#### ***Importance of Incorporating Cross-cutting Issues***

Tutors were then asked about the importance of the cross-cutting issues they were incorporating during their lessons. One teacher explained:

*It will help to address peoples' misconception that may be grammar is difficult or may be grammar is for men or a thing like that. Then also, when you involve both sexes it encourages them to know that yes, we can all do it. If there's a person who has a challenge, may be physically or whatever, and the person is also catered for. It also boosts the person's confidence to all get involved in it. I think it helps (ET6, Individual Interview).*

This statement by this tutor underscores the importance of cross-cutting issues in the teaching of grammar.

Furthermore, the tutors gave some of the importance of the cross-cutting issues when the full list of the cross-cutting issues were disclosed to them. One tutor who commented on a number of the cross-cutting issues and their importance explained that:

*The people we are training are also going to teach as we're also teaching and the level they are going to teach will not be the same as we're teaching now so it is important to cater for the professional attitudes and values for them to know how to handle the young ones when they are also in the classrooms (ET2, Individual Interview).*

This respondent further added that:

*We're in to teach so the teaching also goes in with certain basic attitudes like you comport yourself, you don't insult them. For example, you come to class on time and things like that. You incorporate these things and then you explain to them that this is the importance of the work we're doing and gradually they also become equipped with such things and when they go out there and they also inculcate it in the young ones (ET2, Individual Interview).*

Therefore, the interview sessions revealed that tutors are familiar with gender, inclusivity, and ICT. This implies that the tutors have a deep understanding and consciousness of overarching issues, which include important elements such as inclusivity, gender sensitivity, and ICT. This represents a comprehensive teaching approach that incorporates these important aspects into their teaching methods and classroom activities. By

showing a profound grasp of inclusivity, the tutors establish a setting that welcomes diversity and guarantees equal learning opportunities for all students. Their cognizance of gender issues allows them to cultivate an inclusive and encouraging environment where every student feels appreciated and respected, regardless of their gender identity. Furthermore, their expertise in ICT means that they are ready to help their students with 21<sup>st</sup> Century skills.

### *Drawing of Links between Topics*

The tutors explained how they incorporate cross-cutting issues in grammar lessons to impact language learning and instructions across topics in English language and other disciplines. Another strategy employed in the teaching of grammatical concepts at the CoEs was explained by another respondent. This tutor narrates that:

*Ehhn... Once a while, I draw a link between topics. If you're to teach something and you realise that there is a topic or whatever that will help the understanding of that topic... at times, you make references to it before you come back to the actual topic (ET6, Individual Interview).*

Based on the comment by the tutor, it can be inferred that it is beneficial for students if their tutors are able to draw links between current and previous topics.

Another tutor stated how he draws links between topics, not just in the same educational level, but even across different educational levels (topics in SHS and those at the colleges of education). When asked about whether he draws links between topics, this is what the tutor said:

*I draw links. One thing that I have learnt is that, students will think things are new at all times. But things are linked together, so something that they learned in secondary school, they are learning more of it here. It is not something that is so different, so that one, I always draw their attention to link it to other knowledge. You know, sometimes, if it becomes necessary to link to a Ghanaian language, I do it, so that it will help them to appreciate better because sometimes, they understand it in the Ghanaian language. Because they use the same thing in the Ghanaian language, when they are learning it in English, it seems as if it is not something new. But then I say “you say this in the Ghanaian language” so yeah it helps them (ET4, Individual Interview).*

The importance of drawing linkages between different topics is further explained by a tutor. In the tutor’s opinion, it helps in the understanding of the grammatical concepts as it links topics in English language studies and other disciplines. This is what the tutor said:

*I draw a link between topics so that if it is something they know already, you can chip in that, and it reminds them and it builds upon what they know already to give them a better understanding of what they are learning (ET2, Individual Interview).*

The assertions of these tutors indicate that drawing linkages between old topics and current topics helps students to understand the grammar concepts that they are taught. Linking old and new topics aids in long-term



retention of knowledge. When students understand how old and new topics relate, they can apply grammar concepts more effectively in real-world situations. They can transfer their knowledge across different contexts, demonstrating mastery and practical application (Perkins & Salomon, 1992).

### ***Cross-cutting Issues and Differential Learning***

As part of this study, there was an investigation of how the incorporation of cross-cutting issues through PCK in teaching grammar promotes (encourages) differential learning among students. However, the findings from the interview revealed that even though the tutors knew some of the cross-cutting issues, only a few of them understood how they promote differential learning in the classroom. Tutors used differentiated activities to cater for differential learning. One tutor remarked that:

*At times, you realise that when you're teaching them, some students will understand what you're teaching them. Some too will be confused. The questions they will be asking you... you realise that they have a challenge. You have to take your time and explain to that student to know that though this is possible this and that are also possible. So yes, we concentrate on them directly. At times, we do think-pair-share with them. At times too, snowballing. At times too, we put them in groups so that those who don't understand will contact those who understand (ET6, Individual Interview).*

A tutor explained how the incorporation of cross-cutting issues through the use of PCK:

*In order to cater for individual differences, they use pair work where they share ideas. They also use group work and even the individual student, when I ask them questions, because some of them they are fast and others are not too fast like that, so when you are able to answer, I identify how different you are, and your friends learn, so I use three: pair work, group work and individual students (ET1, Individual Interview).*

Another tutor explained how he uses group work to cater for differential learning. The tutor explained that:

*That's why I normally prefer the group work because when you group the student, you group them based on different abilities. You don't put all the intelligent ones together and those who are not in another group. So you put all the different, different, ability groups together. Well, normally, when I'm about to group them, I look at gender. So I don't put all males at one side and all the females at the other side. So in grouping, and even the sitting arrangement, I make sure it is not gender bias (ET5, Individual Interview).*

Based on the explanations of these tutors, it is clear that tutors cater for individual differences through multiple assessments (Hall et al., 2003) and the use of multimodal teaching approaches (Kurzweil, 2001). They also promote equity, gender, and inclusivity (Francis, 2020; Kimmel & Aronson, 2021; Lee & Park, 2021) and, sometimes, professional values and attitudes (NTECF, 2017), as stated by ET1.

### **Conclusion of Interview Sessions with Tutors**

From the results, the English language tutors in CoEs integrated PCK constructs and sub-constructs when teaching grammatical concepts in the classroom. The tutors also knew of some cross-cutting issues (gender, inclusivity). The tutors mainly use group work, individualised response, and formative assessment to combine cross-cutting issues and PCK with respect to the promotion of differential learning among students. Therefore, the interview sessions with the six English language tutors provided an opportunity to delve deeply into tutors' experiences, perspectives, and opinions on pedagogical knowledge and content knowledge and their sub-constructs, which may not be displayed during the observation sessions (Creswell, 2013; Shenton, 2004). Also, through probing questions, cognitive structures and reasoning patterns underlying the development of PCK at the CoEs in Ghana are revealed (Grossman, 1990).

### **PCK of Tutors and Student's Understanding of Grammatical Concepts**

Teachers play a critical role in facilitating students' understanding of grammar, and their pedagogical content knowledge (PCK) significantly impacts the quality of instruction and the learning outcomes of their students (Jung et al., 2011; Shulman, 1986, 1987). Furthermore, investigating the potential relationship between students' understanding of grammatical concepts can provide valuable insights into instructional strategies that address the needs of diverse learners. This section focuses on the effects of tutors' PCK on students' understanding of grammatical concepts. Thus, in this section, there is an investigation of the impact of teachers' PCK, including integrating subject matter knowledge with pedagogical knowledge, on

students' grammatical concept comprehension. The demographics of the students, as well as the descriptive statistics of key concepts, are discussed. A presentation of the results on the only hypothesis for the thesis follows this.

### *Assumptions for Factor Analysis*

Sampling adequacy is one of the essential assumptions or criteria that must be met before conducting factor analysis. Thus, the sample should have adequate variance in the variables being analysed. This can be assessed using measures such as the Kaiser-Meyer-Olkin (KMO) test or Bartlett's test of sphericity. Generally speaking, the KMO value should be more than 0.6, and Bartlett's test values should also be significant (that is, less than 0.05). The table below shows that KMO's value is 0.905, which is greater than 0.6, and Bartlett's test is also significant. This means that the factor analysis can be carried out.

**Table 20: KMO and Bartlett's Test**  
**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		<b>.905</b>
Bartlett's Test of Sphericity	Approx. Chi-Square	<b>2678.253</b>
	Df	<b>300</b>
	Sig.	<b>.000</b>

Source: Field data, 2023

Another assumption of factor analysis is adequate correlation matrix. Thus, the correlation matrix should be suitable for factor analysis. In other words, the correlation matrix should be positively definite, meaning that all the eigenvalues are positive. From the scree plot below, it is evident that all eigenvalues are positive.

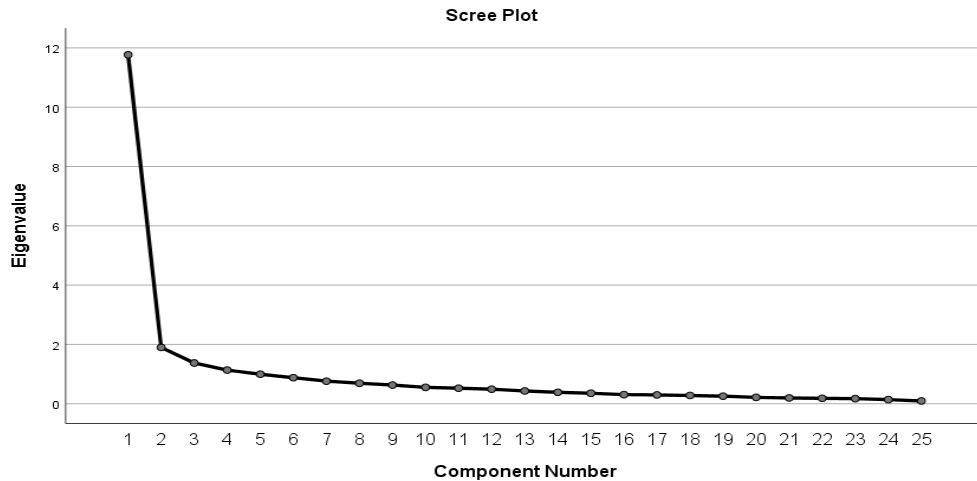


Figure 6: Scree plot showing eigen values greater than one (1)

Furthermore, the total variance explained by the number of components obtained should be more than 60%. The results shows that there were four components explained and they accounted for about 64% of the total variance in the data. Finally, the factor loadings in the rotation matrix should be more than 0.5. The results from Table 20 indicates that the factor loadings are more than 0.5.

**Table 21: Rotated Component Matrix**

Rotated Component Matrix <sup>a</sup>	Component			
	1	2	3	4
Tutor welcomes diversity of ideas from students	.777			
Tutor closes teaching by keeping students on task	.763			
Tutor handles students' question in a professional way	.758			
Tutor always gives feedback to students on their classwork, homework and class tests	.702			
Tutor reflects and summarizes his/ her teaching	.678			
Tutor has several ways of assessing students' understanding of content	.643			
Tutor distributes questions evenly to students	.602			
The design of tutor's lessons incorporates tasks, roles and interactions		.699		
Tutor takes into account prior knowledge of students		.677		
Tutors presents interesting and captivating introduction		.647		
Tutor encourages students to talk and share ideas		.645		
Tutor's questioning methods are likely to enhance the development of student's conceptual understanding		.607		
Tutor implements teaching based on provided time allotment		.578		
Tutor encourages students to ask questions during English Grammar Lessons		.529		
Tutor effectively integrates the content and method of teaching a topic and the characteristics of learners			.722	
Tutor displays expectation of possible difficulties students may face during instruction and address them			.690	
Tutor explains things carefully to students to help you avoid mistakes			.638	
Tutor makes sure the pace of the lesson was appropriate for the developmental level/needs of the students and the purpose of the lesson			.615	
Tutor represents and formulates the English grammar content that make it comprehensible to others			.545	
Tutor provides adequate time and structure for reflection			.523	
Tutor uses diverse approach				
Tutor involves students in using teaching resources				.846
Tutor uses appropriate teaching resources and differentiated activities to cater for students' differences				.619
Tutor uses appropriate teaching resources			.513	.604
Tutor asks students to work in pairs or small group	.540			.553

**Extraction Method: Principal Component Analysis.**

**Rotation Method: Varimax with Kaiser Normalisation.**

**a. Rotation converged in 11 iterations.**

Source: Field data, 2023

From Table 21, it is evident that these items load into one component: Tutor welcomes diversity of ideas from students, tutor closes teaching by keeping students on task, tutor professionally handles students' questions, tutor always gives feedback to students on their classwork, homework and class tests, tutor reflects and summarises his/ her teaching, tutor has several ways of assessing students' understanding of content and tutor distributes questions evenly to students (Grossman & McDonald, 2008; Smith, 2020). As such, these items can be described summarily as Effective Teaching Practices.

Moreover, these items load into the second component: The design of the tutor's lessons incorporates tasks, roles and interactions. This means that the tutor takes into account the prior knowledge of students, tutors present interesting and captivating introduction, tutor encourages students to talk and share ideas, tutor's questioning methods are likely to enhance the development of students' conceptual understanding, tutor implements teaching based on provided time allotment, and tutor encourages students to ask questions during English grammar lessons (Hattie & Timperley, 2007). These can be described as Student-Centred Teaching Practices.

Furthermore, the third component or factor has these items for measuring PCK: The tutor effectively integrates the content and method of teaching a topic and the characteristics of learners, the tutor displays expectation of possible difficulties students may face during instruction and addresses them, tutor explains things carefully to students to help avoid mistakes, tutor makes sure the pace of the lesson is appropriate for the developmental level/needs of the students and the purpose of the lesson, tutor represents and formulates English grammar content that makes it

comprehensible to others, and finally, tutor provides adequate time and structure for reflection (Larsen-Freeman, 2000; NTECF, 2017; Shulman, 1986; Vygotsky,1978). These can be described as Adaptive Teaching Practices.

Finally, the fourth component obtained from the factor analysis has these items: the tutor's engaging students in utilizing teaching resources; the tutor's using suitable teaching resources and varied activities to cater to students' individual differences; the tutor's applying appropriate teaching resources; and the tutor's making students work in pairs or small groups (Hattie, 2009; Mishra & Koehler, 2006; Tomlinson, 2001; Vygotsky, 1978). These can be described as Varied Instructional Strategies.

#### ***Factor Analysis Summary Results and Interpretation***

From Table 22, it is evident that four factors were extracted from the 25 items of the construct, pedagogical content knowledge. Table 22 indicates the four factors that can affect students' understanding of grammatical concepts. These four factors summarise the number of items that fell under each component.

**Table 22: Factors that can affect students' understanding of grammatical concepts**

No.	Factor	Eigen Value	Percentage of Variance	Cumulative Percentage of Variance
1	Effective Teaching Practices	11.767	47.067	20.137
2	Student Centred Teaching Practices	1.898	7.590	37.203
3	Adaptive Teaching Practices	1.373	5.494	53.211
4	Varied Instructional Strategies	1.135	4.538	64.690

Table 22 shows the results of a factor analysis, which identifies underlying factors or constructs in a set of variables. The table contains the



four factors, along with their corresponding eigenvalues, percentage of variance, and cumulative percentage of variance. The first factor, Effective Teaching Practice, has the highest eigenvalue of 11.767, accounting for 47.067% of the total variance in the data. This suggests that this factor explains a significant amount of the variation in the original variables and is an important construct in the data. The second factor, Student Centred Teaching Practices, has an eigenvalue of 1.898, accounting for 7.590% of the total variance. While this factor has a lower eigenvalue than the first factor, it still explains a notable amount of the variation in the original variables. The third factor, Adaptive Teaching Practices, has an eigenvalue of 1.373, accounting for 5.494% of the total variance. This factor explains a smaller amount of variance than the first two factors but is still a meaningful construct in the data. The fourth factor, Varied Instructional Strategies, has an eigenvalue of 1.135, accounting for 4.538% of the total variance. This factor explains the least amount of variance among the four factors but is still a significant construct in the data.

In terms of the cumulative percentage of variance, the first factor accounts for 47.067% of the variance, while the second, third, and fourth factors account for 37.203%, 53.211%, and 64.690%, respectively. These scores suggest that the first factor is the most important factor in the data, followed by the third, second, and fourth factors. Overall, the table provides a useful summary of the results of the factor analysis, highlighting the key factors or constructs that underlie the set of variables.

## Hypotheses Testing

**Hypothesis 1: There is a strong relationship between English educators PCK and teacher trainees understanding of grammatical concepts.**

The only hypothesis of this study relates to the statistical relationship between English tutors PCK and teacher trainees understanding of grammatical concept. As a result, the Pearson Correlation was resorted to in testing this statistical relationship. The factor analysis from the 25 items that sought to measure PCK revealed that four main factors that affect understanding of grammatical concepts include effective teaching practices, student-centred teaching practices, adaptive teaching practices, and varied instructional teaching strategies. These four variables were then computed into a composite variable by taking their average. This new variable was then correlated with students' understanding of grammatical concepts. Students' understanding of grammatical concept is also a composite variable which was obtained by calculating the average of the test scores obtained by students as well as their ability to explain some of their answers. The results of the correlation is captured in Table 23.

**Table 23: Correlation analysis between English Language Tutors PCK and students' understanding of grammatical concepts**

<i>Statistic</i>	<i>Variable</i>	<i>Correlation Coefficient(r)</i>	<i>P-Value</i>
Pearson	Tutor PCK vs. student understanding of Grammatical concept	0.070	0.390

Source: Field data, 2023

The results recorded in Table 23 shows that the correlation coefficient between the tutors' PCK and the students' understanding of grammatical concepts as obtained from the test is 0.070. This indicates that there is a weak

positive correlation between the two variables. Also, the probability value (P-value) for this correlation obtained is 0.390, which is more than 0.05 significant level; hence, the null hypothesis is not rejected. It can, therefore, be concluded that, there is no significant relationship between English language tutors' PCK and teacher trainees' total understanding of grammatical concepts.

### **Discussion of Results**

#### **Research Question 1: PCK English Language Tutors Use in Teaching Grammar**

The first research question sought to explore the pedagogical content knowledge that English language tutors show in teaching grammar in the selected CoEs Ghana. To respond to this question, tutors were observed and interviewed. These data were transcribed and analysed using thematic analysis.

From the results, the English language tutors thoroughly understood the curriculum requirements for grammar instruction. This understanding is a critical component of PCK because it involves teachers' ability to grasp subject matter content and the specific learning objectives outlined in the curriculum (Shulman, 1986). The tutors demonstrated their ability to translate the curriculum into meaningful and relevant instructional practises by aligning their lessons with the prescribed topics and objectives.

Also, the tutors demonstrated their ability to engage students in learning by using various teaching strategies and integrated methods. Effective PCK and the use of various instructional techniques promote students' needs and meaningful learning experiences (Darling-Hammond & Bransford, 2005). Adopting different learning preferences and cognitive styles, such as verbal

exposition, discussion, group work, and problem-solving activities, fosters active participation and improves students' comprehension and retention of grammar concepts.

Furthermore, the tutors expertly blended inductive and deductive techniques in their instruction. The incorporation of these methods is regarded as essential in language teaching because it allows students to learn grammar rules through both explicit explanations (deductive) and practical language usage (inductive) (Ellis, 1993; Grossman & McDonald, 2008; Larsen-Freeman, 2000; Thornbury, 2005). This balanced approach allows students to understand better grammar principles and how to use these approaches in different situations.

The results also revealed that the tutors embraced differentiation and individualisation in their teaching practices. The ability to cater to various learning styles and preferences is a hallmark of effective pedagogy, and it is essential in language education due to the wide range of students' language backgrounds and abilities (Darling-Hammond & Bransford, 2005). The tutors ensured that each student could engage with the material in a way that suited their learning needs by using various instructional methods such as group work, pair work, and individual tasks.

The tutors' assessment strategies were another notable aspect of their instructional practices. Assessment is an essential component of PCK because it allows teachers to track students' progress, provide timely feedback, and make informed instructional decisions (Shulman, 1986). The tutors used individual work, chalkboard analysis, discussions, homework assignments, and group presentations in this study as formative and summative assessment

methods. This varied assessment approach not only assessed students' understanding as well as progress but also provided useful feedback for future instructional planning.

Finally, the results highlighted the tutors' effective classroom management and integration of cross-cutting issues. A positive and welcoming learning environment is essential for effective teaching and learning (Grossman & McDonald, 2008). The tutors maintained a respectful and supportive classroom environment, encouraging student participation and responsibly answering their questions. Furthermore, the incorporation of cross-cutting issues such as communication skills, ICT use, gender inclusivity, and professional values contributed to a more inclusive and diverse learning environment, encouraging students' active engagement and participation in the learning process.

In essence, the results from the first research question highlight English language tutors' ability to demonstrate and integrate PCK in grammar teaching. These findings are consistent with empirical studies conducted on PCK at pre-service institutions (Mishiwo et al., 2017; Ozden, 2008). Their clear understanding of the interconnection of curriculum requirements, effective use of teaching strategies, integration of inductive and deductive techniques, differentiation and individualisation of instruction, comprehensive assessment practices, and skilled classroom management, all contribute to their students' rich and inclusive learning experience. Incorporating cross-cutting issues improves the learning environment even more by promoting a holistic approach to language education and fostering students' academic growth and development (Abell, 2008; Park & Oliver, 2008).

## **Research Question 2: Cross-Cutting Issues Integrated in PCK in Teaching of Grammar**

The second research question sought to identify cross-cutting issues introduced through PCK in grammar teaching by English language tutors in the classroom in Ghana. To respond to this question, the tutors were observed and interviewed. These data were transcribed and analysed using thematic analysis. The results of this study highlighted the tutors' incorporation of various cross-cutting issues into their pedagogy, thereby improving the students' overall learning experience.

The tutors' commitment to creating an inclusive learning environment by considering gender, inclusivity, and individual differences in learning styles and preferences was a significant aspect of the findings. Darling-Hammond and Bransford (2005) argue that inclusive education is a critical component of effective teaching because it promotes equitable opportunities for all students to participate and succeed. The tutors ensured that their teaching practices did not perpetuate stereotypes and that all students felt equally valued and respected in the classroom by being mindful of gender inclusivity. Furthermore, by catering to a variety of learning styles and preferences, the tutors recognised and accommodated the numerous ways in which students process information, resulting in a more personalised and practical learning experience for each individual (Dunn & Dunn, 1992).

Another notable finding was the tutors' competent use of communication skills. Effective communication is a cornerstone of successful teaching because it allows instructors to effectively engage and connect with their students (Grossman & McDonald, 2008). The tutors encouraged active

student participation and discussions through skilful communication, encouraging diverse ideas and perspectives to enrich the learning process. The tutors empowered the students to express their thoughts and engage in meaningful dialogue by creating an open and supportive classroom environment, facilitating a deeper understanding of grammar concepts and encouraging critical thinking.

Moreover, incorporating ICT was a significant finding. Technology has the potential to improve learning experiences, to engage students, and to bridge the gap between classroom knowledge and real-world applications in education (Darling-Hammond & Bransford, 2005). The students were able to access information in various formats, conduct online research, and explore grammar concepts outside of the classroom thanks to the tutors' use of ICT tools and resources. This technological integration enhanced the learning experience and prepared the students to navigate the digital landscape, providing them with essential skills for the twenty-first century.

Another critical aspect of the results was the tutors' demonstration of professional values and attitudes. Teachers' attitudes and behaviours significantly influence the classroom climate and students' learning motivation (Grossman & McDonald, 2008). The tutors' demonstration of professionalism, respect, and equal treatment towards their students fostered a positive and supportive classroom environment.

Essentially, the results from the second research question highlight English language tutors' expertise in integrating cross-cutting issues in the teaching of grammar through PCK. Their consideration of gender inclusivity and instructional differentiation demonstrates their commitment to creating an

inclusive learning environment where all students feel valued and respected. Effective use of communication skills and the incorporation of technology increase student engagement and provide opportunities for diverse perspectives and real-world connections. Finally, the tutors' professional values and attitudes contribute to a positive and supportive classroom environment, promoting an optimal learning experience for all students. The Experiential learning theory supports this aspect of representation and learning (Kolb, 1984).

### **Research Question 3: Incorporation of Cross-Cutting Issues and PCK to Promote Differential Learning**

The third research question sought how incorporating cross-cutting issues through PCK in teaching grammar promotes differential learning among students. To respond to this question, the tutors were observed and interviewed. These data were transcribed and analysed using thematic analysis.

The results demonstrated the numerous ways in which this integration facilitated differential learning, making each student's learning experience more inclusive, engaging, and effective. The results showed that tutors created a classroom environment where all students felt valued and encouraged to actively participate and engage in learning by considering individual differences and diverse learning needs. Inclusive education is based on recognising and accommodating students' diverse strengths, needs, and backgrounds and has been shown to improve academic outcomes and student well-being (Darling-Hammond & Bransford, 2005). As a result of the tutors' emphasis on individualisation and differentiation in their instructional



practices, the students could access the curriculum in a way that resonated with their learning styles, promoting a sense of belonging and academic success.

Another notable result was the use of various teaching strategies. The tutors catered to the multifaceted nature of learning and engaged students through different pathways using various instructional approaches. This diversity in teaching methods accommodated different learning styles and facilitated a deeper understanding of grammar concepts as students linked theoretical knowledge to practical applications in real-life contexts (Grossman & McDonald, 2008).

The practical application of deductive and inductive techniques in grammar instruction was also emphasised as a critical factor in promoting differential learning. Inductive methods encourage students to discover rules and patterns through active engagement and exploration, whereas deductive methods explicitly explain grammar rules (Celce-Murcia & Larsen-Freeman, 1999; Shulman, 1986). The tutors catered to different learning preferences by incorporating both approaches, ensuring that the students with varying cognitive styles could grasp grammar concepts more effectively. This balanced instructional approach enabled the students to understand grammar rules better, promoting long-term knowledge retention and application.

Another significant finding that facilitated differential learning was the incorporation of technology. The tutors enabled the students to access information and learning materials in various formats and at their own pace by incorporating technology such as computers, mobile devices, and online resources. Students gained a sense of autonomy and self-direction due to this

empowerment in learning, allowing them to explore grammar topics in ways that matched their interests and learning goals. Darling-Hammond and Bransford (2005) found that self-directed learning increased motivation and engagement, resulting in a more meaningful learning experience. Also, some people learn better using phones, tablets, and computers.

Finally, the tutors' student-centred approach was critical in promoting differential learning. The tutors empower the students to take ownership of their educational journey by putting them at the centre of the learning process. This approach encouraged the students to make predictions, to participate in discussions, and to reflect on their learning experiences, resulting in a higher engagement level. As a result, the students became active participants in building their understanding of grammar concepts, in tailoring their learning to their specific needs and in gaining a more comprehensive understanding of the subject matter.

In essence, the results from the third research question demonstrate that incorporating cross-cutting issues through PCK in teaching grammar promotes differential learning among students in multiple ways. Creating an inclusive learning environment, using varied teaching strategies, effectively utilising deductive and inductive techniques, integrating technology, and using a student-centred approach all contribute to a more engaged and successful learning journey for each student. These findings support Coffield et al.'s (2004) study which confirmed that matching instruction to students' learning styles improves learning outcomes. Therefore, by embracing these principles of differential learning, English language tutors can ensure that their instructional practices cater to individual differences, enhance student

engagement, and foster a deeper understanding of grammar concepts, ultimately leading to improved learning outcomes.

#### **Research Question 4: Tutors' PCK and Students' Understanding of Grammatical Concepts**

The fourth research question examined how integrating PCK constructs enhances teacher trainees' understanding of grammatical concepts in the classroom. The test was conducted on teacher trainees and analysed using Pearson Correlation to respond to this question. The results highlighted how the adapted PCK model enhances teacher trainees' understanding of grammatical concepts. A 25-item scale measured the tutors' PCK. As a result, a factor analysis was conducted to ascertain the underlying factors or variables that make up the PCK of the tutors. The factor analysis results using the principal component method revealed that the 25-item scale used for measuring tutors' PCK could be grouped into four distinct constructs or dimensions. These dimensions of PCK are adequate teaching practices, student-centred teaching practices, adaptive teaching practices, and varied instructional strategies. Of the four factors, the most significant one is effective teaching practices, which explains 47.067% of the variance, followed by adaptive teaching practices (5.494%), student-centred teaching practices (7.590%), and varied instructional strategies (4.538%). The cumulative percentage of variance indicates that the first factor is the most influential (20.137%), followed by the third (37.203%), second (53.211%), and fourth (64.690%).

These findings imply that effective teaching practices are crucial in enhancing students' understanding of grammatical concepts. This factor

encompasses teaching techniques, methods, and approaches that effectively facilitate the learning and comprehension of grammar. Specifically, these factors include issues like tutor welcomes diversity of ideas from students, tutor closes teaching by keeping students on task, tutor professionally handles students' questions, tutor always gives feedback to students on their classwork, homework and class tests, tutor reflects and summarises his/ her teaching, etc. The students benefit from the tutors who employ pedagogically sound strategies, creating an optimal learning environment that fosters students' engagement and promotes their comprehension of complex grammatical rules and structures. In contrast, varied instructional strategies have the most negligible impact on students' understanding of grammatical concepts. However, they still play a significant role in contributing to a diverse and dynamic learning experience.

Concerning the hypothesis testing, the only one in this study, Hypothesis 1, aimed at investigating the relationship between English educators' PCK and teacher trainees' understanding of grammatical concepts. Pearson correlation was employed to assess this statistical relationship. A composite variable for English educators' PCK, which comprised the average of four main factors obtained from the factor analysis, was computed to conduct the correlation analysis. Similarly, a composite variable was created for students' understanding of grammatical concepts, combining test scores and students' ability to explain their answers.

The correlation coefficient ( $r$ ) obtained from the analysis is 0.070. This indicates a weak positive correlation between English educators' PCK and students' understanding of grammatical concepts. Additionally, the probability

value (P-value) of 0.390 is greater than the significance level of 0.05, leading to the non-rejection of the null hypothesis. This means that there is no significant relationship between English educators' PCK and teacher trainees' understanding of grammatical concepts.

These results imply that, while PCK is essential for effective teaching practices and impacts students' learning outcomes, it might not be the sole determinant of students' understanding of grammatical concepts. Other factors, such as students' prior knowledge, motivation, engagement, classroom dynamics, and teaching methodologies beyond PCK, could also influence students' comprehension of grammar. Therefore, as suggested by Mishiwo et al. (2017), Ozden (2008), and Sri et al. (2021), teachers should learn and use more alternative instructional strategies and activities.

In teaching grammar, contextualised grammar instruction, according to Celce-Murcia and Larsen-Freeman (1999) and Larsen-Freeman (2000), through the use of authentic texts is adequate. Contextualised grammar instruction helps students understand the relevance of grammar in real-life situations (e.g., texts, videos, audio). Real-world examples and authentic materials are used to make grammar concepts relevant and applicable to students' lives, allowing them to better understand grammar's practical importance in everyday communication. Also, multimedia and visual aids, such as videos, images, and charts, help students understand complex grammar concepts and stay focused during lessons.

In essence, the factor analysis revealed four main factors that can impact students' understanding of grammatical concepts, with effective teaching practices being the most influential. The correlation analysis,

however, did not show a significant relationship between English educators' PCK and teacher trainees' understanding of grammatical concepts. This suggests that while PCK is vital to effective teaching, other factors may also contribute to students' learning outcomes (NTECF, 2017). They include using varied strategies (e.g., portfolios, project-based learning, inquiry-based learning, etc.) and approaches to teaching grammar (e.g., communicative language teaching, task-based language teaching, cognitive approach etc.).

### **Integration of Qualitative and Quantitative Results**

As mentioned already, the qualitative data of this study has to do with the data obtained from the interviews and, more importantly, the observation. The observation data are essential since PCK is rooted in classroom practices (Ball et al., 2008; Capraro et al., 2005; Gess-Newsome & Lederman, 2001). Furthermore, the quantitative data comprised a factor analysis of a 25-item scale adapted to measure the PCK of English language tutors at some selected CoEs. This section of the discussion reveals how the four factors from the factor analysis, effective teaching practices, student-centred teaching practices, adaptive teaching practices and varied instructional strategies, are related to the data from the observation. Interestingly, these factors are evident in the observation that were carried out. These subsequent paragraphs seek to unveil how the four factors are evident in the observation of the English language tutors as they taught a grammar lesson.

Concerning effective teaching practices, the observations show that the tutors have a firm grasp on the curriculum requirements, organising their lessons around specific learning objectives and content expectations for grammar instruction. They use a variety of teaching strategies and integrate

methods to effectively engage the students in discussions, group work, and problem-solving activities. Furthermore, the tutors are committed to differentiation and individualisation, utilising group work, pair work, and individual tasks to cater to diverse learning styles and preferences. Their comprehensive assessment strategies, which include formative and summative methods, demonstrate a dedication to obtaining detailed feedback on student learning outcomes.

Effective classroom management and organisation skills are evident, as they foster a respectful and supportive learning environment in which students' participation is encouraged, resulting in an orderly and conducive classroom environment. Incorporating cross-cutting issues such as ICT use, gender inclusivity, core and transferable skills (communication), and professional values and attitudes promotes an inclusive and diverse learning environment, fostering the students' active participation and engagement.

Moreover, the data from the observation also highlight the tutors' student-centred teaching practices, which put the students at the centre of the pedagogical process. Active learning strategies that encourage students' participation and interaction with the content are incorporated into these practices, fostering more profound understanding and critical thinking (Kolb, 1984). The tutors encourage students to take ownership of their learning journeys, fostering autonomy and self-direction. They ensure that all the students can access the material effectively by tailoring the pace and content to individual students' needs and abilities. Integrating technology into their lessons helps students learn even more by allowing for personalised exploration and self-directed inquiry. By incorporating inductive and

deductive techniques, the tutors encourage the students' engagement in knowledge construction, allowing students to identify patterns and apply grammar rules in context.

The English language tutors demonstrated effective adaptive teaching practices to meet the diverse needs of their students. They employed differentiated instruction, providing various instructional methods, such as group work and individual tasks, to cater to different learning styles and ensure an inclusive learning environment. Additionally, the tutors offered individualised support and provided one-on-one feedback and resources to assist the students in grasping grammatical concepts effectively. Another essential aspect observed was flexibility in lesson delivery, as the tutors adjusted their paces and content based on the students' understanding and engagement, ensuring that all students remained actively involved.

The tutors also accommodated learning challenges by providing alternative explanations and examples, making complex concepts more accessible to students with varying language proficiencies and learning abilities. They also scaffolded learning experiences by breaking grammar concepts into manageable steps and providing the necessary guidance to promote mastery and confidence. Furthermore, they took relevant prior knowledge into account, incorporating relevant examples and materials to make the content more relatable and meaningful to the students who come from various backgrounds. These adaptive teaching practices contributed to an engaging and supportive learning environment, encouraging students' active engagement and comprehension of grammar concepts.



Finally, English language tutors used various instructional strategies in grammar instruction. These strategies include various teaching techniques such as lectures, discussions, group work, problem-solving activities, and interactive sessions that promote active learning and deeper understanding. To cater to different learning preferences and cognitive styles, the tutors skilfully integrate inductive and deductive techniques, providing explanations and examples while encouraging students to construct independently and to discover rules independently.

Furthermore, using ICT, such as mobile phones and projectors, enhances the learning experience by encouraging self-directed exploration and engagement. The tutors also encouraged active engagement through hands-on activities that allow students to participate in sentence construction actively, identify grammatical elements and apply rules, foster experiential learning and have a sense of ownership in the learning process. By employing these varied instructional strategies, the English language tutors create a dynamic and inclusive learning environment, accommodating diverse learning styles and enriching students' understanding and practical application of grammar concepts.

In conclusion, the data from the observation demonstrate English language tutors' comprehensive and dynamic approach to grammar instruction. Their effective teaching practices, student-centred approaches, adaptive teaching methods, and varied instructional strategies foster an engaging and supportive learning environment, enabling students to become proficient English language users. The tutors' commitment to individualised instruction, consideration of diverse learning needs, and innovative teaching

approach fosters an inclusive classroom environment, allowing students to participate, to understand, and to effectively apply grammatical concepts actively.

### Chapter Summary

This chapter was dedicated to the presentation of the results and its subsequent discussions. Chapter Four encompassed the observation of English language tutors as they were teaching specific grammar concepts. This was followed by the analysis of interview data with the tutors. The interview data was then discussed, and insights were drawn in relation to existing literature on PCK. Additionally, the questionnaire responses from teacher trainees regarding their views on the PCK of their tutors were analysed and discussed. Subsequently, a test was administered to evaluate the teacher trainees' understanding of grammar concepts such as word class, noun, functions (subject & object), and subject-verb agreement. This comprehensive examination and discussion of data from various sources provided valuable insights into the effectiveness of PCK integration in grammar teaching within the context of English language education. The next and final chapter of this study will look at the summary, conclusion and recommendations of the study.

## CHAPTER FIVE

### SUMMARY, CONCLUSION, AND RECOMMENDATIONS

#### Introduction

This chapter is dedicated to summarising the findings of the study. It also contains the conclusions and the recommendations. The summary of the study is presented first, followed by the findings, the conclusions, and the recommendations for further research.

#### Summary

The purpose of the study was to investigate the English language tutors' PCK for teaching grammar at some selected CoEs (Shulman, 1986, 1987). Therefore, the study explored the PCK constructs English language tutors show in teaching grammar at the selected CoEs in the Eastern and Greater Accra zone of Ghana. Also, as proposed in the National Teacher Education Curriculum Framework (NTECF, 2017), PCK is only complete if it is integrated with cross-cutting issues; the study identified cross-cutting issues the English language tutors introduce when teaching grammar. Consequently, the integration should promote differential learning among students. As a result, the study was carried out to discover how the incorporation of cross-cutting issues into PCK enforced differential learning among the students. Basically, the relevance of understanding and integrating the PCK constructs and cross-cutting issues in instruction is to enhance teaching effectiveness, satisfy students' needs and foster students' learning outcomes (NTECF, 2017; Shulman, 1986). Based on this proposition, the students in the selected CoEs were tested to find out how the practical aspects of PCK enhanced their understanding of grammatical concepts. Also, a correlation analysis was done

to find out the relationship between tutors' PCK and students' understanding of grammatical concepts.

Based on the purpose of the study, an exploratory sequential mixed methods design was employed. Qualitative and quantitative data were collected from six English language tutors and 155 third-year English language major students who were selected using multi-staged sampling techniques from the three CoEs in the EGA (Eastern and Greater Accra) zone, Ghana.

The qualitative data were analysed using deductive thematic analysis to identify PCK constructs, sub-constructs and cross-cutting issues used by the English language tutors in the selected CoEs. Also, the analysis revealed how the tutors incorporated cross-cutting issues into PCK in teaching grammar to promote differential learning. The quantitative data were analysed using descriptive and inferential statistics. A confirmatory factor analysis on the 25 PCK items on the questionnaire was computed to identify the factors that can affect students' understanding of grammatical concepts. The factor analysis identified four main factors: effective teaching practices, student-centred teaching practices, adaptive teaching practices, and varied instructional strategies. These factors were computed into a new composite variable, tutors' PCK, for the correlation analysis. A correlation was done on the variables, tutors' PCK and students' understanding of grammatical concepts to find out the relationship. However, the hypothesis of the relationship between the English language tutors' PCK and the students' understanding of grammatical concepts was not supported, hence, failure to reject the null hypothesis.

## Key Findings

1. The results revealed the PCK constructs and sub-constructs for teaching grammar showed by the English language tutors in the selected colleges of education in the Eastern and Greater Accra (EGA) zone of Ghana. The constructs included Pedagogical Knowledge which comprises the following sub-constructs: knowledge of curriculum, knowledge of strategies, knowledge of assessment and evaluation, knowledge of learners, knowledge of classroom management and organisation, knowledge of educational context, and Content Knowledge which comprises the following sub-constructs: technological pedagogical knowledge, conceptual knowledge and content specific pedagogy) (Magnusson et al., 1999; Shulman, 1986, 1987).
2. Also, the results revealed that the English language tutors' strategies (general pedagogical knowledge) for teaching grammar were discussion and verbal exposition methods. However, their topic-specific strategies (content specific pedagogy) for teaching grammar were the inductive and deductive approaches for teaching language (Celce-Murcia & Larsen-Freeman, 1999; Larsen-Freeman, 2000; Tomlinson, 1999).
3. The study's findings revealed the CoEs English language tutors' expertise in integrating cross-cutting issues into PCK in teaching grammar. The tutors moved back and forth with topics, catered for sex differences, integrated the four language skills in a single lesson, promoted professional values and attitudes by fostering a friendly and

tension-free atmosphere, and established order and responsibility within the classroom. Also, the tutors demonstrated good classroom organisation by promoting a conducive learning environment. The tutors encouraged students to access information in various formats, conducted online research and explored grammar concepts outside the classroom to support discussions and presentations. Therefore, the cross-cutting issues the tutors used in teaching grammar included gender, inclusivity, instructional differentiation, incorporating ICT, core and transferable skills (communication), and professional values and attitudes. The tutors practised professional values and attitudes, an aspect of representation and learning supported by the Experiential Learning theory (Kolb, 1984).

4. It was found that the English language tutors in the selected CoEs demonstrated various ways to facilitate differential learning, making each student's learning experience more inclusive, engaging and effective. The results revealed the tutors' creation of an inclusive learning environment, use of varied teaching strategies, integration of the four language skills in a single lesson, effective utilisation of the deductive and inductive approach, integration of technology, and student-centred approach, all contributed to a more engaging and successful learning journey for each student.
5. The study's findings from the descriptive statistics revealed that the tutors' effective teaching practices enhanced the students' understanding of grammatical concepts. However, the results from the inferential statistics revealed that the correlation coefficient ( $r$ )

obtained from the analysis was 0.070 while the p-value was 0.390. Thus, from the correlation analysis, there is no statistically significant relationship between the English language tutors' PCK and students' understanding of grammatical concepts.

### **Conclusion**

It can be discerned from the study's findings that the English language tutors in the selected colleges of education in the Eastern and Greater Accra zone in Ghana had adequate knowledge and understanding of pedagogical content knowledge for teaching grammar. This is not surprising since tutors in the selected colleges displayed similar representations of PCK constructs and sub-constructs in the teaching of grammar topics. These findings are critical to tutors' PCK in teaching grammar since they provide a better understanding of the extent to which these tutors are working to provide high-quality grammar education in preparation programmes to produce high-performing and inspirational new teachers. It can, therefore, be concluded that the English language tutors demonstrated topic-specific pedagogy in teaching grammar topics and their PCK constructs and sub-constructs displayed are supported by the Contextual theory.

Moreover, this study's findings point to how the English language tutors in the selected colleges of education in the EGA zone of Ghana incorporated cross-cutting issues such as gender, inclusivity, core and transferrable skills, ICT, professional values and attitudes, and classroom management and organisation into PCK in teaching grammar to promote a holistic learning of the individual teacher trainees. The incorporation of the cross-cutting issues into PCK in teaching grammar, aside the provision of

learning for all, provides knowledge for students to solve real-world problems (NTECF, 2017; NTS, 2017). Also, teacher trainees' introduction to these cross-cutting issues will create their awareness of what these cross-cutting issues are and their relevance in education (NTECF, 2017).

Also, the English language tutors in the selected colleges of education showed expertise in the incorporation of cross-cutting issues into PCK in teaching grammar which contributed to a more engaging learning journey for each student. And this is where the relevance of incorporating cross-cutting issues into PCK is, for the tutor to be aware of the various ways the individual learner prefers to learn and how to enforce this in the teaching and learning of grammatical concepts to cater to differential leaning (Fleming, 2011; NTECF, 2017).

Based on the results of Research Question Four, it can be concluded that integrating practical context of PCK into the teaching of grammar are crucial to enhancing students' understanding of grammatical concepts. However, the results from the correlation analysis revealed that there was no statistically significant relationship between the tutors' PCK and the teacher trainees' understanding of grammatical concepts. It could therefore be concluded that there is room for enhancing how PCK is understood and utilised in the classroom. This implies that, while tutors are skilled at adapting teaching approaches to different learning styles, there may be gaps in how well this translates into enhanced grammatical comprehension among teacher trainees. Finally, it can be concluded that tutors' PCK might not be the sole determinant of students' understanding of grammatical concepts.



## Recommendations

The following recommendations were made based on the study's findings:

1. As the English language tutors in the selected colleges of education showed adequate PCK constructs and sub-constructs in the teaching of grammar, it is recommended that tutors make teacher trainees know the importance of PCK constructs in the teaching of grammar. Also, the tutors should make the teacher trainees aware of how the PCK constructs and sub-constructs interact and are integrated in grammar lessons. Tutors can do a reflection at the end of instruction to help teacher trainees identify patterns and trends on tutors' PCK in teaching grammar. This will expose students to the concept of topic-specific pedagogy in teaching grammar topics at any context (Kolb, 1984; NTECF, 2017).
2. As the CoEs English language tutors' teaching of grammar was based on the inductive and deductive approach, it is recommended that the Ministry of Education, Ghana Tertiary Education Commission (GTEC) and the National Teaching Council organise professional development sessions for the English language tutors to learn other methods of teaching grammar. This can be done by conducting needs assessment to identify areas of interest and challenges. Then, workshops can be organised for tutors in the zone during vacation. However, the Task-Based Language Teaching approach (TBLT) is recommended to provide opportunities for learners to use language in meaningful communicative tasks (Peacock, 1997; Willis & Willis, 2007).

3. As the CoEs English language tutors incorporated cross-cutting issues into the PCK for teaching grammar, it is recommended that the Ministry of Education, Ghana Tertiary Education Commission (GTEC) and the National Teaching Council organise training sessions for English language tutors on how to integrate other cross-cutting issues of education into PCK in teaching grammar. The training sessions can be done during vacation by experts in the field. The trainers should understand the goals, objectives, and content of cross-cutting issues in education and how they are introduced into the PCK of teaching grammar. Furthermore, trainers are to monitor the implementation progress of tutors to evaluate the impact of the training on tutors' practices during instructions. In addition, it is recommended that the teacher trainees should be made aware of what cross-cutting issues are, how they are introduced into PCK in teaching grammar and their relevance in grammar instructions.
4. As the English language tutors at the selected CoEs introduced cross-cutting issues into PCK in teaching grammar to enforce differential learning among students, it is, therefore, recommended that the tutors make the teacher trainees aware of the various ways individuals prefer to learn in order to help cater for individual differences in-service. Tutors can show teacher trainees how they adapt teaching methods, materials, and assessments to accommodate diverse learning styles, abilities, and preferences to help cater for individual differences (Dunn & Dunn, 1992).

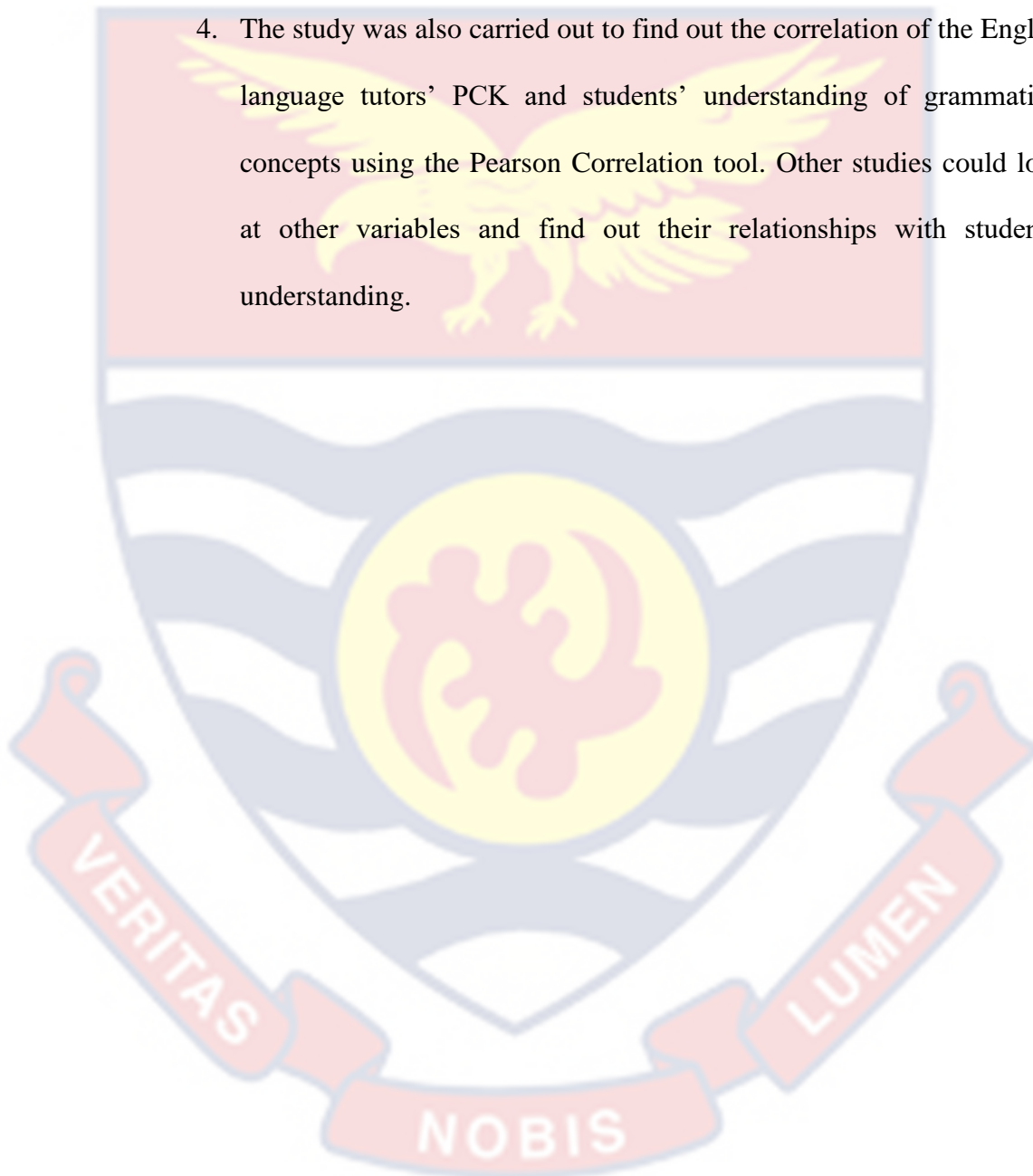
5. As the results from the correlation analysis of the tutors' PCK and the students' understanding of grammatical concepts conclude that tutors' PCK might not be the sole determinant of students' understanding of grammatical concepts, it is recommended that the English language tutors explore other unmeasurable factors, such as students' prior knowledge, motivation, engagement, classroom dynamics, and teaching methodologies beyond PCK to help students acquire grammar knowledge to be able to perform essential functions such as communication, proficiency at various contexts, and reduction of errors (Crystal, 2004; Ellis, 2002; Nordquist, 2019).

#### **Suggestions for Further Studies**

The educational implication of the findings of this study calls for further research in the area of English language. The following are suggested for further research:

1. The study covered only one zone, EGA, in the colleges of education in Ghana. The design could be used or modified to include more colleges from different zones to give a wider view on the English language tutors' PCK in teaching grammar and its influence on the teacher trainees' comprehension of grammatical concepts in the CoEs in Ghana.
2. This study centred on only the teaching of grammar. Other aspects of the English language could be explored to come out with subject-specific pedagogy and topic-specific pedagogy in teaching those aspects in the CoEs in Ghana.

3. The study covered the tutors' PCK in teaching English language grammar. It is suggested that other studies look at teacher trainees' PCK in teaching grammar using observation, interview, and questionnaire.
4. The study was also carried out to find out the correlation of the English language tutors' PCK and students' understanding of grammatical concepts using the Pearson Correlation tool. Other studies could look at other variables and find out their relationships with students' understanding.



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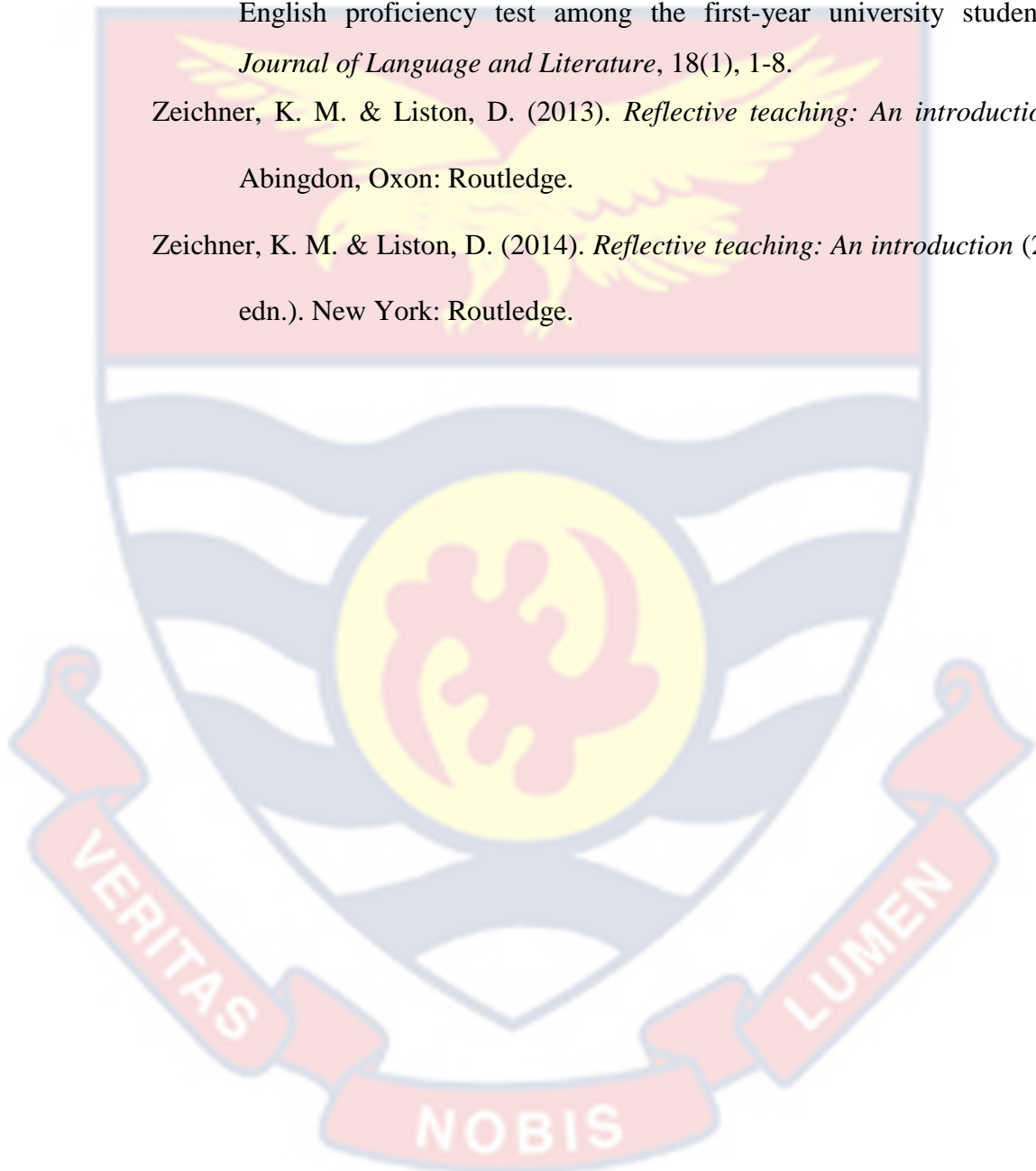
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APPENDICES

APPENDIX I

UNIVERSITY OF CAPE COAST

Classroom Observation Protocol for Tutors

Name of Tutor: .....

Name of School: .....

Topic: .....

Date: .....

Level: .....

Number of Students: .....

Date of Observation: .....

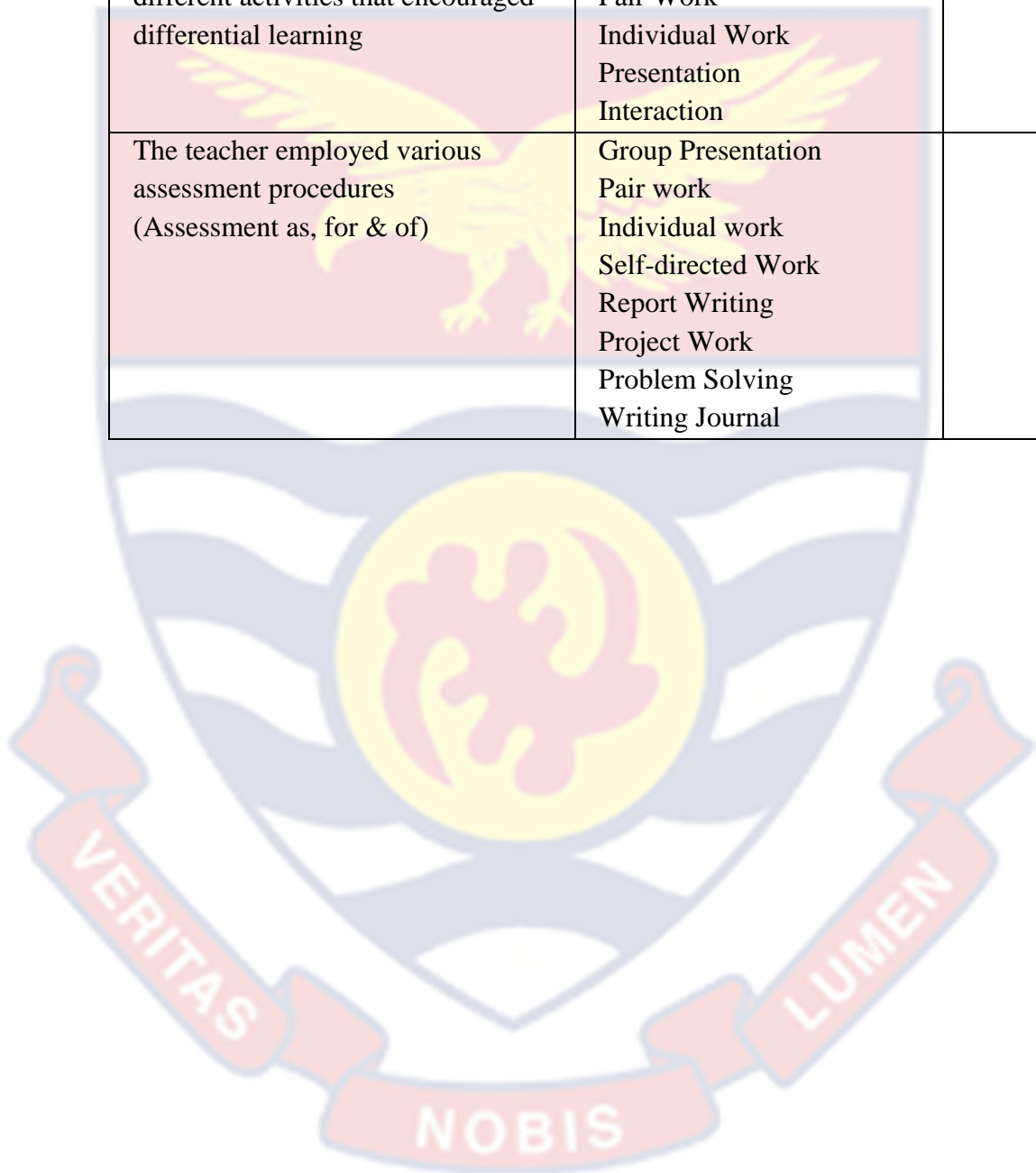
Lesson Starts:..... Lesson

Ends:.....

Lesson Design		Description of Event
Showing learning gap by merging previous skills with new skills	Yes No	
The teaching strategy used was	Lecture Method/ Verbal Exposition Activity Method Demonstration Method Group Work Discovery Method Discussion Method Interaction	
The lesson was designed to develop students understanding of a particular grammar concept	Yes No	
The lesson was presented using interesting and captivating introduction	Yes To some extent Never occurred	
Implementing teaching chronologically	Yes No	
The lesson engaged students	Yes	

	To some extent Never occurred	
The lesson focus and direction were determined by ideas from students (Inductive)	Yes To some extent Never occurred	
The lesson focus and direction were determined by ideas from tutor (Deductive)	Yes To some extent Never occurred	
Students were encouraged to make predictions and discuss their mistakes	Yes Sometimes Never occurred	
Students were given the chance to ask questions	Yes Sometimes Never occurred	
Students' questions were given the needed attention	Yes Sometimes Never occurred	
Uses appropriate teaching methods to achieve set objectives	Yes No	
Uses appropriate teaching resources and differentiated activities to cater for students' differences	Yes Sometimes Never occurred	
Involving students in using teaching resources	Yes Sometimes Never occurred	
Demonstrate knowledge of subject matter	Yes No	
Handles students' questions in a professional way Handles students' questions in a professional way	Yes Sometimes Never occurred Yes Sometimes Never occurred	
Welcomes diversity of ideas from students	Yes Sometimes Never occurred	
The teacher acted as a facilitator in the teaching learning process	Yes Sometimes Never occurred	
There was equal respect among the teacher and the students.	Yes Sometimes Never occurred	

Differential Learning		Description of Event
The teacher used appropriate strategies to present information to students.	Yes Sometimes Never occurred	
The lesson was presented using different activities that encouraged differential learning	Group Work Pair Work Individual Work Presentation Interaction	
The teacher employed various assessment procedures (Assessment as, for & of)	Group Presentation Pair work Individual work Self-directed Work Report Writing Project Work Problem Solving Writing Journal	



## APPENDIX II

## UNIVERSITY OF CAPE COAST

**Interview Guide for Tutors regarding their PCK and their use of cross-cutting issues**

1. Can you please tell me a little about yourself?

**Probe:** Age, educational background, length of stay in the school, position in the school, your roles and responsibilities

**PCK**

2. Generally, what is your understanding of PCK?

3. How would you describe your pedagogical content knowledge concerning teaching grammar concepts in the most appropriate, effective, organized and tailored way?

4. What is the subject matter knowledge of grammar you teach at the colleges of education in Ghana?

5. How well do you know the subject you teach? **Probe:** What are the theories underpinning the teaching and learning of grammar?

6. Do you know the context- and content-specific knowledge that influences grammar teaching in a college education?

7. Are you mindful of PCK to promote understanding of how particular topics in grammar are organized, represented and adapted to the diverse interests and abilities of learners?

8. How do you transform the content knowledge into an understandable form for learners? **Probe:** What are some of the strategies for teaching grammar meaningfully?

9. What is the importance of introducing a topic on grammar in an exciting and captivating way?

10. When introducing a new topic, do you consider your students' prior knowledge? **Probe:** What are some of the strategies for teaching grammar content?

11. Do you draw links between topics and move back and forth between topics?

12. Does the design of your lessons incorporate tasks, roles, and interactions?

**Probes:** a. If yes, what tasks and roles do you give students?

13. Do you always follow the textbook/ curriculum to teach students?

14. What are students' misconceptions about grammar? How do you address certain misconceptions about some topics in grammar?

**Probe:** If yes, how do you address these misconceptions?

15. What language do you use in teaching grammar in English language classes?

16. Do you make sure that the pace of the lesson is appropriate for the developmental level/ needs of the students?

17. What different ways do your students prefer to learn?

**Probe: Do you teach to cater for the different ways learners learn?**

18. Do you use appropriate teaching resources and differentiated activities to cater for students' differences?

19. Do you involve students in the use of the teaching resources?

20. Do you ask students to work in pairs or small groups?

**Probe:** If yes, how often? Why do you pair them or put them in groups?

21. Do you explain things carefully to your students to help them avoid mistakes?

22. Do you distribute questions evenly to students?

**Probe:** If yes, why do you do that, and what do you consider when distributing questions?

23. Do you professionally handle students' questions?

24. Do you always give feedback to your students on their classwork, homework and tests?

25. Do you have techniques for assessing pupils' understanding of the content taught?

**Probe:** Which assessment strategies do you regularly employ to measure students' progress?

26. At the end of each lesson, do you provide adequate time and structure for reflection? **Probe:** Do your methodology, classroom management, presentation and practice techniques cater to students' grammar class needs?

### **Cross-cutting issues**

27. To encourage learning for all, the National Teacher Education Curriculum Framework (NTECF) encourages that specific cross-cutting issues must be incorporated into the teaching and learning process. Do you know these cross-cutting issues?

**Probes:** If yes, what are these cross-cutting issues?

If not, mention the cross-cutting issues for the interviewees.

28. What is the importance of incorporating equity and inclusivity, professional attitudes and values, core and transferable skills, assessment strategies, action research, reflection, and information communication technology (ICT)?

**Guide:** Let interviewees comment on each of the cross-cutting issues.

29. How would you introduce these cross-cutting issues through PCK in teaching grammar?

**Guide:** Let interviewees comment on how they would introduce each cross-cutting issue.

30. Which of the cross-cutting issues do you promote while teaching grammar? Examples: equity and inclusivity, core and transferable skills, classroom management, knowledge of the language, cultural awareness, adaptability and flexibility, integration of technology, assessment strategies, gender, reflection, action research, etc

### **Promoting differential learning among learners**

31. How do you promote differential learning among students?

**Guide:** Let interviewees comment on how they facilitate the learning environment to focus on learner's needs, abilities, interests and learning styles.

### **Debriefing**

32. What steps do you take to cater to the differences of the learners in the learning environment?

33. Do you have any comment(s) to add? Kindly share.

**Thank you for your time**

## APPENDIX III

## UNIVERSITY OF CAPE COAST

## QUESTIONNAIRE FOR STUDENTS

I am a doctoral student of the University of Cape Coast conducting a study in some selected colleges of education. My research is to examine English educators' Pedagogical and Content Knowledge in the teaching grammar at the colleges of education. Your responses to these questions would be held confidentially. Please tick where appropriate. Thanks for your cooperation.

**Section A: Socio-demographic Characteristics**

1. Gender

(a) Male [ ]

(b) Female [ ]

2. Age

(a) 16-20 years [ ]

(b) 21-25years [ ]

(c) Above 25years [ ]

3. College

(a) Kibi Presbyterian College of Education [ ]

(b) Seventh Day Adventist College of Education [ ]

(c) Accra College of Education [ ]

4. Course

.....

.....

.....

.....

**Section B: Students' knowledge of grammatical concepts and the methods of teaching them**

5. Were you taught grammatical concepts in your English course?

(a) Yes

(b) No

6. If **yes**, select which grammatical concept(s) that you were taught. Please, tick where appropriate.

No	Grammatical Concepts	Covered	Not Covered
1	Forms of word classes		
2	Types of word classes		
3	Functions of word classes		
4	Meanings of word classes		
5	Grammatical environment or position of the word classes in a construction		
6	Subject-verb agreement		
7	Phrases/Group		
8	Clauses		
9	Sentences (types and kinds)		
10	Ambiguity		
11	Conjunction		

7. Were you taught the methods of teaching grammatical concepts in your English course?

(a) Yes

(b) No

8. If **yes**, select the methods of teaching grammatical concept(s) that you were taught. Please, tick where appropriate.

No	Methods of teaching Grammatical Concepts	Covered	Not Covered
1	Have you been taught the theories of second language acquisition		
2	Methods of teaching grammar (Deductive and Inductive Methods)		
3	Contemporary approaches to teaching grammar		
4	Stages of teaching grammar		
5	Lesson plan preparation on grammar		

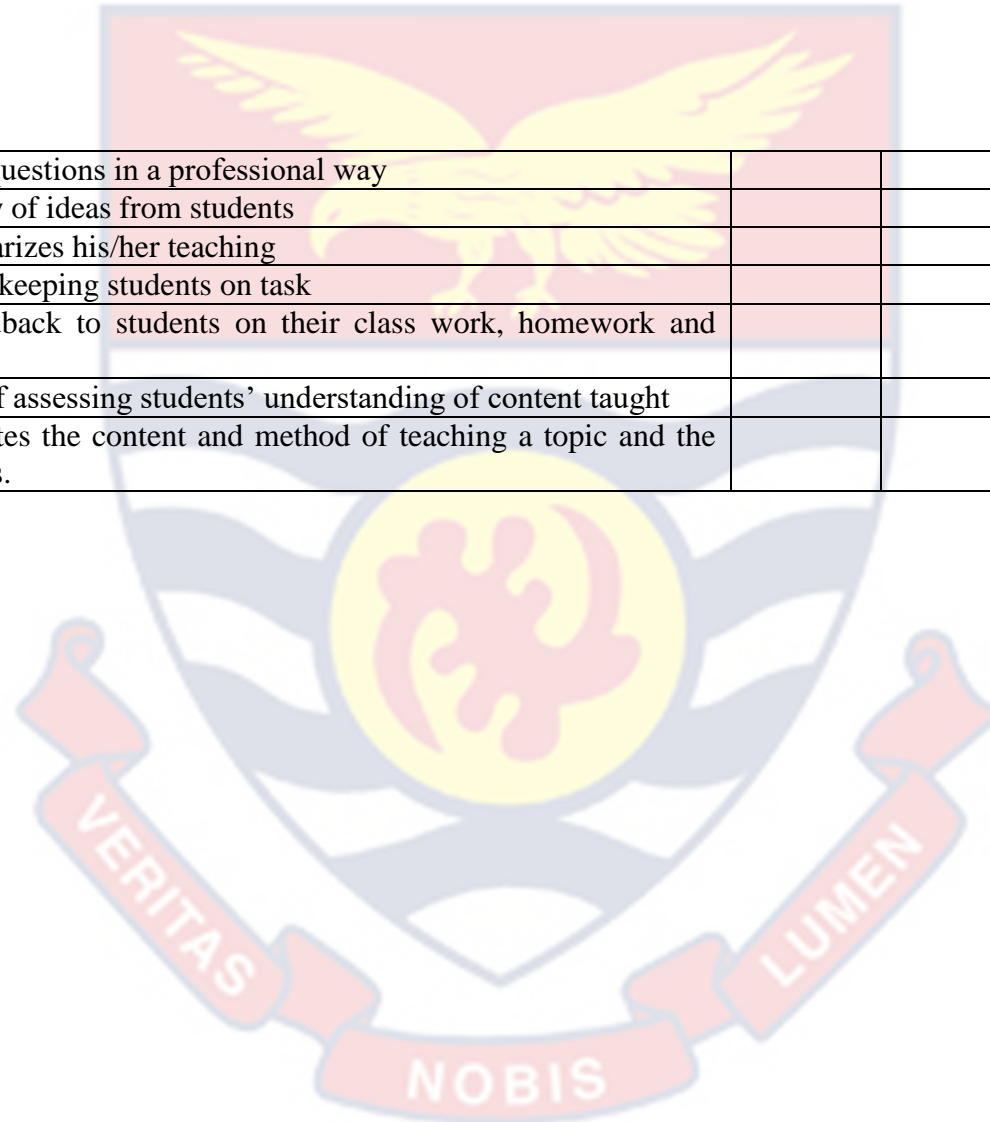
**Section C: Students' assessment of the integration of practical aspects of tutor's PCK**

9. Instruction: The following statements describe the pedagogical and content knowledge of tutors. In a continuum of strongly disagree to strongly agree, where 1= strongly disagree, 2 = disagree, 3 = indifferent, 4 = agree, 5 = strongly agree, please indicate your level of agreement for each statement.



	<b>Tutors' PCK</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Undecided</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>No</b>		1	2	3	4	5
1	Tutor presents interesting and captivating introduction					
2	Tutor takes into account prior knowledge of students.					
3	The design of tutor's lessons incorporates tasks, roles, and interactions.					
4	Tutor uses diverse approach when teaching grammar lessons					
5	Tutor provides adequate time and structure for reflection					
6	Tutor encourages students to talk and share ideas.					
7	Tutor makes sure the pace of the lesson was appropriate for the developmental level/ needs of the students and the purpose of the lesson.					
8	Tutors' questioning methods are likely to enhance the development of students' conceptual understanding.					
9	Tutor explains things carefully to students to help you avoid mistakes					
10	Tutor displays expectation of possible difficulties students may face during instruction and address them					
11	Tutor represents and formulates the English Grammar content that make it comprehensible to others.					
12	Tutor uses appropriate teaching methods to achieve set objectives					
13	Tutor uses appropriate teaching resources and differentiated activities to cater for students' differences					
14	Tutor involves students in using teaching resources					
15	Tutor implements teaching based on provided time allotment					
16	Tutor asks students to work in pairs or small group					
17	Tutor encourages students to ask questions during English Grammar lessons					
18	Tutor distributes questions evenly to students					

19	Tutor handles students' questions in a professional way					
20	Tutor welcomes diversity of ideas from students					
21	Tutor reflects and summarizes his/her teaching					
22	Tutor closes teaching by keeping students on task					
23	Tutor always gives feedback to students on their class work, homework and class tests.					
24	Tutor has several ways of assessing students' understanding of content taught					
25	Tutor effectively integrates the content and method of teaching a topic and the characteristics of learners.					



**Section D: Students' Level of Understanding of Grammatical Concepts**

10. Instruction: Please, indicate your level of understanding of these grammatical concepts. In a continuum of very poor to very good, where 1= very poor, 2 = poor, 3 = fair, 4 = good, 5 = very good, please indicate your level of understanding of the various grammatical concepts.

Students' level of understanding of grammatical concepts	Very Poor	Poor	Fair	Good	Very Good
	1	2	3	4	5
Forms of word classes					
Types of word classes					
Functions of word classes					
Meanings of word classes					
Grammatical environment or position of the word classes in a construction					
Subject-verb agreement					
Phrases/Group					
Clauses					
Sentences (types and kinds)					
Ambiguity					
Conjunction					

## APPENDIX IV

## UNIVERSITY OF CAPE COAST

## DEPARTMENT OF ARTS EDUCATION

## TEST

**Instructions:** Indicate Your GENDER and Answer ALL Questions from each Section

**Gender: Male / Female**

**SECTION A: WORD CLASSES**

Identify the word classes (e.g. noun, verb, etc.) of each of the underlined words as used in the passage below.

The <sup>1</sup>onset of education is seen as <sup>2</sup>essentially serving the needs of Africa. This means, in particular, is helping to raise the standard of living of the people by increasing the <sup>3</sup>productive capacity of the land, <sup>4</sup>widening and deepening its resources. And the <sup>5</sup>challenge is students simply cannot <sup>6</sup>meander their way through education designed for Europe, and, even its continent of origin, felt increasingly to be <sup>7</sup>unsatisfactory. <sup>8</sup>What is more essential is more agricultural education and more technical education which will <sup>9</sup>facilitate industrialization. It is good that both types of education are seen as needs. <sup>10</sup>Until that is done, exclusive preoccupation with one or the other would result in unbalance in the economy.

**(10 marks)**

- |    |     |
|----|-----|
| 1. | 6.  |
| 2. | 7.  |
| 3. | 8.  |
| 4. | 9.  |
| 5. | 10. |

**SECTION B: FUNCTIONS OF WORD CLASSES IN CONTEXT**

Identify the syntactic function (e.g. subject or object) of the underlined words/phrases in the following sentences.

1. Do you love the girl so much to die for her?
2. Kofi killed the cat this morning.
3. The mouse run to the kitchen while we were cooking.

4. The lady who decided to leave college after failing all subjects has changed her mind.
5. Nana Akosua Anim slapped me because I offended him.
6. This morning, the church sang 'It is well with my soul' throughout the morning session.
7. I bought Kofi a mobile phone.
8. The man in blue shirt decided to vote for Kofi.
9. The students elected John SRC president.
10. I gave Mary a present.

Differentiate between a subject and an object function of a sentence.

.....  
.....

(10 marks)

**SECTION C: CONCORD**

Select the appropriate verb for the subject (using the basic rule of subject-verb agreement) in the following sentences.

1. Nana Akosua Anim and her brothers (**has, have**) left the school.
2. Dogs (**bark, barks**) anytime there is a stranger around.
3. Ernest (**is, are**) going on a trip to France.
4. The players (**was, were**) allowed to go for a break before the final game.
5. TV3 news (report, reports) that three people died in yesterday's gory accident at Suhum.

Explain the basic rule of subject-verb agreement applied here

.....  
.....

(5 marks)

## APPENDIX V

## ETHICAL CLEARANCE BY THE INSTITUTIONAL REVIEW

## BOARD

## UNIVERSITY OF CAPE COAST

## INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 0558093143 / 0508878309

E-MAIL: [irb@ucc.edu.gh](mailto:irb@ucc.edu.gh)

OUR REF: IRB/C3/Vol.1/0070

YOUR REF:

OMB NO: 0990-0279

IORG #: IORG0011497

14<sup>TH</sup> MARCH 2023

Ms Clara Ofosua Frempong  
Department of Arts Education  
University of Cape Coast

Dear Ms Frempong,

**ETHICAL CLEARANCE – ID (UCCIRB/CES/2022/47)**

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research on **Investigating the Pedagogical Content Knowledge in Teaching Grammar at the Colleges of Education in Ghana**. This approval is valid from 14<sup>th</sup> March 2023 to 13<sup>th</sup> March 2024. You may apply for a renewal subject to the submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit a periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Kofi F. Amuquandoh'.

Kofi F. Amuquandoh

**Ag. Administrator**

ADMINISTRATOR  
INSTITUTIONAL REVIEW BOARD  
UNIVERSITY OF CAPE COAST

APPENDIX VI

INTRODUCTORY LETTER BY THE DEPARTMENT OF ARTS  
EDUCATION

UNIVERSITY OF CAPE COAST  
COLLEGE OF EDUCATION STUDIES  
FACULTY OF HUMANITIES AND SOCIAL SCIENCES EDUCATION  
DEPARTMENT OF ARTS EDUCATION

TELEPHONE: +233 03321 35411/ +233 03321 32480/3  
EXT. (268), Direct: +233 03321 35411.  
Cape Coast, Ghana  
Telegrams & Cables:  
University, Cape Coast

University Post Office  
Cape Coast, Ghana



OUR REF: DAsE/I  
YOUR REF:

Date: 16<sup>th</sup> June, 2023

TO WHOM IT MAY CONCERN  
(LETTER OF INTRODUCTION)

This is to certify that the understated name:

**MS CLARA OFOSUA FREMPONG**

is a Phd student in the Department of Arts Education of the University of Cape Coast, Ghana. She is required to carry out a research study on the topic "INVESTIGATING THE PEDAGOGICAL CONTENT KNOWLEDGE IN TEACHING GRAMMAR AT THE COLLEGE OF EDUCATION IN GHANA".

I would be grateful if you would offer her any assistance that she needs.

A handwritten signature in blue ink, appearing to read 'Charles Adabo Oppong'.

**PROF. CHARLES ADABO OPPONG**  
**HEAD OF DEPARTMENT**