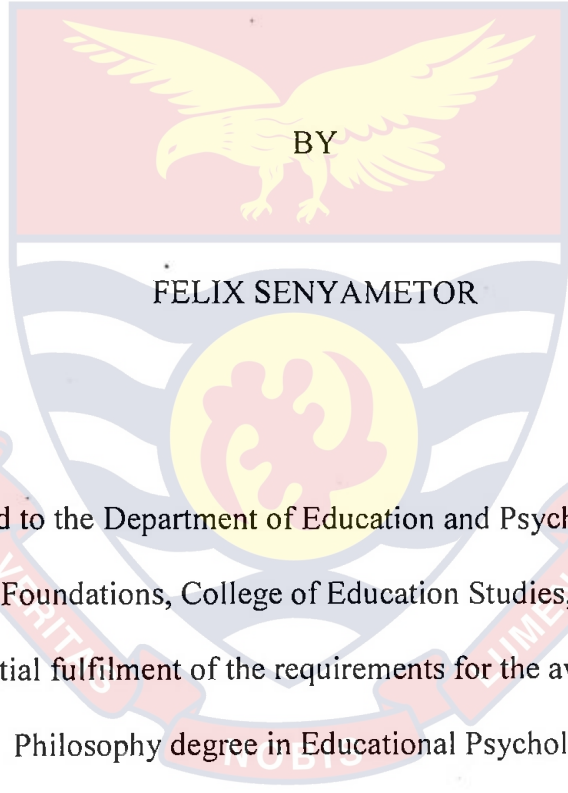
UNIVERSITY OF CAPE COAST

PREDICTABILITY OF INSTRUCTIONAL QUALITY ON TEACHER EFFECTIVENESS IN THE PREPARATION OF TEACHERS AT THE COLLEGE OF DISTANCE EDUCATION UNIVERSITY OF CAPE COAST



BY

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Thesis submitted to the Department of Education and Psychology of the Faculty of Educational Foundations, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy degree in Educational Psychology

JULY 2019

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: 03-07-2019

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Supervisors' Declaration

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

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ABSTRACT

The purpose of the study was to examine the impact of instructional quality on trainee-teacher effectiveness in the delivery of Distance Education (DE) in Ghana, focusing on College of Distance Education, University of Cape Coast (CoDE, UCC). The descriptive survey design was adopted with a quantitative approach. Total population involving 1,837 CoDE course tutors and all CoDE students at all the 76 study centres offering education programmes totalling 51,456 was used. The sample size for the study was 726, made up of 397 trainee-teachers and 329 course tutors. The proportionate stratified random sampling approach was employed to select respondents who completed the questionnaire instruments. Both descriptive and inferential statistics were used to analyse the data. The results revealed that pedagogical quality and quality evaluation were the dimensions of instructional quality that were highly perceived by trainee-teachers of the college. The study showed that, whenever trainee-teachers demonstrate high level of competence in terms of subject matter knowledge, lesson presentation skills, class management and control and lesson note preparation, they increase the extent to which their level of teaching meets pre-specified standards and goals of the college. It was recommended from the study that management of the college should put in place appropriate support services in all the study centres to guide both tutors and students on appropriate instructional behaviours.

KEY WORDS

Distance education

Instructional quality

Trainee-Teacher effectiveness

Trainee-teacher

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DEDICATION

To my daughter, Seyram Senyametor.

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LIST OF ACRONYMS

CCE	Centre for Continuing Education
CE	Continuing Education
CoDE	College of Distance Education
DE	Distance Education
DL	Distance Learning
GES	Ghana Education Service
IRB	Institutional Review Board
JHS	Junior High School
KNUST	Kwame Nkrumah University of Science and Technology
LSSQ	Learner Support Services Quality
NCTE	National Council for Tertiary Education
OCTP	On-Centre-Teaching Practice
ODL	Open Distance Learning
PASW	Predictive Analytic Software
PQ	Pedagogical Quality
QE	Quality Evaluation
QF	Quality of Faculty
QI	Quality Infrastructure
QIn	Quality Interaction
SDT	Self-Determine Theory
SEQI	Student Evaluation of Quality Instruction
SHS	Senior High School
SPSS	Statistical Package for Social Sciences
TAFS	Test Analysis for Surveys

TCI	Teaching Competence instrument
TLA	Teacher-Learner Activity
TSSQ	Tutor Support Service Quality
TTEA	Trainee-Teacher Efficiency Assessment
UCC	University of Cape Coast
UDS	University for Development Studies
UEW	University of Education, Winneba
UG	University of Ghana
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

The concept of Distance Education (DE) has been embraced by nations all over the world as a cost-effective strategy and an answer to the teaming youth and working adults who want to upgrade their competencies and skills. Distance education has also become very useful to people, especially those who cannot either gain admission into tertiary institutions due to inadequate facilities in the conventional systems or due to their geographic locations and job circumstances cannot access higher education (Garrison, 2014). According to Garrison (2014), two main factors have led to an increased interest in distance learning: the growing need for continual skills upgrading and retraining; and the technological advances that have made it feasible to teach many subjects at a distance. As a force contributing to social and economic development, DE is fast becoming an accepted and indispensable part of the mainstream educational systems in both developed and developing countries (Sen & Kamat, 2016). The problem with DE, however, is the issue of achieving parity in terms of quality instruction with that of the conventional system, student support system and students' learning outcomes with relatively minimal cost (Dankyi, 2016; Schlosser & Anderson, 2012; West, 2015). This study looks at how these issues could be explained and investigated by assessing the impact of instructional quality on trainee-teacher effectiveness in DE, focusing on College of Distance Education (CoDE), University of Cape Coast (UCC) trainee-teachers.

Background to the Study

Globally, DE in most cases shares the concern for openness and flexibility. However, definitions tend to focus on the possibility of communication between participants in the learning process across time or space, particularly as brought about by technologies (Scott, 2012). United Nations Educational, Scientific and Cultural Organisation (UNESCO) (as cited in Agyemang, 2014) describes DE as an educational process in which a significant proportion of the teaching is conducted by someone removed in space and/or time from the learner. This definition covers most of the traditional approaches to distance teaching, although it does not reflect the fact that the learners are also usually dispersed in space and/or time. This means that the learner is absorbed of the heavier responsibility of doing most of the learning by discovery. The instructor is rather placed at the centre of the teaching learning process. DE may involve the use of a range of media, such as print, written correspondence, audio, video and computer based media and networks as well as multimedia, both for presentation of information and for communication between participants (Vassala, 2015).

Distance Learning (DL), on the other hand, is often used when one wants to address a whole range of related forms of teaching and learning, without concentrating too much on exact delineation and definition. It stresses at the same time openness concerning access, organisation and methods, flexibility in delivery and communication fact patterns, and the use of various technologies in support of learning (Thorpe, 2013). DL embraces the fact that the learners are placed at the centre of the teaching and learning process where they discover most of the

concepts themselves through independent interaction with the study materials. This study addresses distance education and distance learning in particular; however, the broader term (DL) is chosen in order to touch on comprehensive aspects of learning at distance rather than technicalities.

Nations and governments all over the world have come to realise that educating their citizens by whatever means feasible and legitimate is key to national and global socio-economic transformation needed for growth and development. However, research has shown that governments and universities the world over do not have adequate facilities to accommodate even half of the teaming populations who want to have access to higher education through the conventional mode (Moore & Kearsley, 2014; Sekyi, 2013). According to Moore and Kearsley (2014), there are about 88 million people in the world who could not access higher education due to geographic, social and cultural barriers. It is in the light of this that developing and developed countries are gravitating their efforts towards Open Distance Learning (ODL) programmes via technology to help people all over the world to break social and geographic barriers to education.

Most developing countries have seen the need to counter the devastating effects on their teaming populations' lack of access to higher education through DL programmes in order to beef up the manpower needs of their countries. They focused on expanding work for school equivalence, for teacher education, especially in relation to health (UNESCO, 2014). It is gratifying to note that the trend in West Africa with regard to DL is very bright. In Nigeria, Kenya, Uganda and other African countries, DL is delivered through print, newspapers, audio,

and video-cassettes, radio, telephone to about 100,000 students (UNESCO, 2014). In most of these countries, attention of DL was initially directed at training of teachers. Currently, these countries provide DL programmes to many categories of people including teachers, bankers, nurses, professionals, and artisans (Akrofi, 2013; Hannay & Newvine, 2016).

Often DL has been mainly used to widen access to basic education and maintain improved quality in the conventional systems (Jannatul-Firdaos, 2014). Correspondence education has been the main medium of instruction coupled with face-to-face facilitations and radio in the sub-region. Radio transmitters reach over 60 percent of the population, whereas television is, however, confined to major towns. Countries running DL in the sub-region include Burkina Faso, South Africa, Botswana, Mozambique, Malawi, Tanzania, Zambia and Ghana (UNESCO, 2014).

Considering the challenges of education and development in Ghana, it is not surprising that distance education is seen as an important alternative approach and strategy that would make a significant contribution towards solving the problem of access, quality and equity in education (Anamuah-Menasah, 2015). It was appropriate on the part of stakeholders in education when they ensured that distance education formed part of the educational system since it is giving opportunities for those qualified students, workers and other professional who cannot join the regular school to have tertiary education (Agyemang, 2014; Dankyi, 2016). In the view of Milledzi (2010), Ghana's basic school teachers prefer distance education for reasons which include: less cost than the

conventional system, flexibility to get higher educational qualification; less competitive to gain admission; family commitments which make it difficult for them to leave home, and difficulty in getting study-leave with pay.

The introduction of DL in the country has made large number of the Ghanaian working population upgrading themselves through DL. Currently, some universities in Ghana including University of Education, Winneba (UEW), University of Cape Coast (UCC), University of Ghana (UG), Kwame Nkrumah University of Science and Technology (KNUST), and University for Development Studies (UDS) have fully embraced distance education. UCC started the distance education in 1997 with total enrolment of 750 students. There has been a tremendous increase in the enrolment of students of distance education in UCC. The enrolment stands at 48,622 as at 2016/17 academic year (CoDE, UCC, and 2017a).

The case of increase in students' enrolment in the various public universities with regard to DL is a typical scenario of the surge in preference for distance education. However, instructional quality and trainees' effectiveness must be considered in terms of major stakeholders' perceptions and their satisfaction with the programme (Scott, 2012; Vassala, 2015), since it will ensure continue quality education in the programme. According to Carr (2013), there has been continued negative perception towards DL which to a large extent has influenced the enrolment figures in the various universities negatively. This situation may be as a result of poor instructional quality and ineffectiveness of graduates of DL programmes (Mbwesa, 2014; West, 2015).

Furthermore, the National Council for Tertiary Education (NCTE, 2016) indicated that the growth rate of distance students' enrolment over the period from 2010/2011 to 2013/2014 is 6.5 percent per annum. Enrolment in UEW reduced over the last three years which is a worrying trend. There was also a decline in enrolment in UG in 2013/14. KNUST and UCC have been consistent in their growth. The annual growth rate for UCC is 34.4 percent. This annual growth makes the total enrolment in the distance mode at UCC more than that of the conventional mode as outlined in Table 1.

Quite apart from the negative perception people are having towards DL with regard to instructional quality and effectiveness of it products (Carr, 2013), there is also an increase in the number of private and quasi-public universities who are also offering DL. These include Accra Institute of Technology (AIT), Ghana Telecommunication University College, Ghana (GTUCG), Ghana Institute of Management and Public Administration (GIMPA), Commonwealth University (CU), Valley View University (VVU), African Virtual University (AVU), Atlantic International University (AIU), and Jackson College of Education (JCE) (NCTE, 2016). This study, however, was confined to the UCC. UCC basically has an objective of providing opportunities for people to pursue higher education; train more professional teachers for all levels of education in the Ghana Education Service (GES) and train high calibre personnel for national development (UCC, 2016). Others are; raise the professional competence of serving teachers and personnel of the GES, as well as accounting and secretarial personnel in public service, and industry through Continuing Education (CoDE, 2014).

Table 1

Student Enrolment in Distance Education in Public Universities: 2010/11 – 2013/14

	2010/11			2011/12			2012/13			2013/14		
Institutions	M	F	T	M	F	T	M	F	T	M	F	T
UG	4,621	2,589	7,210	5,319	3,012	8,331	5,712	3,463	9,175	4,187	2,767	6,954
KNUST	2,592	573	3,165	3,860	927	4,787	5,131	1,322	6,453	8,737	2,244	10,981
UCC	11,947	7,060	19,007	18,118	19,407	17,881	17,321	11,027	28,348	20,152	15,310	35,462
UEW	10,322	13,285	23,607	8,996	11,268	20,264	6,730	8,833	15,563	5,876	7,380	13,256
Total	29,482	23,507	52,989	18,175	15,207	33,382	34,894	24,645	59,539	38,952	27,701	66,653

Source: NCTE (2016)

In CoDE, UCC, students are assessed based on the number of units covered in their study modules during tutorials every six weeks. Questions for both quizzes and examinations are set by chief examiners of the university who wrote the modules. Every student pursuing education programme in the College undertakes practice: On and Off centre teaching practices. Therefore, all second year students of the Diploma programmes do On-Centre-Teaching Practice for one year before entering the final year whereas their degree counterparts do theirs in the second semester of the first year. The Off-Centre Teaching Practice is done in the final year of training. The On-Centre-Teaching Practice is organised, supervised and assessed by the course facilitators (tutors) while the Off-Centre-teaching practice is supervised and assessed by senior members of the university and retired GES teachers or lecturers called mentors. Course facilitators determine the level of effectiveness and efficacy of DE students using teacher effectiveness or assessment scale known as 'Form A'. Senior members and mentors also do same for the Off-Centre Teaching Practice.

Despite all these interventions by CoDE, many DL students experience difficulties with irregular and untimely feedback of assessment results from the afore-mentioned assessors, resolution of students' problems concerning incomplete results and untimely supply of study modules. Some students also complain about insufficient duration of time for doing the On-Centre-Teaching Practice, course facilitators too complain about the huge number of students that they have to supervise every two weeks (Denkyi, 2013). Some senior members and mentors on the other hand who supervise students during the Off-Centre

Teaching Practice too fingered that some students demonstrate very low level of effectiveness and sometimes some of them even fail (Sekyi, 2013).

All these call to question the quality and efficacy of DL instruction and student support system that exist for trainee-teachers on distance mode of the university. An area of concern to many stakeholders, private and public entrepreneurs or employers has to do with the quality of DL products. Therefore, the focus of this study was to examine the predictability of instructional quality on teacher effectiveness in the UCC DL mode during trainee-teacher preparation.

Statement of the Problem

According to Simonson (1999), the major challenges common to all nations including Ghana on the delivery of instruction in DL are technology, flexibility, learner to learner interaction, individualisation of instruction and learning, and practicalisation of instruction. Others are logistics, strong quality student support system and hiring and training high calibre facilitators to enhance learner effectiveness.

UCC has succeeded immensely in fulfilling its mandate in the production of thousands of teachers and even other professionals in business and commerce to man the various sectors of the Ghanaian economy. However, an area of concern, through my experience and observation, which needs to be addressed in the University, has to do with the quality dimension of instruction in terms of quality pedagogical approach, student support system, lesson assessment and evaluation. These challenges need to be addressed to enhance the relevance and competitiveness of the university's DL locally and internationally. Other

researchers have also posited that the most significant factors that institutions providing DL are facing are instructional quality and trainees' effectiveness (Alharbi, 2017; Badu-Nyarko, 2010; Dankyi, 2016; Hannay & Newvine, 2016; Owusu-Boateng & Essel, 2011). According to Hannay and Newvine (2016), these challenges culminate into the negative perception that stakeholders are having towards DL graduates.

Some of these challenges are not different from those identified by Mbwesa (2014) which pertain to the quality of instruction, faculty quality, pedagogical quality and student support services. Mbwesa (2014) further outlined the following challenges as specifically related to distance learners' academic progress; resolution of students' problems regarding untimely feedbacks on examination results, incomplete results (ICs), untimely delivery of study materials, difficulty in accessing their detailed results and attestations. Others are poor infrastructural quality, poor quality of facilitators' evaluation of trainee-teacher effectiveness and limited use of technology in the delivery of services and instruction (Alharbi, 2017; Dankyi, 2016; Hannay & Newvine, 2016). For instance, most students travel from very far and near to either their study centres or CoDE in Cape Coast just to take their detailed results, attestations, receive feedbacks on incomplete results relating to quizzes or results of their quizzes and end of semester results.

Furthermore, challenges including ineffective supervision of On-Centre Teaching Practice, lack of library facilities at the study centres to support instructional activities, writing and presentation of project work (Dankyi, 2016).

These challenges are likely to have telling effects on trainee-teacher effectiveness. CoDE (2016) monitoring and evaluation survey report revealed that about 30 percent of Senior High School (SHS) graduates pursuing CoDE education programmes from seven regions of the country without any initial teacher training from Colleges of Education and were not already practicing as non-professional teachers in the classroom had challenges with professional preparation of lesson plans. This is an indication of low teacher effectiveness since lessons plans are the genes or blueprints and forms 50 percent of quality teaching and effectiveness (Mbwsa, 2014). In a related development, other researchers added that, notwithstanding the important role and increased popularity of DL, the quality of higher education through the distance mode has been called to question with regard to the instructional quality and effectiveness of graduates of DL programme (Denkyi, 2013; Hannay & Newvine, 2016; Helland, 2012).

An effective teacher refers to the one who gets things done in the right and most effective ways in terms of class management, time management, professional preparation of lesson plans, instructional materials, engagement of time on task, and getting things organised in order to enhance the output or results of learners in the teaching-learning process (Alharbi, 2017). An effective teacher, therefore, is rich in both subject matter and action system knowledge in terms of pedagogical competence, statement of instructional objectives, lesson introduction, and development of teacher-learner activity, lesson closure and evaluation.

According to Hannay and Newvine (2016), if stakeholders doubt the quality of education through DL, patronage, confidence, and interest of prospective applicants would significantly drop posing institutional and global economic crises. Sen and Kamat (2016) in a similar vein posited that the creation of similar learning experience in DL with regard to quality facilitators and learning resource comparable to traditional systems is one leg of ensuring quality DL instruction. The other aspect, according to Sen and Kamat (2016), is the effectiveness of learners produced to compete equally on the job market globally with the traditional system counterparts.

The discussion so far shows that there are significant challenges confronting DL programmes, especially instructional quality and trainees' effectiveness. The question one would like to seek an answer to is whether there is significant relationship between the DL challenges and the overall quality of instruction by the distance mode in UCC as well as trainee-teacher effectiveness? There have been studies in DL about the effects of DE on teacher performance (Dankyi, 2013), DL our hope for a sustained human capacity development in Ghana (Anamuah-Mensah, 2015), and as a strategy for training teachers in Ghana with regard to its problems and prospects (Koomson, 2007). Other studies also touched on the perceived effects of DL on teacher performance (Kwakyewaa, 2013), study habit among UCC distance learners (Ahiatrogah, Deku & Bakari, 2008: Dankyi, 2013) and conceptual model on interactivity for effective distance learning in higher education (Farajollahi, Zare, Hormozi, Sarmadi, Zarifsanaee, 2010).

Unfortunately, it appears that there has not been any scientific study in existing literature in Ghana on quality dimension of instruction on DL in general and UCC in particular. It is to fill this void in research that this study was carried out to assess the issue of predictability of instructional quality on teacher effectiveness during trainee-teacher preparation in DL, focusing on CoDE, UCC.

Assumptions of the Study

The study was carried out based on the following assumptions:

- Teacher-trainee responses on instructional quality dimensions survey reflected their best effort and truthfulness.
- Course tutors responses on their support service quality, and their assessment of teacher-trainee effectiveness reflected their best effort and truthfulness.
- Teacher-trainees can report on the instructional quality of the college.
- Course tutors can assess teacher-trainees' effectiveness.
- The variables of interest to the researcher are normally distributed in the population.

Purpose of the Study

The purpose of the study was to investigate the predictability of instructional quality on trainee-teacher effectiveness in the preparation of trainee-teachers in DL, focusing on CoDE, UCC. Specifically, the study sought to examine how quality evaluation (QE) of instruction, learner support services quality (LSSQ), pedagogical quality (PQ), quality infrastructure (QI), quality of

faculty (QF), quality interaction (QIn), and tutor support service quality (TSSQ) relate to trainee-teacher effectiveness in DL. The study also examined how these instructional quality variables predict trainee-teacher effectiveness. Lastly, the study also determined the influence of gender on the study variables.

Research Questions

Based on the specific purposes of the study, the following research questions were outlined to guide the study:

1. Is there any relationship between quality evaluation of instruction by facilitators and trainee-teacher effectiveness?
2. Is there any relationship between quality learner support services in the delivery of instruction and trainee-teacher effectiveness?
3. Do there exist any relationship between pedagogical quality of course facilitators and trainee-teacher effectiveness?
4. Do there exist any relationship between infrastructure quality and trainee-teacher effectiveness?
5. Do there exist any relationship between tutor support services and trainee-teacher effectiveness?
6. Is there any relationship between quality of faculty and trainee-teacher effectiveness?
7. Is there any relationship between quality interaction and trainee-teacher effectiveness?

8. To what extent do the dimensions of instructional quality predict trainee-teacher effectiveness in the preparation of teachers in distance education at CoDE , UCC?

Research Hypotheses

In line with the last purpose of the study, the following hypotheses were formulated in order to test the influence of gender on the study variables.

1. H^1_0: There is no statistically significant gender difference in trainee-teachers with regard to their views on quality infrastructure.

   H^1_1: There is a statistically significant gender difference in trainee-teachers with regard to their views on quality infrastructure.

2. H^2_0: Gender has no statistically significant influence on trainee-teachers' views on quality of faculty.

   H^2_1: Gender has a statistically significant influence on trainee-teachers' view on quality of faculty.

3. H^3_0: There is no statistically significant gender difference in trainee-teachers' views on the quality of learner support services system.

   H^3_1: There is a statistically significant gender difference in trainee-teachers' views on the quality of learner support services system.

4. H^4_0: Gender has no statistically significant influence on trainee-teachers' views on the quality of course facilitators' interaction.

   H^4_1: Gender has a statistically significant influence on trainee-teachers' views on the quality of course facilitators' interaction.

5. H^5_0: There is no statistically significant gender difference in trainee-teachers 'views on the quality of instruction evaluation by course facilitators.

   H^5_1: There is a statistically significant gender difference in trainee-teachers' views on the quality of instruction evaluation by course facilitators.

6. H^6_0: Gender has no statistically significant impact on trainee-teachers' views on tutor support services quality.

   H^6_1: Gender has a statistically significant influence on trainee-teachers' views on tutor support services quality.

7. H^7_0: There is no statistically significant gender difference in trainee-teachers with regard to their views on pedagogical quality.

   H^7_1: There is a statistically significant gender difference in trainee-teachers with regard to their views on pedagogical quality.

8. H^8_0: There is no statistically significant gender difference trainee-teachers' effectiveness.

   H^8_1: There is a statistically significant gender difference in trainee-teachers' effectiveness.

Significance of the Study

It is anticipated that the outcome of this study would serve as a blueprint for universities mandated to train teachers via DL. It would also enlighten stakeholders on issues affecting quality learning and instruction in the delivery of distance education in Ghana. It is further hoped that the outcome of this study will

inform both governmental and institutional (Universities) policies on the direction, prospects and future quality development of DL in Ghana. Besides, the study will significantly add to the development of knowledge on the issue of quality instruction and teacher effectiveness by the distance mode in Ghana, hopefully.

Also, designers, students and instructors of distance education may benefit from the use of this research by creating more effective learning environments specifically designed to accommodate a variety of individual differences to ensure high level of instructional quality and trainee teacher effectiveness. It is also envisaged that the study will aid course coordinators, course tutors and other stakeholders see the need to ensure that there is high level of instructional quality with the provision of relevant educational materials and support services that can facilitate teaching-learning. Through dissemination of the outcome of the study, the researcher can organise seminars and workshops for course tutors on the need to go extra mile in helping students not only to develop good and effective learning-styles but also improve their instructional quality for improved teacher effectiveness.

Again, it will hopefully help regional and centre coordinators in the various study centres across the country to be more proactive and innovative to evaluate the relevant and quality of instruction delivered by the tutors to enhance the quality of the education provided and to improve trainee effectiveness. Busari (2017) suggests that college-age populations are continuing to grow in most African countries since their campuses are not physically large enough to

accommodate the new numbers of students. Distance education allows campuses the physical flexibility of being able to accommodate students' needs without structural modifications as well as the ability to increase enrolment by reducing the barriers associated with physical proximity. The findings will help enhance the output of distance education in the country which in the long run will narrow the problem of not being able to admit students into the mainstream system as a result of the inadequate facility.

Furthermore, this study will serve us a guide to planners and implementers of DL programmes to structure or reorganise the contents of their programmes to meet the current and specific needs of trainee-teacher effectiveness. In the same vein, this study will bring to the notice of DL programme developers the various student support services that are needed in the various study centres across the country necessary for academic success. Finally, the study will serve as a source of literature to future researchers in academia and other organisations who intend to embark on similar research works pertaining to distance education.

Delimitation

This study was delimited to the predictability of quality instruction on trainee-teacher effectiveness in distance education at CoDE, UCC. There are many factors which can serve as predictors of trainee-teacher effectiveness. however, the study was delimited to instructional quality with regard to pedagogical, faculty, infrastructure, interaction, evaluation, learner support service, and tutor support service qualities. The college runs both business and

education programmes in 90 study centres including six master degree study centres across all 10 regions of Ghana. However, this study was delimited to all second year students and course tutors in the 10 regions of Ghana in only 76 selected centres running education programmes in terms of the research questions and hypotheses of the study. The second year students were considered because they are the only group of students being supervised by their tutors during On-Centre Teaching Practice.

Limitations

The study would have been conducted to cover all final years distance education students in all the ten Regions of Ghana but the researcher was not in a good position to undertake such a venture due to limited time logistical constraints. The limited area of study coupled with the sampling procedure may affect the generalisation of the findings of the study to all distance students since only 76 study centres out of 90 of CoDE, UCC were considered. That is, the study covered only CoDE, UCC, which is a public university; however, other private universities such as Valley View University also run the distance education model in Ghana. It will have been more interesting to consider a private university for effective comparative analysis. This is so because an expansion of the present study to include a private university would promote an in-depth knowledge into the phenomenon of instructional quality and trainee-teacher effectiveness.

Therefore, the results of the study can best be generalised to the target population of the study only. The generalisation of the findings of this study to

other groupings with similar characteristics must, therefore, be done with caution. Also, with this limitation in mind, explanations regarding the significance of the study should be handled cautiously. In terms of the questionnaire, some may not be so apt in order to elicit every needed data which would perhaps, add to the quality of information required for the study since most of the items/statements were close-ended in nature.

Furthermore, the collection of the data was through the questionnaire. As a result, the responses that were obtained might not be the true reflection of the reality because as descriptive survey it may have delved into private and emotional issues of the respondents. Again, copies of questionnaire were given out to respondents to complete on their own. The likelihood that they would confer with one other could affect the quality of the study. These limitations notwithstanding, resultant findings of the study would constitute a strong basis for generalisation.

In addition, the study assumed that the selected respondents with regard to the trainee-teachers doing OCTP and the course tutors had sufficient knowledge and understanding of the concepts, issues and what is expected of them to answer the items in the questionnaires accurately and truthfully. However, this was not verified. Lastly, the findings and conclusions of the study may not be projected for the future since issues related to instructional quality and teacher effectiveness keep changing with time and place.

Definition of Terms

Evaluation and assessment dimension refers to activities and policies concerned with periodic students' learning assessment and feedback including trainee evaluation of their instructors (facilitators).

Faculty quality dimension deals with policies and procedures for engaging high calibre of facilitators and support for their welfare.

Infrastructure dimension refers to the policies and measures that ensure sound physical and technology infrastructure as well as the provision of physical spaces.

Pedagogical and interactive tasks dimensions refers to learning activities instructional methods that promote learner interactions in various forms of distance learning as well as delivery of suitable and quality content to learners.

Quality teaching refers to the availability of what is expected as teaching according to the unvaried established standards of UCC, desired standard of teaching, adequate number and level of teaching per week.

Student support dimension deals with policy and guidelines for technical, financial, psychological, social, and administrative support, flexible fee payment systems, timely provision of study materials that are individualized and tailored to suit current needs and trends.

Teacher effectiveness refers to the extent to which trainee-teacher effectiveness level of teaching achieves or meets pre-specified standards and goals (Geelam, 2013). It is course tutor's belief in his or her students' personal

ability to execute the courses of action needed to positively affect their work performance.

Trainee-teacher refers to learners or students undergoing training to be full-fledged teachers upon completion of their programmes of study.

Organisation of the Study

The study is organised into five chapters. Chapter One is the introduction which covers the background to the study, a statement of the problem, purpose of the study as well as research questions and hypotheses. It also presents the significance of the study, delimitation and limitations of the study. Chapter Two focuses on the review of existing relevant and related literature on the study. The review is organised under three major areas, namely the concept, theoretical and empirical reviews of both predictor and criterion/outcome variables. Chapter Three also describes the methodology that is used in the study. This includes the study institution, approach to the study, research design, the population, sample and sampling procedures, research instruments, validity and reliability of instruments, ethical issues, data collection and data analysis procedures. Chapter Four presents the analysis of data, results and the discussion of the findings. The final chapter, which is chapter Five, presents the summary, conclusions, and recommendations. The chapter further presents the suggestions for further study.

The purpose of the study through examination of background research regarding instructional quality, trainee-teacher effectiveness, and distance education were identified in this chapter. Along with the purpose and scope of the study, a statement of the problem was examined. Major research questions and hypotheses were outlined. The significance of the study was discussed and definitions of terms were listed. On these foundations, the study proceeded with a detailed description of the research which is a complete review of literature as provided in chapter Two.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter mainly deals with the review of existing, relevant and related literature on the concept of quality instruction and trainee-teacher effectiveness, focusing on CoDE, UCC students. The review section enabled me to have a better understanding of the problem, identify where gaps exist in the research literature and most importantly generate relevant methods. It focused on the interaction of the concept and themes as they relate to the theoretical and conceptual framework of the study. The conceptual reviews were presented first, followed by the theoretical review. Also, some related empirical studies were also reviewed in order to gain knowledge by means of direct and indirect observation of previous researchers. The structure of the chapter is as follows:

Conceptual Review of the Study

The following concepts were reviewed in relation to the study:

1. Instructional quality
2. Trainee-teacher effectiveness
3. University of Cape Coast, College of Distance Education

Theoretical Framework of the Study

The following theories were reviewed in relation to the study:

1. Theory of constructivism
2. Simonson's equivalency theory

3. Bandura's self-efficacy theory
4. Transactional distance theory
5. Self-determined theory

Empirical Review

Empirical research reports were reviewed in the following areas related to the study:

1. Pedagogical quality and trainee-teacher effectiveness
2. faculty quality (qualification) and trainee-teacher effectiveness
3. Learner/instructor support services, infrastructure qualities and trainee-teacher effectiveness
4. Quality evaluation and trainee-teacher effectiveness
5. Quality interaction and trainee-teacher effectiveness

Conceptual Review

Instructional Quality

Instructional quality has become an increasing phenomenon in the educational landscape such that no education policy or programme can do away with. Instructional quality increasingly is defined by measuring its positive influence on student learning outcomes (Rahman, Jumani, Akhter, Chisthi & Ajmal, 2011). In most cases, emphasis is on the quality level of instruction with regard to pedagogical skills, teacher qualification, infrastructure, student-teacher interaction, evaluation, student support services, and teacher support services (Perez, 2013; Ogunleye, 2013). Value added studies, measuring student achievement levels that are matched with individual teachers over a number of

years, have suggested that there are significant differences in teacher effectiveness for improving student learning. The evidence for this, however, is not unanimous (Bird, 2017).

Quality instruction on the part of the trainee-teacher is proposed to be residual, additive and cumulative (Abderahman, 2012). Measuring such causal claims with value-added studies has been shown to be inconclusive, where causal arguments and validity may be questioned (Coe as cited in Azkiyah, 2013). As a result, the definition of trainee-teacher effectiveness, which is largely influence by instructional quality, remains consistent, being judged according to achievement levels of trainees over a number of years. How those achievement levels are measured and understood, and by inference how quality instruction is identified, is more obscure. This is because quality instruction as a concept lacks clarity, in that quality itself is stakeholder relative (Helms-Lorenz, Slof, Vermue & Canrinus, 2017). For example, students, teachers, parents, leaders and the wider community all may have differing views on quality instruction (Yai & Wang, 2012).

In addition, definitions can vary from excellence in teaching, value for public purse (Hill & Hawk, 2017), attaining a particular purpose or simply its transformative power (Helms-Lorenz et al., 2017). Despite these variations, quality instruction is understood as student centred and its purpose is for high quality student learning outcomes, both social and academic (Albemarle, 2015). Using these studies and measures, teacher effectiveness is not marked by a set of

criteria or teaching standards, but measured or judged according to achievement levels in students over a number of years (Helms-Lorenz et al., 2017).

As a response to the public concern surrounding education, most countries including Ghana, have redefined the requirements that are intended to ensure quality education for all students. One of such areas of definition included in most policy documents aimed at teacher qualifications and instructional quality (Yai & Wang, 2012). Societies require all students to be taught by highly qualified teachers. That is, teachers with professional qualifications who are able to demonstrate subject-matter competence for the courses they teach. In order to produce such teachers, there is the need to ensure that there is quality instruction in the various institutions that produce professional teachers (Antoniou & Kyriakides, 2013).

Research has shown that the teacher is the most important school-related variable in student achievement (Wilson & Floden, 2013; Wenglinsky, 2014). Therefore, ensuring that there is high level of instructional quality among trainee-teachers is a key pillar in producing effective teachers. The question of whether trainee-teacher effectiveness differs dramatically with regard to work output is fundamental to educational research (Wenglinsky, 2014). Implications of this research are important for educational policy and practice. It can inform what characteristics are necessary for training, certifying, and hiring effective teachers to have the greatest impact on student achievement.

Although there is consensus that qualified teachers with high level of effectiveness are essential among policy makers, educational leaders, and

researchers, there is little consensus about what characteristics a highly qualified effective teacher possesses. Most of the qualities that the trainee-teacher possesses can be assessed during teaching practice. The instructional quality of a teacher largely influences his/her effectiveness positively. The next sub-topic to consider, therefore, is teacher effectiveness.

Trainee-teacher effectiveness

Generally, teachers evaluate their ability to carry out their teaching task based on the skills they have and the circumstances with which they must work. At a glance, effectiveness and efficiency in teaching are quite confusing but upon analysing, one could find out that these two qualities are related and both are important in the teaching profession. Trainee-teacher efficiency means using time during class and outside of class to the maximum (Wang & Walberg, 2012). The effectiveness level of a teacher covers areas such as objectives and core points in lesson plan, teaching methodology and delivery, and classroom organisation and management. An efficient teacher is one who teaches, and that is all. If the students learn, the teacher has been effective. Now, a teacher can be efficient without being totally effective.

When can one say a teacher is efficient? Well, a teacher can exhibit efficiency in the manner he gets things done, how he manages his class and his time in getting things done. A good example wherein a teacher can be called efficient is when he always comes to his class (and leaves) on time, with well-prepared lesson plan, instructional materials, engaged time on task, and

everything is organised regardless of output or result produced in the teaching-learning process (Abdus-Salam, 2015; Wanjala & Wanjala, 2017). How about an effective teacher? Basically, a teacher is effective when he gives his best in teaching and able to make his students learn or master the skills and turned them meaningful, relevant and applicable in real life situations (Antoniou, 2018). He is a teacher who reaches out to his pupils and can make a difference in their lives.

According to Adeyemi and Adu (2012), efficiency and effectiveness in teaching are two different things. Efficiency means doing things right while effectiveness is doing the right things. Nevertheless, there are many definitions in the literature regarding these two concepts. These two concepts should complement each other because it is hard to be an effective teacher without being efficient. Likewise, if one is an effective teacher, most likely is also efficient. The discussion so far shows that it does not necessarily mean that if a trainee-teacher is efficient, he/she is effective and vice versa. However, he/she has the chance to be one. The underlining assumption is that, students do not care what their teacher knows (efficiency) until they know that their teacher cares (effectiveness). Furthermore, trainee-teachers' effectiveness can be seen as the extent to which trainee-teachers achieve their pre-specified goals. Trainee-teachers' efficiency on the other hand is a measure of the amount of resources required in order to meet the goals. Trainee-teachers who can achieve the same goals using fewer resources are more efficient.

Measurement of Teacher Effectiveness

To understand teacher effectiveness, one needs to identify what goals or standards efficient teachers should be meeting. Geelan (2013) opined that in order to determine teacher effectiveness one needed to have some means of measuring the extent to which these standards or goals are met and what kind of evidence would be appropriate for measuring teacher effectiveness in relation to each of these goals or standards. Gardner (2014) could not agree more with Geelam (2013) when he asserted that to measure a complex concept like teacher effectiveness; one would need to define as clearly as possible the various dimensions involved. The starting point should be to assemble a group of specialist including teachers, students, and school administrators to discuss what meanings weights to attach to the agreed variables of teacher effectiveness (Gardner, 2014).

The next step, according to Gardner (2014), would be to determine teacher's through assessing practical teaching skills based on observation of a couple of lessons by facilitators using summated rating scales. Gardner (2014) further suggested that summated rating scales could also be used to measure students' perceptions of facilitators' delivery of quality instruction. Robbins and Alvy (as cited in Agezo & Frimpon, 2016) in the same vein posited that in evaluating teacher instructional quality and effectiveness, one has to zero in on two main areas when supervising or observing the trainee-teacher teach: instructional and curriculum areas, and professional areas.

Robbins and Alvy (as cited in Agezo & Frimpong, 2016) again classified instructional pedagogy and curriculum areas into three categories that ensures trainee-teacher effectiveness. The first being classroom methods and techniques. This is assessed by the way the trainee-teacher; uses a variety of instructional techniques and materials to facilitate teaching and learning; and demonstrates good questioning skills. The second is classroom climate. This is also assessed through the way the trainee-teacher provides opportunity for all students to learn and experience success, and communicates often with students and encourages classroom dialogue. The third is curriculum. This is determined by observing the way the trainee-teacher displays breadth and depth of subject matter-knowledge, and adapts content to the age and ability of learners.

With regard to the professional areas necessary for trainee-teacher effectiveness, Robbins and Alvy (as cited in Agezo & Frimpon, 2016) noted that quality instruction and effective practicum supervision geared toward trainee-teacher effectiveness are not mutually exclusive. They, therefore, classified practicum assessment during supervision into three main parts: teacher relations and communication (involves teacher's show of tolerance for peer differences and communication effectively with parents), professional competencies and qualities (looks at how the student-teacher displays regular school attendance and punctuality as well as keeping accurate classroom records), and professional growth and development (entails how teacher exhibits openness to suggestions, constructive criticism and willingness to change for the better). For instance, Robbins and Alvy (as cited in Agezo & Frimpon, 2016) came out with the

following five point rating scale for assessing trainee teacher-efficiency and performance which has been adapted for this study:

a. 1-poor (lowest level of efficiency) =20%),
b. 2-satisfactory (lower level of efficiency) =40%,
c. 3-good (higher level of efficiency) =60%),
d. 4-very good (higher level of efficiency) =80%)
e. 5-outstanding (highest level of efficiency) =100%)

These dimensions of measuring trainee-teacher effectiveness also corroborate the findings of Mbwesa (2014) and Vermula (2013). However, the dimension of trainee-teacher effectiveness adopted by this study focused on objectives and core points in lesson plan, teaching methodology and delivery, and classroom organisation and management.

University of Cape Coast, College of Distance Education

This study was confined to the University of Cape Coast (UCC). The University in the bid to fulfil its core mandate of training competent professional teachers established study centres across the 10 regions Ghana for this important purpose.

According to the University of Cape Coast (UCC) Desk Dairy (2016), the UCC established the Centre for Continuing Education (CCE) now College of Distance Education (CoDE) in 1997 to run a dual mode DL. This means CoDE does not have its own programmes. The programmes being run were taken from the various departments in the conventional system. This is done to ensure parity

in terms of quality with the conventional mode of education. The college though, established in 1997, commenced nationwide programmes in education and business in 2003 (Kwarteng, Dwarko & Boadi-Siaw, 2011). The College is an affiliate member of the West African Distance Education Association (WADEA) and has 90 study centres including four postgraduate study centres across the country with the current student population of over 55,456 (CoDE Admission Unit, 2017). Study Centres provide a vital link between CoDE and students. They are used for two main purposes:

1. To promote student autonomy and professional development.
2. To maximize the internal efficiency of the UCC distance learning system.

In fact, the university of Cape Coast (UCC) basically has an objective of providing opportunities for people to pursue higher education; train more professional teachers for all levels of Education in the Ghana Education Service (GES) and train high calibre personnel for national development. Others are; raise the professional competence of serving teachers and personnel of the GES, as well as accounting and secretarial personnel in public service, commerce and industry through Continuing Education and above all provide opportunities for applicants who, even though qualify for admission but fail to enter universities due to constrains in physical facilities (CoDE Digest, 2014).

The university in its quest to achieve the afore-mentioned objectives has appointed Regional Coordinators who are at the same level as University lecturers head the regions in the country and assisted by Centre Coordinators. In fact, they

act as a bridge and channel through which important decisions, policies and information are transmitted from the top management of the university and the Distance Students and vice versa. They also partly take oversight responsibilities of Course Tutors teaching and students' learning respectively. Their efforts contribute to thousands of students who are matriculated and graduated every year from the university.

Under the leadership of the CoDE management and Regional Coordinators (RCs) face-to-face tutorials are organized every fortnight for students offering the various programmes at all the study centres on Saturdays and Sundays. The major programmes being run are: Diploma in Basic Education (DBE), Diploma in Psychology and Foundations of Education (DPF), Post Diploma in Basic Education (PDE), Bachelor of Education in Psychology and Foundations of Education (BPF). Others are Diploma in Commerce (DMS), Diploma in Management Studies (DMS), Bachelor of Commerce (BCom), Bachelor in Management Studies (BMS) and Masters Programmes.

Students are assessed based on the number of units covered in their study modules during tutorials every six weeks. Questions for both quizzes and examinations are set by chief examiners of the university who wrote the modules. In all two quizzes and one end of semester examination covering each unit for each course are written per semester, quiz one is based on units 1-3 of the modules and quiz two covers units 4-6 of the modules. In order to ensure comprehensive assessment of students, CoDE introduced Teacher Made Test (TMT) in the 2011/2012 academic where course tutors are mandated to

administer three TMTs to students per semester and one assignment by chief examiners for each course (Dankyi, 2013). The assignments are to be completed and submitted to CoDE for marking.

Every student pursuing education programme do teaching practice; On and Off centre teaching practices. Therefore, all second years of the diploma programmes do On-Centre-Teaching Practice (OCTP) for one year before entering the final year whereas their degree counterparts do theirs in the second semester of the first year. Course tutors assess trainees' teaching effectiveness of DE students using teacher effectiveness assessment form developed by the CoDE-UCC. Senior members and mentors also do same for the Off-Centre Teaching Practice.

Notwithstanding, all these efforts by the CoDE to provide quality professional training to its learners, many DL students experience difficulties with irregular and untimely feedback of assessment results from the assessors, resolution of students' problems concerning examination results and untimely supply of study modules. Some students also usually worry about inadequate time for doing the OCTP, course tutors too complain about the large number of trainees that they are assigned to supervise for OCTP. Some senior members and mentors who supervise students for the Off-Centre Teaching Practice too stated that some trainees demonstrate very low level of effectiveness in teaching. All these as pointed out earlier, call to question the quality and efficacy of DE instruction and student support system that exist for trainee-teachers on distance mode of the university and worth investigating to establish whether or not there

exist any significant relationship between the quality of instruction being delivered through the UCC-CoDE, DL mode and teaching effectiveness of trainee-teachers that are produced.

Input factors that affect Trainee-teachers' level of Effectiveness

The review on instructional quality and teacher effectiveness shows that trainee-teacher effectiveness is predicted by many variables such as pedagogical quality, quality faculty, quality infrastructure, quality interaction, quality evaluation, learner support service quality, and tutor support service quality.

The first to consider is pedagogical quality which comprised of many dimensions including teaching methods, lesson preparation, time management, and classroom management. Teaching-learning process requires appropriate approaches of teaching (Chen, 2008; Ertmer, 2015). In this aspect, teachers have to know which strategy is better for students' learning and when. It is found in many studies that proper learning seems hard to takes place following a single method of teaching. Besides, many factors are involved in effective teaching strategies such as teacher knowledge and qualification, motivation, commitment, provision for resources and use, and learning environment (Shah & Alam, 2012). Apart from these factors, teaching methods consist of guiding and scaffolding, direct teaching with learning materials and pupils' engagements in dialogues and class tasks. An effective teaching strategy may mean practising and asking questions to one other and repeating them in class. Effective teaching method should create room for the teacher to ignite pupils' initiatives in order to help

them work together so that they can willingly help one another and can take responsible roles (Blazar, 2016).

In relation to the aspects of teacher lesson preparation, O'Neill (as cited in Yai & Wang, 2012) in a study on the impact of teacher self-efficacy on student learning outcomes in the University of HungKang, Taiwan argued that the teaching process is divided into three stages. These are the teaching preparatory stage, teaching implementation stage and the teaching evaluation stage. All these stages help in enhancing the pedagogical quality of the teachers' instruction. According to Yai and Wang (2012), at the preparatory stage which comprised of course plan and teaching preparation, the teacher ensures that the professional documents such as schemes of work, lesson plans, lesson notes and instructional materials are in place before entering into the teaching implementation stage which comprises of the teaching methods, teaching materials and classroom management. The teacher will be deemed efficient if lesson preparation enhances quality teaching and maximum learning achievement.

In addition, the trainee-teacher can ensure high level of pedagogical quality when he/she ensures that there is high level of planning and preparation. This domain has several components that describe how a teacher organises the content that students are to learn, that is, how a teacher designs instruction. Components include a deep understanding of content and pedagogy and an understanding and appreciation of the students and what they bring with them (Ali, 2000). The content must be transformed through instructional design into sequences of activities and exercises accessible to the students.

Muijs, Armstrong and Chapman (2010) further add that the area of lesson preparation also covers assessment plans. Assessment techniques must reflect instructional outcomes and document student progress. Assessment must be used for formative purposes and provide diagnostic opportunities for students to demonstrate their level of understanding. This domain is based on the principle that a teacher's role is not so much to teach as it is to arrange for learning. The plan and the students' assignments may be included in a teachers' profession portfolio. The plan's effects must be observed through action in the classroom and are reflected in student learning outcomes.

The trainee-teacher's time management on student learning can also boost the pedagogical quality of the teachers' instructional quality. Woods and Montagno (as cited in Muijs & Reynolds, 2011) note that the teacher-student interaction is very crucial for meaningful learning. However, this interaction is occasionally affected by student-teacher contact hours lost through teacher absenteeism. This means that the planned teaching-learning time is wasted; thus denying students an opportunity to have meaningful learning. In developing countries, Abdus-Salam (2015) argues that schools often offer to the students only a fraction of the time that the government plans and pays for; hence, not making best use of teachers.

The next dimension to consider is teacher classroom management. Classroom can be organised in different ways. In this context, Walters (2002) says that whole class approach facilitates to disseminate the same information to the whole class and to assess pupils where the members of a group can cooperate and

support each other to do their tasks in different ways. However, classrooms should be organised in a way where teacher, group and members of groups can exchange their teaching roles. Rivkin, Hanushek and Kain (2012) suggest to improve communication and to ensure consistency among students for the purpose of better classroom management. It is because traditionally organised classroom results in less productive and little success in teaching-learning process.

In most developing countries such as Ghana, most of the conventional classes result in overcrowding during teaching-learning process; and this results in less interaction between teacher and students. Teachers typically ask a series of pre-planned questions, initiate all the topics, and rarely interact with the substance of pupils' answers except to evaluate them. 'Real discussion' hardly happens there. There is virtually no pupil-to-pupil interaction or evidence of pupil self-reliance or pupils being encouraged to generate their own questions or forming of some tentative hypotheses in such classrooms. Classroom organisation is also related with class size namely teacher-students ratio, and the teaching aids used during lesson. According to Rivkin, Hanushek and Kain (2015), teachers' pre-plans before delivering are greatly influenced by various challenges like over enrolment, teacher-students ratio and lack of adequate teaching-learning instruments. So it is apparent that the whole class approach facilitates learners to benefit from one another through mutual interaction at the teaching venue.

Classroom management is concerned with a set of teacher behaviours and activities that are primarily intended to foster students' co-operation in the

classroom. An effective teacher is one who knows how to handle the students in class for maximum learning of students and hence the need to possess certain information and skills. In most cases, teachers in developing world use discipline to control their class. Discipline ensures how students behave when the teacher is teaching. A classroom that is not well organised results indiscipline problems and the teacher spends most of the teaching-learning time handling these problems rendering the teacher ineffective (Purdy, 2017). This means that a trainee-teacher who has a classroom management action plan will have an organised and structured classroom where both he and the students will know what to do. This trainee-teacher interaction produces good results. This is because students take responsibility and ownership for the task to be done. This shows that positive classroom environments are ones that maximize learning for all students.

The next dimension of instructional quality to consider is evaluation. Assessment is an integral part of teaching-learning process which facilitates solving existing problems of learners. It is a social practice that involves noticing, representing, and responding to children's literate behaviours, rendering them meaningful for particular purposes and audiences (Odden, Borman & Fermanich, 2004). Nicole (2012) points out some ways of dynamic assessment through revision of contents and pupils' activities on their learning sheets, test and homework in order to get ideas about students and their educational needs and also to assess teacher's work to make further decisions. Though dynamic assessment considers learners as centre of learning but it is practically hard to assess all students individually in overcrowded classes (Blazar, 2016; Harris,

Ingle & Rutledge, 2014). With regard to feedback, learning outcomes are accounted as pointers whether the conducted lessons are enough for learners or not.

However, feedback should be adapted to learners' needs so that teachers can easily assess their knowledge, skills, learning potentials and needs. Feedback might be less effective in spite of having few learning outcomes of some lessons. It was found in a study conducted by Ackers and Hardman (as cited in Ogunleye, 2013) that teachers gave feedback to the students in form of affirmation or making no reaction to pupils' responses and then went to do something else. Although they often verbally praise students' performance but they should demonstrate interests, responsibilities and care for their pupil's emotions, concerns and the classroom condition. After all, teachers should give chances to students to express their feelings. In this aspect, teachers can admire students verbally being satisfied their performances. This kind of feedback is opposed by Ackers and Hardman (as cited in Ogunleye, 2013) as it discourages pupils to contribute themselves during classroom lesson. After all, to justify students' performance, formative assessment seems more effective than verbal evaluation during teaching-learning practice in classes (Harris et al., 2014).

In relation to learning environment, Muijs and Reynolds (2000), posit that the classroom environment established by the teacher has a major impact on pupil's motivation and attitudes towards learning. In this respect, purposeful, task oriented and supportive classrooms generally facilitate students' learning. According to Manzar-Abbas and Lu (2013), classrooms must feature accessible

print that support children's daily reading and writing whereby each classroom should have a sizeable library of children's books, charts, poems, lists and big books for instruction and their walls include displays of children's activities. Such environment functions as a support system which prompts to celebrate literate behaviours.

In addition, a safe and open environment facilitates to develop shared norms and values; makes students listen to understand; participate fully; respect others and their ideas. In order to make lesson flexible, teachers can follow time schedule to meet pupils' interests for work and their educational needs. In this regard, attention to class discipline and each individual pupil paid by the tutor is essential. Along with classroom setting, school environment contributes to the success or failure of learners in their reading performance (Lee, 2015). Besides, quality learning is also concerned with home environment. As Koomson, Brown, Anyagre, Ahiatrogah and Dawson-Brew (2017) argue, learning competencies depend on positive interactions with school and home environment. Therefore, well-organised classes concerned with home and school environment may provide a message about the physical fitness of learning setting in order to generate knowledge for learners where learners might be facilitated from both home and school.

The next dimension to consider under infrastructure quality is teaching aids. Quality of classroom interaction might be hampered due to insufficient teaching resources and poor physical facilities. Different teaching materials such as textbooks, pen, pencil, cards, big papers, building blocks, straws, wooden

chips, money, body and social games can be employed during lessons. Even different objects like teaching sheets can be used as medium of instruction in order to meet pupils' needs. In general, teachers applied different contents supplied by the educational authorities. Likewise, they adopt teaching plans based on classroom conditions. However, contents of teaching facilitate to motivate learners if those are life oriented and simply accessible for teaching. Inadequacy of materials by and large hampers teaching and learning process in classroom (Feldman, 2013; Kizilbash, 2014).

Another important factor that influences instructional quality of the trainee-teacher is faculty quality. All students deserve a teacher who can help them to be independent learners. Grasha and Yangarber-Hicks (2013) suggest that teachers develop and improve their instructions through inquiring in order to positively influence student learning. Besides, teachers can experience powerful learning by examining student thinking, co-planning, co-teaching, and other forms of assistance in class (Khan & Halai, 2014). So experience plays an important role to bring effectiveness to teaching because expert teachers are thought to know effective ways of dealing with learners compared to less experience ones (Dillon & Blanchard, 2015; Grasha, 2016). This shows that teachers could properly utilise their knowledge and practice norms and standards based on their professional experiences in spite of having inadequate teaching-learning resources. They could even enrich assessment procedures, maintain assessment tasks and collect learners' portfolios and achievements.

Along with this, trainee-teachers must be apt to resolve different challenges during teaching. Accordingly, they have to know how to manage difficult situations amongst a group of peoples in order to help them to learn now, and to become better learners in future. Besides, trainee-teachers should be expert anticipating pupils' progress and to identify learners' weaknesses so that they could adapt their strategies to meet learners' needs. In this context, teacher's knowledge, roles, skills, dispositions, and behaviours, all have great influence on effective teaching (Darling-Hammond, 2014). Indeed, teachers who exhibit high level of instructional quality know how to create successful learning environment in classroom. Therefore, an effective teacher must be an expert in subject matter as well as action based pedagogical knowledge, have mastery in the language of instruction, create productive and joyful learning environment, arouse interests among the students in their studies, generating compliant classroom environment for students' needs, bearing strong ethical minds, dedication in profession and intensive caring for students (Ertmer, 2015; Harris & Sass, 2017).

Theoretical Framework

The theoretical framework of the study was made up of five related theories that were critically reviewed to form a theoretical structure that supported the argument of this study. These theories are interconnected ideas that condense and organises knowledge about the problem. It forms a collection of interrelated ideas based on theories used to explain trainee-teacher instructional quality and its influence on their effectiveness. This theoretical framework helped me to see

clearly the construct and argument of the study. It also provided me with a general framework for data analysis. The theories reviewed were theory of constructivism, Simonson's equivalency theory, Bandura's self-efficacy theory, transactional distance theory and self-determined theory.

Theory of Constructivism

According to Adey, Fairbrother, Wiliam, Johnson and Jones (2012), Jean Piaget and John Dewey concept of progressive education is what led to the evolution of constructivism. Piaget believed that humans learn through the construction of one logical structure after another. The implications of cognitivism and how it is applied have shaped the foundation for constructivist education. Dewey called for education to be grounded in real experience. According to Dewey (as cited in Adey et al., 2012), if you have doubts about how learning happens, engage in sustained inquiry: study, ponder, consider alternative possibilities and arrive at your belief grounded in evidence. Inquiry is a key part of constructivist learning.

Constructivism is basically a theory, based on observation and scientific study about how people learn. It says that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences (Appleton, 2009). When we encounter something new, we have to reconcile it with our previous ideas and experience, may be changing what we believe, or may be discarding the new information as irrelevant. To do this, we must ask questions, explore, and assess what we know.

Both cognitivists and constructivists hold that people actively construct their own knowledge, and that reality is determined by the experiences of the knower, rather than existing as an objective truth distinct from the individual.

Constructivism learning theory enhances students' logical and conceptual growth. The underlying concept within the constructivism learning theory is the role which experiences or connections with the adjoining atmosphere-play in student education. Just like that of Piaget, two of the key concepts within the constructivism learning theory which create the construction of an individual's new knowledge are accommodation and assimilation (Allen, 2015). Allen examines that assimilating causes an individual to incorporate new experiences into the old experiences; while accommodation relates to re-framing the world and new experiences into the mental capacity already present. Individuals conceptualises a particular fashion in which the world operates, and this causes the individual to develop new outlooks, rethink what were ones misunderstandings, and evaluate what is important, ultimately altering their perceptions.

Constructivism transforms the student from a passive recipient of information to an active participant in the learning process. Always guided by the teacher, students construct their knowledge actively rather than just mechanically ingesting knowledge from the teacher or the textbook. The constructivist view of learning in most general sense, usually means encouraging students to use active techniques to create more knowledge and then to reflect on and talk about what they are doing and how their understanding is changing. The teacher makes sure

she understands the students' pre-existing conceptions, and guides the activity to address them and then build on them (Miller, 2013).

In constructivism, students are encouraged to constantly assess how the activity is helping them gain understanding. By questioning themselves and their strategies; thus, in the constructivist classroom ideally become "expert learners." This gives them ever-broadening tools to keep learning. With a well-planned classroom environment, the students learn how to learn. When they continuously reflect on their experiences, students find their ideas gaining in complexity and power, and they develop increasingly strong abilities to integrate new information (Elliot, Kratochwill, Cook & Travers, 2012).

Furthermore, the constructivism learning theory allows learners to develop the skills and confidence to analyse the world around them, create solutions or support for developing issues, and then justify their words and actions, while encouraging those around them to do the same and respecting the differences in opinions for the contributions that they can make to the whole of the situation. Classroom applications of constructivism support the philosophy of learning which build students' and teachers' understanding.

Constructivism has been criticised on various grounds. Some of the charges that critics level against it is that it is elitist. Critics say that constructivism and other "progressive" educational theories have been most successful with learners from privileged backgrounds who are fortunate in having outstanding teachers, committed parents, and rich home environments (Brooks & Brooks, 2013). This shows that disadvantaged children, lacking such resources,

benefit more from more explicit instruction. Critics say the collaborative aspects of constructivist classrooms tend to produce a tyranny of the majority, in which a few students' voices or interpretations dominate the group's conclusions, and dissenting students are forced to conform to the emerging consensus (Miller, 2013).

Also, there is little hard evidence that constructivist methods work. Critics say that constructivists, by rejecting evaluation through testing and other external criteria, have made themselves unaccountable for their students' progress. Despite these criticisms, constructivists counter that, in studies where children were compared on higher-order thinking skills, constructivist students seemed to outperform their peers (Ellis & Hunt, 2015).

The assumption of the theory is that learning and discovery of knowledge that is self-directed with very little or no supervision and guidance is most lasting and the best for distance education (Simonson, Schlosser & Hanson, 2013). Simonson et al. (2013) added that various forms of teaching learning arrangements in which teachers and learners carry out their essential tasks and responsibilities apart from another, communicating in a variety of ways promotes more lasting and meaningful learning. Its purpose is to give distance learners the opportunity to continue learning in their own environments.

Holmberg (2014) also stressed that independent study includes different forms of teaching learning arrangements in which instructors and learners carry out their essential tasks and responsibilities independent of another, communicating in a variety of ways with learners in the comfort of the learners

own environment. The theory of constructivism therefore, considered the autonomy of the individual learner to be the thrust of distance learning (Sharma, 2014). Holmberg (2014) outlined some important ingredients of independent learning which includes giving greater student responsibility, sufficient available instruction, effective mix of media and instructional approaches, adjusting to individual differences, and a multiplicity of start, stop, and learn times.

According to Wedemeyer (as cited in Peters, 2016), the DL system should be capable of operating any place where there are students even only one student whether or not there are teachers at the same place, at the same time. Also, it should place greater responsibility for learning and constructing meanings and understanding on the student; free faculty members from custodial-type duties so that more time can be given to truly educational tasks; offer students and adults wider choices (more opportunities) in courses, formats, and methodologies; use, as appropriate, all the teaching media and methods proven effective; mix and combine media and methods so that each subject or unit within a subject is taught in the best way known; and cause the redesign and development of courses to fit into an articulated media programme. In addition, it should preserve and enhance opportunities for adaptation to individual differences; evaluate student achievement simply, not by raising barriers regarding the place, rate, method, or sequence of student study; and permit students to start, stop, and learn at their own pace (Peters, 2016).

Simonson et al. (2013) noted four common elements of every teaching-learning situation to ensure construction of knowledge and autonomy by learners:

a teacher, a student, search image (subject matter to be taught to learners) and a communication system (medium or mode through which the search image is transmitted to the learner). Simonson et al. (2013), therefore, proposed a reorganisation of these elements that would accommodate physical space and allow for greater learner freedom. They are of a firm conviction that the development of the student-teacher relationship is key to the success of distance education. Peters (2016) could not agree more with Simonson et al. (2013) when he outlined two important variables in distance educational programmes: the amount of learner autonomy for self-construction of meaning and the distance between teacher and learner.

Peters (2016) posits that in traditional school settings learners are very dependent on teachers for guidance and that in most programmes, conventional and distance, the teacher is active while the student is passive. In distance education, there is a gap between teacher and student, so the student must accept a high degree of responsibility for the conduct of the learning programme (Jumani, 2017). Application of the theory of constructivism in the context of DL, requires instructors/facilitators to offer learners little help and should act more of a respondent than a director. This is in tandem with Brunner (as cited in Parijat & Bagga, 2014) who came out with the discovery approach in which the student bears the biggest responsibility of learning most concepts and unearthing knowledge on their own through exploration of other concept and principles.

Some adult learners, however, require help in formulating their learning objectives, identifying sources of information, and measuring objectives through

the application of reception learning approach where the instructor bears the responsibility to fish out relevant information about the subject matter, repackage and delivers to the learners (Jumani, 2017; Peters, 2016). Most adult learners on CoDE programme needs this approach or its blend with the discovery approach in in the spirit of constructivism in order to succeed. This shows that in distance education programme, learning does not happen until the learner involves himself in study and learning activities. It situates the learner at the centre of the learning and teaching process. In DL, learning precedes teaching (Kunter, Baumert & Koller, 2017).

The discussion so far shows that in order to enhance trainee-teacher effectiveness on the CoDE distance programme, facilitators should practicalise instruction; guide the learners to go through the professional processes of teaching. The professional process include; statement of behavioural objectives, relevant previous knowledge, introduction, development of Teacher-Learner Activity (TLA), questioning skills, lesson closure and evaluation (Kunter, Baumert & Koller, 2017). When developing a distance education programme such as that of CoDE, according to constructivism theory, designers must create stimulating environments that capture learners and enable them to formulate knowledge and derive meaning for themselves. These environments allow for collaboration between learners and the facilitator, and encourage meaningful dialogues so that understanding can be individually constructed.

Simonson's Equivalency Theory

The equivalency theory states that for distance education to be successful it should be based on the idea of equivalency. The theory states that the more equivalent the learning experiences of distant learners are to those in the traditional or conventional system, the more equivalent will be the quality of products as compared to their conventional counterparts (Simonson, 1999). Therefore, education at a distance away from the traditional or convention systems of higher education should be built on the concept of equivalency of learning experiences. This approach to distance education thus advocates designing a collection of equivalent learning experiences for distant and local learners, even though they are in different worlds and contexts.

Equivalency means that the more equivalent the learning experiences are for distant and local learners the more equivalent will be the outcomes for the learning activities that would ensure learner effectiveness. However, equivalency does not mean equal. Therefore, Simonson et al. (2013) indicated that learning experiences are not identical, but various learning experiences can be considered equivalent if they produce the equivalent learning. The key of the theory is to not expect each learner to be taught and learn in the same way.

Simonson (1999) opined that students should have learning experiences that are tailored to suit the environment and situation in which they study. In this vein, institutions operating distance education systems like CoDE should enhance their efforts toward providing equivalency in the learning experiences for all trainee-teachers, in terms instructional quality, regardless of their learning

environment in the form of quality facilitators, pedagogy, learner support, tutor support, infrastructural facilities, monitoring and evaluation of their acquisition of professional competencies (Antoniou & Kyriakides, 2013). Key points for emphasis in this theory are the concepts of equivalency, learning experiences, appropriate application, students, and outcomes (Simonson et al., 2013).

Simonson et al. (2013) concluded on the centrality and relevance of the theory to the success of the distance education programme by asserting that the concept of equivalency is central to the widespread acceptance of distance education. If teachers, learners, and the public in general identify learning at a distance as the equivalent of what they consider to be traditional learning, then distance learning will become mainstreamed, at least, in Ghana. If equivalency is not what the public perceives, then distance education will continue to be reputed as peripheral to the field of higher education in Ghana, and its products would be treated with contempt in the job market.

According to Nicole (2012), well-built learning theories must be based on solid philosophical foundation, should be grounded on the existing knowledge of the field, should have verified concepts and principles, and should make the design of instruction more effective for the learner. He therefore, fingered that the equivalency theory provides no principle to follow when developing instruction instead offering simply that distance learning should be "equivalent" in learning experiences. Nicole (2012) went further to posit that a theory no matter how unknown it might be and how popular it is, if it is not making the design of instruction more useful to the learner, it does not have to be used.

In fact, the theory apart from stating that learning experiences of distance learners and their conventional system counterparts being equivalent, did not spell out any practical or concrete steps to follow in making the learning experiences truly equivalent. This makes application of the theory difficult if not impossible. Notwithstanding this, no one can discount the relevance of the theory in making DL experiences equivalent to that of the traditional systems in order to boost the confidence of learners, entrepreneurs and employers in the quality and effectiveness of the DL products.

Bandura's Self-efficacy Theory

Bandura (1996) propounded the theory of self-efficacy which says that people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events affects their lives. Self-efficacy theory proposes that people are motivated when they believe they can accomplish the task, they will get the reward, and the rewards or achievements for doing so are worth the effort (Stephan & Timothy, 2013). According to Bandura (1996), self-efficacy determines how people feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through four major processes. They include cognitive, motivational, affective and selection processes. A strong sense of efficacy enhances human accomplishment and personal well-being in many ways. Self-efficacy is about the person's belief and perception of his or her ability (probability) to accomplish an objective. Thus, the higher one's belief the better chances for motivation and accomplishment. When people do not believe that they can accomplish objectives, they will not be motivated to try at all. In most cases, self-efficacy is not just about

the individual's belief to do something but rather a strong conviction mediated by theoretical and practical skills to accomplish a task (Gerald & Phil, 2011). This calls for course tutors and teachers in general to continually equip leaners with theoretical and practical skills required for them to perform tasks on their own with little or no supervision (Fred, 2010). .

The theory is based on the assumptions that both internal (needs) and external (environment) factors affect behaviour; behaviour is the individual's decision; people have different needs, desires, and goals; people make behavioural decisions based on their perception of the outcome (Aaronson, Lisa & William, 2017).

Vroom (as cited in Pareek, 2004) opined that people with self-efficacy have a strong belief that their performance will result in achieving success as a reward. Generally, the higher one's belief the greater the chances for motivation and self-efficacy. When getting the reward is not assured, people may not be motivated. For example, Mr. Dan believes he would be an effective trainee-teacher and wants to get grade 'A' for OCTP. However, Mr. Dan has an external locus of control and believes that working and practicing hard will not result in getting the grade 'A' anyway. Therefore, he will not be motivated to work for it. Self-efficacy is powered and driven by the value people place on the outcome or reward one intends to achieve (Newstrom & Keith, 2014). Therefore, the higher the value or importance of the outcome or reward one attaches to a phenomenon, the better the chances he/she will be motivated by it. For example, course facilitator, Mr. Asamoah wants trainee-teacher Felix, to work harder. Mr. Asamoah talks to Felix and tells him that working harder will result in getting

better grade. If Felix values the grade 'A', he will probably be motivated. However, if the grade is not of importance to Felix, it will not motivate him. This is the preference for outcome aspect of self-efficacy (Michael & Edward, 2011).

Self-efficacy theory can accurately predict a person's work effort, satisfaction level, and performance, but only if the correct values are plugged into the formula (Michael & Edward, 2011). Research has shown that self-efficacy theory can be used to determine if leaders can be trained to use ethical considerations in decision making (Lussier and Achua, as cited in Stephan & Timothy, 2013). Self-efficacy theory works in certain contexts and not in others for the reason that it works best with employees and trainees who have an internal locus of control. This is because they believe that if they control their destiny, their efforts will result in success and effectiveness and not the other way round (Michael & Edward, 2011).

People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an efficacious outlook fosters intrinsic interest and deep engrossment in activities. They set themselves challenging goals and maintain strong commitment to them. They heighten and sustain their efforts in the face of failure. They quickly recover their sense of efficacy after failures or setbacks. They attribute failure to insufficient effort or deficient knowledge and skills which are acquirable (Baard, Deci & Ryan, 2004).

This means that in DL, especially if instruction is not of high quality and handled by competent instructors, student would not grasp requisite teaching

skills they require. They may then wallow in doubts of their capabilities shy away from difficult tasks which they view as personal threats. This would have debilitating repercussions on their effectiveness as teachers to be. This according to Vroom (as cited in Geelan, 2013) would in turn affect trainee satisfaction which is an effect of one's ability to demonstrate competence and effectiveness in job performance. In line with Vroom's assertion, Bandura (as cited in Geelan, 2013) outlined four things that instructors need to do in order to build students and learners' or efficacy: mastery of experiences, vicarious experiences provided by social models, strengthen learners' beliefs that they have what it takes to succeed, and creation of positive moods of learners. Positive mood enhances perceived self-efficacy and success, despondent mood diminishes it. Thus, modifying self-beliefs of efficacy is to reduce trainees stress reactions and alter their negative emotional proclivities and misinterpretations of their physical states.

Woolfolk (2007) also opined that teachers belief that they can assist non-performing learners learn, is considered to be one of the few characteristics of teachers that is correlated with learner mastery, achievement and efficacy. This means that both instructors and trainee-teachers effectiveness do not just emanate from their ability to transmit subject matter knowledge, their ability is also partly determined by their effectiveness in maintaining an orderly learner-friendly classroom environment and making use of learner resources that will engender effective learning (Bandura as cited in Fullan & Stiegelbauer, 2017).

Transactional Distance Theory

Transactional distance theory was the classical pedagogical theory specifically derived from analysis of teaching and learning in a classroom (Moore, 1993). Transactional distance theory states that when an instructional designer makes decisions, these decisions will result in a certain amount of structure, dialogue and autonomy (Moore & Kearsley, 2014). It could either be unconscious outcome of the instructional design process, or the result of conscious instructional design decisions. Regardless, these variables interact to create transactional distance which Moore (1993) refers to as a psychological and communication space to be crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner. It is this psychological and communications space that is the transactional distances (Moore as cited in Burgess, 2016). Psychological and communications spaces between any one learner and that person's instructor are never exactly the same. In other words, transactional distance is a continuous rather than a discrete variable, a relative rather than an absolute term. Therefore, this theory provides guidance to instructors and especially DL facilitators as to how to design the course. For example, how much structure, dialogue, and autonomy to build into the course, so as to minimize transactional distances and thereby maximize learning outcomes.

The transaction that is referred to in distance education occurs between instructors and learners in an environment having the special characteristic of separation of teachers from learners. This separation leads to special patterns of learner and teacher behaviours.

According to Moore (1993), the theory consists of a set of principles and special teaching procedures that defines the pedagogical aspects of education in three sets of variables. The special teaching procedures fall into two clusters; in addition a third cluster of variables describes the behaviours of learners. The extent of transactional distance in an educational programme is a function of these three sets of variables. These variables are not technological or communications, but variables in teaching and in learning. These clusters of variables are named structure, dialogue and learner autonomy.

Basically, the argument of the theory is that in teaching whether at a distance or face to face, there is usually a situation where learners do not understand certain concepts taught by their instructors (gap) known as the 'transactional distance' which needs to be bridged to ensure knowledge and skill acquisition by learners. Therefore, in distance education, the separation of the instructor and learner is so significant that the special teaching-learning techniques that are used should be identified as distinguishing characteristics of this educational practice. This distance is not physical or spiritual but psychologically created by inappropriate teaching methodology and lack of quality interaction and communication in the course of teaching. Moore (1993) emphasised the need for dialogue, communication and interaction when facilitating DL courses to learners.

This shows that what determines the success of distance teaching is the extent to which the institution and the individual instructor are able to provide the appropriate opportunity for, and quality of, dialogue between instructor and

learner, as well as appropriately structured learning materials (Moore, 1993). It is worth nothing that the structuring of instructional processes in DL programme is key to bridging the transactional distance. Therefore, it is appropriate for every distance education programme to be structured taking into consideration presentation, support for the learner's motivation, stimulate analysis and criticism, give advice and counsel, arrange practice, application, testing and evaluation, and arrange for student creation of knowledge (Burgess, 2016; Harris et al., 2014)

Self-determined Theory

Self-Determined Theory (SDT) was propounded by Deci and Ryan (1991) which states that people have innate psychological needs that are the basis for self-motivation that drives them to persist in an activity in order to achieve planned external goals. According to Deci (as cited in Deci & Ryan, 1995), self-determination theory is a macro theory of human motivation and personality that centres on people's inherent growth tendencies and innate psychological needs. It is concerned with the motivation behind choices people make without external influence and interference. The principal basis of this theory is the degree to which an individual's behaviour is self-motivated and self-determined (Deci & Vansteenkiste, 2004).

Milestone research works that resulted in the development of SDT included research on intrinsic motivation (Deci, 1971). Intrinsic motivation refers to initiating an activity for its own sake because it is interesting and satisfying in itself, as opposed to doing an activity to obtain an external goal (extrinsic

motivation). Different types of motivations have been described based on the degree they have been internalised. Internalisation refers to the active attempt to transform an extrinsic motive into personally endorsed values and thus assimilate behavioural regulations that were originally external (Gagné & Deci, 2005; Ryan, 1995).

According to Deci and Vansteenkiste (2004), there are three psychological needs that motivate people to commence an activity and specify nutriments that are essential for psychological health and well-being of an individual. Deci and Vansteenkiste (2004) identified three psychological needs that are innate and if satisfied, ensure growth, effectiveness and success of students and workers. These needs are linked to intrinsic motivation and self-efficacy (Bandura as cited in Deci & Ryan, 2011). These needs are said to be universal, innate and psychological and include the need for competence, autonomy, and psychological relatedness as captured in Figure 1.

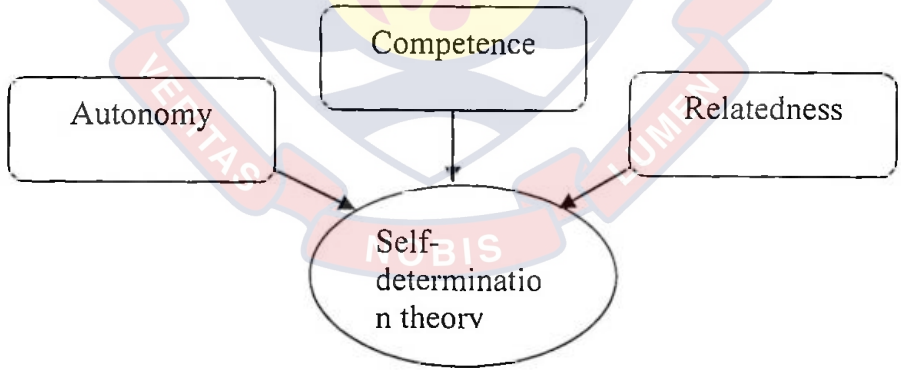

Figure 1: Model on Self-Determined Theory
Source: Deci and Vansteenkiste (2004)

Competence seeks to control the outcome and experience mastery. Giving trainees or students unexpected positive feedback on a task increases their

intrinsic motivation to perform and succeed. Positive feedback therefore, fulfils people's need for competence (Deci & Ryan, 2011). In fact, giving positive feedback on a task served only to increase people's intrinsic motivation and decreased extrinsic motivation for the task. Chirkov, Ryan, Kim and Kaplan (2013) found that negative feedback has the opposite effect. That is, decreasing intrinsic motivation by taking away from people's needs and desires for competence and success.

Relatedness is the universal want to interact, be connected to, and experience caring for others. During a study on the relationship between infants' attachment styles, their exhibition of mastery-oriented behaviour and their effect during play attest to this (Frodi, Bridges & Grolnick, 1985). Frodi et al. (1985) failed to find significant effects, perhaps somewhat surprising was the finding that the quality of attachment of trainee-teachers assessed at 12 months failed to significantly predict mastery, motivation and competence. Months later, other investigators have demonstrated an association between mastery and motivation and practice of teaching in groups where group member critic, commend and suggest better alternatives for trainees (Frodi et al. 1985). Chirkov et al., 2013) too assert that people always strive to give their best in groups in order to gain recognition and praise. Thus people under training need well connected and related groups for effectiveness in performance.

Autonomy is in fact, universally urged to be causal agents of one's own life and act in harmony with one's integrated self (Amabile, DeJong & Lepper, 2006). Offering people extrinsic rewards for behaviour that is intrinsically

motivated undermined the intrinsic motivation as they grow less interested in it. Initially, intrinsically motivated behaviour becomes controlled by external rewards, which undermines their autonomy. Amabile et al. (2006) found other external factors like deadlines, which restrict and control, also decrease intrinsic motivation. Circumstances that give autonomy as opposed to taking it away also have a similar link to motivation. Studies looking at choice have found that increasing a participant's options and choices increases their intrinsic motivation (Wortman, Loffus & Marshall, 2014).

These needs are universal necessities that are innate, not learned (instinctive), and seen in humanity across time, gender and culture. According to Sprinthall and Sprinthall (2013), there are three other essential elements of SDT that promote self-determination and success of learners. However, some may be more salient than others at certain times and are expressed differently based on time, culture, or experience. These elements are as follow as:

1. Humans are inherently proactive with their potential and mastering their inner forces (such as drives and emotions),
2. Humans have an inherent tendency toward growth development and integrated functioning, and
3. Optimal development and actions are inherent in humans but they do not happen automatically.

To actualise their inherent potential they need nurturing from the social environment. Therefore, these innate elements have to be activated through effective theoretical and practical skill training in schools. Tutors and facilitators

in charge of training teachers need to give effective practical guidance and training in order to activate their needs for success. If this happens there are positive consequences (e.g. well-being and growth) but if not, there are negative consequences. So SDT emphasizes humans' natural growth toward positive motivation, however, this is thwarted if their basic needs are not fulfilled (Koomson et al., 2017; Leman, Bremner, Parke & Gauvain, 2012).

Empirical Review

In order to understand the current concepts and issues under study much better, I reviewed empirical literature covering studies on the phenomenon of instructional quality and trainee-teacher effectiveness, taking into consideration the seven dimensions of instructional quality as follows:

a. Pedagogical quality and trainee-teacher effectiveness faculty quality
b. Faculty quality (qualification) and trainee-teacher effectiveness
c. Learner/instructor support services, infrastructure qualities and trainee-teacher effectiveness
d. Impact of quality evaluation on trainee-teacher effectiveness
e. Quality Interaction and trainee-teacher effectiveness

This helped in gaining better knowledge on the issues by means of direct and indirect observation or experience of previous researchers or studies. The record of other researchers' observation or experience were critiqued and analysed quantitatively and qualitatively to gain more information about the concept under study. The relationships between the dimensions of instructional quality and

trainee-teacher effectiveness were also considered. Also, the influence of gender was considered on the study variables.

Pedagogical Quality and Trainee-teacher Effectiveness

Generally, service quality is the ability of an institution to meet or exceed customer (student) expectations. Monitoring of the service quality performance of organisations (institutions) is an important factor for quality sustenance, a necessary step towards gaining the competitive advantage over the other organisations (Joseph, Yakhou & Stone, 2005). Research and awareness about what students think important will enable educators to better anticipate and address their particular needs which in turn will strengthen the educational institutions. The purpose of Vermula's (2013) study was to examine the usage of different dimensions of service quality in education system and evaluate the service quality with students' satisfaction in the higher educational institutions in twin cities of Hyderabad and Secunderabad. Questionnaire was administered to collect the primary related data to establish the relationship between service quality and student satisfaction in higher education. Data collected was analysed using Statistical Package for Social Sciences (SPSS).

The findings that emerged from Vermula's (2013) study showed that students perceive other factors/dimensions, that is: the teaching methodology, assurance of service quality and reliability, infrastructure, cost, and responsiveness of faculty, caring and addressing concerns of learners by the faculty member are also necessary, but the reliability and assurance i.e.

promptness and accuracy in service and assurance of service play a major role and have greater impact on their satisfaction levels. This shows that the assurance and the reliability dimensions of service quality were the two most important dimensions and had significant positive relationship with student satisfaction. Vermula's (2013) study used dimensions of service quality that are more skewed to the business environment. Other dimensions of quality in education should have been considered since educational organisation is far different from organisations within the business environment with regard to culture, climate, and service.

Quality assurance in teaching is the systematic management and assessment procedures adopted by higher educational institutions and systems in order to monitor performance against objectives, and to ensure achievement of quality outputs and quality improvements (Burgess, 2014). Harman (as cited in Mbwesa, 2014), further asserted that quality assurance in instruction and education in general facilitates recognition of the standards of awards, serves public accountability purposes, helps inform student's choice, contributes to improved teaching-learning and administrative processes, and helps disseminate best practices with the goal of leading to overall improvement of higher education systems. However, Mbwesa (2014) cautions that setting common standards and evaluation criteria, must take cognisance of the diversity and plurality of higher education within national, as well as regional systems. Assuring the quality of education provision is a fundamental aspect of gaining and maintaining credibility for programmes, institutions and national systems of higher education worldwide.

Mbwesa (2014), therefore, examined students' perceived quality of distance education courses as a correlate of learner satisfaction, a case study of the Bachelor of Education Arts Programme at the University of Nairobi, Kenya. The purpose was to assess the impact of quality DE programme through the perceived lenses of the students. Mbwesa (2014) operationally defined pedagogical quality as effectiveness in the instructional process. She used 10 key related close-ended items to collect data on pedagogical quality. Responses to the items were measured discretely using five-point Likert scale items ranging from strongly disagree to strongly agree.

The specific issues considered by Mbwesa (2014), under pedagogical quality were necessary ingredients and constituents of pedagogical quality. These include how content of courses taught were of high quality, well-constructed, facilitator-learner activity, efficacy of delivery, flexibility in the learning approaches and methods, effective face-to-face tutorial were and flexibility in learning space created by the tutor. Others border on facilitators' ability to demonstrate content knowledge, catering for individual differences and activities, suitability of content to the needs of learners. Considering the issues pointed out by Mbwesa (2014), quality instructor pedagogical quality entails course facilitators' thorough possession of relevant knowledge in both course content and methods of delivery. This is in line with Feist and Rosemberg (2012), who opined that instructor competency and quality of delivery is wholly predicated on possession of action system and subject matter knowledge.

The analysis of Mbwesa's (2014), study focused on identifying students' views of different dimensions that define the construct of quality in DE from their perspective and how this influences students' satisfaction with the DE course. Data was collected from a randomly selected sample of 248 students pursuing a Bachelor of Education (Arts) programme through distance learning at the University of Nairobi, Kenya. The instrument of data collection was questionnaire which was designed using only close-ended items. Correlation coefficients were used to analyse the data.

Even though the sample was stated, Mbwesa (2014), did not state the population from which she selected the aforementioned sample from, not to mention the basis for using such a sample. This raises questions as to how reliable and representative the sample was in relation to the entire population of Art Education students of the University of Kenya. According to Best and Kahn (2012), if samples are selected haphazardly and not in line with the population parameters, the results would not be reliable enough to be generalised to the population studied.

Again issues experienced from the first hand point by DE learners are real and cannot be a matter of perception as Mbwesa (2014) portrayed in her study. That notwithstanding, the findings that emerged from the study were relevant to this study. Results of the analysis indicated that 93.5 percent of the students viewed the quality of pedagogy in the DE course as being of a fairly good quality while only 4.9 percent of the students viewed the pedagogical quality of DE facilitators as being of low quality. This generally implies that the students regard

the pedagogical aspects of their course as being fairly good quality. Mbwesa (2014) further found that gender has no effect on students' perceived quality of distance education courses with regard to pedagogical quality.

This finding contradicts that of Vermula (2013), who found very weak relationship between pedagogical quality and learner effectiveness and satisfaction with DE programmes. He added that the weak relationship was not attributable to low quality instruction only but also to uncooperative attitude of the DE learners who normally do not learn their study materials very well before attending face-to-face. This is in line with the submission of Simonson et al. (2013) who pointed to the fact that in DE the heavier responsibility to master skills and concept lies on the learner. The instructors (facilitators) are only to facilitate learning by clarifying issues that learners are not able to understand during their home or group based study. Burgess (2014) posited that quality assurance in DE and education in general is a shared responsibility. This means that pedagogical quality in DE cannot be a sole responsibility of the instructors.

Faculty quality (qualification) and Trainee-teacher Effectiveness

The importance of the role of a competent instructor was observed to play a significant part in the success of distance education systems worldwide (Koomson, 2007). Kwao (2002) examined the impact of teacher competence on students' performance. Specifically, Kwao (2002) looked at instructor competence in terms of his/her ability to demonstrate effective command over possession of subject matter knowledge, lesson presentation skills (methods and

questioning skills), class management and control and lesson note preparation. The study, therefore, focused on investigating the competence levels of Junior High School (JHS) teachers in the aforementioned four areas of instructor competence at Komenda Adina Aguafo Abirim district of the Central Region of Ghana. A sample of 112 teachers was obtained from an accessible population of 121. The simple random sampling technique was used to select the sample. Descriptive design was used. Also, a modified Botswana's Teaching Competence Instrument (TCI) as well as 50-item observation guide with reliability coefficients of 0.93 and 0.83 respectively was used to collect data.

In fact, Kwao (2002), even though failed to acknowledge the authority whose criteria was employed in his sampling process, the study found that his sample was perfectly in line with Krejchie and Morgan's (as cited in Best & Kahn, 2012) criteria for sample selection. Sample selection done this way makes selected sample representative of the population which is an important ingredient of reliability of research findings (Frankael & Wallen, 2006). However, a serious flaw in Kwao's study was that he did not compare opinions as expressed through the questionnaires with the actual classroom observations made in the form of triangulation. This could not minimise respondents' exaggerations with respect to the self-appraisal items used in the study. This in fact, has serious implication for validity of the findings of the study.

That notwithstanding, the findings that emerged from Kwao's (2002), study are related and relevant for this study. The findings show that majority of the teachers demonstrated low level of competence. Also, teacher competence

was central to the students' success. Again, the study found that most trainees demonstrated low level of effectiveness in lesson plan preparation and lesson evaluation. This finding parallels that of CoDE (2016) monitoring and survey of report which found 30 percent of trainee-teachers to have challenges with professional preparation of lesson plans. There was serious absence of instructional materials which affected quality instruction and students' performance. Again, most teachers failed to use teacher-learner materials. The study therefore, recommended refresher and in-service programmes for teachers from time to time in order to enhance their competence and quality of lessons delivery.

Fong-Yee and Normore (2017) also examined the impact of quality teachers on student achievement. The work of Fong-Yee and Normore (2017) shows that quality teachers, that is teachers with high level of educational and professional qualifications, have more positive impact on students' academic achievement than low-qualified ones. Similarly, Khan (2017), also examined the professional development of teachers, focusing on the field-based teacher development programmes in Chitral, Pakistan. One of Khan's (2017), specific objectives examined student support systems in DL, which revealed that when students were asked to name the factors that played an important role in aiding their learning and success, they cited the highly qualified facilitator. When students were asked to name the significant barriers to their learning experience, they named the poor or incompetent facilitator. However, gender had no effect on students view on their teachers' quality with regard to educational and

professional qualifications. Therefore, the facilitator or instructor in distance learning system can either make or break the system, so important consideration must be given to the role the instructors play in such a system (Khan, 2017).

Learner/instructor support services, infrastructure qualities and trainee-teacher effectiveness

Walters (2002), examined the effect of availability and utilisation of educational facilities on trainee-teacher effectiveness in three Colleges of Education in the Central region of Ghana namely, OLA, Komenda and Fosu colleges. The study aimed at finding whether the colleges have the required educational facilities to support tutors and trainees to ensure quality instruction and trainee-teacher effectiveness. The descriptive design was used for the study. The study purposively sampled 139 respondents out of the total population of 2,192 made up of all the principals, vice principals, tutors and librarians. Trainee-teachers were, however, randomly sampled. Even though, the sampling procedure was comprehensive, the total population of trainee-teachers sampled and how it was selected were not specified.

The study made use of both descriptive and inferential statistical tools in analysing the data. The study, however, did not perform any homogeneity test to find out whether the distribution was normal or skewed. Therefore, one cannot tell whether it was appropriate for the study to used mean, standard deviation, Pearson product moment correlation and the linear multiple regression analysis since these statistical tools are used when the distribution is normal.

That notwithstanding, the findings that emerged from Walter's (2002), study were that library facilities that were available were stocked with out-dated books that were not relevant to most of the academic programmes offered by the trainees. This affected adversely their acquisition of subject matter and action system knowledge necessary for their effectiveness. Also, trainees toilet and washroom sanitation were very poor, affecting teaching and learning because of the unpleasant stench from the toilets and washrooms. In addition, science laboratories were available; however, the colleges do not have competent laboratory assistants. Similarly, most of the laboratories were without enough computers and low seating capacities. Due to overcrowding at certain classes, some trainee-teachers did not receive the required number of on-centre teaching practice supervisions from their tutors. This adversely affected their effectiveness.

Walters (2002) further found that quality infrastructure and learner support services of the colleges have significant positive relationship with trainee-teacher effectiveness. However, the trainees' gender has no significant effect on their views of the institutions' infrastructure and learner support services qualities. On the basis of the findings, Walters (2002) recommended that the various library facilities in the colleges should be stocked with current books for trainee-teacher effectiveness. Also computer laboratories should be established to enable science tutors demonstrate to trainees how certain science concepts are taught. In addition, the colleges should go by the GES directive on enrolment of 35 trainees per class to enable each of them to have sufficient number of teaching practice and supervisions from their tutors.

Jung (2012) found that South Korea's e-learners perceived staff support to be the most important indicator of e-learning quality, followed by institutional quality assurance mechanisms and learning tasks. Furthermore, Kwakyewaa (2013) also examined the perceived effect of UCC distance education on teachers in the basic schools in the Kwahu Municipality. The findings that emerged from Kwakyewaa's (2013) study revealed that quality infrastructure and learner support services are vital tools in ensuring that the products of the university are transformed to effective and efficient teachers. In relation to the effects of UCC DL on basic school teachers' performance, it was revealed that at the study centres, where distance learners study, lacked support services in the form of guidance and counselling.

Kwakyewaa's (2013), study revealed that over 71.4 percent of respondents admitted that support services in the form of pre-counselling on choice of programme, study procedures, provision and use of the library, are key to their success and demonstration of in the course of pursuing the programmes and beyond. Also, the findings show that gender has a significant effect on students' perception towards the various support services provided to them and the infrastructure quality of the CoDE centres. The female students perceived them worse than their male counterparts.

Based on the key findings that emerged from the study, Kwakyewaa's (2013), recommended that guidance and counselling units should be established in every study centre to provide counselling support services to student before and in the course of pursuing the programmes till completion of the programmes of

study. In order to ensure quality performance of tutors and students, seminars and workshops be organised for course facilitators in order to sharpen their skills, methods of lesson delivery and strategies to assist adult learners on the DL programmes.

Garrison (2014), defined learner and instructor supports as the resources that learners and instructors can access in order to carry out the learning processes. They indicated that in distance education, support is concerned with a range of human and non-human resources to guide and facilitate the educational transaction. Garrison (2014) observed that these resources may be library facilities, various media and software programmes, community leaders, or they could be various socio-economic variables such as student's financial self-sufficiency and capacity to cope with their roles and responsibilities in the family and community. In addition, Garrison (2014), indicated that the most important form of support in DL educational transaction is the quality of the instructor, who through his/her guidance and direction can assist the students to achieve their goals and develop control of the educational process. Dillon and Blanchard (2015), came out with four types of support systems: learner support and learner needs, learner support and content, learner support related to the institutional context, and learner support and technology.

Heck (2017) also examined the relationship between teacher quality as an organisational property of schools and students' achievement and growth rates. A sample of 315 at Florida Atlantic University was used. One of the objectives of the study examined new roles for student support services in DL. Support service

in DL has been defined by Dirr (as cited in Heck, 2017) as a variety of non-academic interactions that the student has with a college or university which are part of quality instruction equation. These include pre-enrolment services (recruiting, promotion, and orientation), admissions and registration, academic advising, financial planning and management, library and bookstore services, academic and career counselling, social support services, degree and transcript auditing, and technical support.

However, Heck (2017) did not specify the population and criteria for their sample selection as well as the delimitation of the study for readers to appreciate the representativeness of the sample and the authenticity of the findings. That notwithstanding, the following finding and recommendation are relevant for this current study. From respondents' perspective, the study revealed some quality variables of support services that were relevant for their satisfaction, effectiveness and success on the DL programmes. Heck (2017), study further revealed that quality infrastructure and learner support service have a significant positive relationship with students' achievement and growth rates. However, gender was seen as a variable without any impact on infrastructure quality and students support services.

Impact of quality evaluation on trainee-teacher effectiveness

According to Vermula (2013), quality evaluation must follow six broad parameters. These parameters are curriculum design, content and organization; teaching, learning and assessment; student progression and achievement; and

student support and guidance. Vermula (2013), found that enhancing these parameters positively help in boosting teachers' effectiveness. Amoono (2016), also examined the impact of course tutors evaluation of trainee-teachers on the topic: Evaluation of the teaching practice component in teacher preparation at the UCC, Ghana. The target population was all 1,098 level 400 Bachelor of Education students of UCC comprising of teaching practice supervisors from UCC, 90 other participants from Colleges of Education and heads of Senior High Schools (SHS) in Cape Coast.

The basis for using such a sample was clearly explained. Also, Amoono (2016) used the stratified random sampling technique to select the respondents. However, the participants were selected purposively. These sampling procedures were used appropriately. Data was collected using questionnaires and interview guide. The data were analysed using Pearson correlation co-efficient together with independent samples t-test. The usage of these statistical tools is in line with other studies; however, their appropriateness was not proven. The study failed to indicate the nature of the distribution, whether it is normal or skewed.

However, the findings that emerged from Amoono's (2016), study revealed that female students demonstrated greater effectiveness in teaching than their male counterparts. Also, evaluation was not frequently done as expected and some trainees did not get the required number of supervisions and evaluation specified by UCC. Again, trainee-teacher performance with initial training or practice performed better than their counterparts (Senior High School Graduates) who never had any experience of initial training in teaching. Some supervisors or

mentors were not well-equipped for supervision and some of them did not have enough logistics to effectively do their work. Amoono (2016), therefore, recommended refresher courses, workshops and seminars be mounted for supervisors, mentors, heads of SHSs to equip them with new techniques and strategies of helping trainee-teachers to demonstrate high level of effectiveness.

Quality Interaction and Trainee-teacher Effectiveness

Chen (2008) reported that Chinese online learners ask for more teacher-student and student-student interactions and flexible learning activities that offer guidance, while their institutions place more emphasis on provision of video lectures and multimedia resources and content design that follows a certain standardized procedure.

According to Farajollahi, Zare, Hormozi, Sarmadi and Zarifsanaee (2010), assessment of DE suggests that in recent times, attention toward DE has increased in most tertiary institutions worldwide. Therefore, improving the quality of the curriculum and instruction of DE depends on the combination of the right facilities and capabilities associated with the related learning theories. These theories should encourage active learning and teaching strategies, cooperation, and flexibility focused on the learner in distance education. In the light of this Farajollhi et al. (2010), conducted a study in line with conceptual model for effective distance course facilitation regarding how course facilitators should initiate interact with learners in course of facilitation and came out with the following recommendations based on expert views:

1. Student-faculty interaction, should be collaborative, encourage active learning through giving prompt feedback to learners.
2. In course of facilitation the following kinds of interaction should exist; Student-faculty interaction and Student-student interaction.
3. Facilitation should include student development and support, Student communication and presentation of assignments in class and peer assessment. Interaction, learner-centred, collaboration, active learning, learner preparation, time on task, considering the learners' individual differences.
4. Interaction should be learner-centred, assessment-centred; knowledge-centred; and community-centred.

Farajollhi et al. (2010), survey the views of 15 experts on how interactivity in DL course facilitation should be done with special focus on interaction which revealed key types of interaction in educational environment that must be encouraged by instructors. First, emphasis should be on learner-content. That is, communication of the learner, content is as a cognition interaction which is associated with the content that leads to the learner and learning constructive-cognitive changes. In this regard, the content should be suitable and within the cognitive grasp of the learner. The second is teacher-learner where communication of the learner and teacher is an important factor in preserving interest and motivating the learner. This should be done frequently with language suitable and easy to understand and respond to by the learner. This type of interaction is a new dimension in DE and points out the learner centric in

learning. The learners' interaction is necessary for making deep learning and constructing knowledge. The relation and sharing the opinions and ideas with other students increase the learners' motivation and interest (Anderson & Dron, 2010).

The third being content-content analysis. In this type of interaction, the content updates automatically through different entrances of receiving data and learning sources constantly develop through the learner's communication with intelligence factors. Content should suit learner level and free of errors. The fourth is instructor-instructor. This type of communication and interaction form the learning societies of the instructors. Moore and Kearsley (2014) recognise the close instructor co-workers and not the experts as the first and most important source of information and are helpful for encountering technical and pedagogical problems. These problems occur much more when the instructors do not communicate with each other. As a result, there must be a group of instructors who can support other instructors.

The fifth parameter being learner-technical supporter intervention, that is, technical supporter has a significant role in ICT based education; it supports learners during the learning procedures and solves their technological difficulties. The last being instructor-technical supporter: the supporter assists the learner in planning and production of electronic courses and removes his technical difficulties during the instruction.

Clotfelter's, Helen's and Jacob's (2016), study also revealed that gender has a significant effect on instructional quality dimensions. Gender differences in

the perception of quality in DL suggest a need for considering these differences in developing, delivering, and supporting DL. The study revealed that the female students, compared with the male students, perceived all quality domains and dimensions as being more important in evaluating DL quality. In addition, lack of support for female learners was found in the perceived barriers to DL advancement. These findings imply that even though DL has contributed to widening access to education and reducing the gender disparity in education, there still exists a lack of gender-considerate supports in Asian DE (Clotfelter et al., 2016).

Conceptual Framework

Generally, there is no common accepted definition for quality in DL. This is because quality is evaluated at different levels and contexts. According to Edna and Kim (2005), the definition of quality in DL changes depending upon the level, time and context within which quality is being measured and/or addressed. Buzdar and Ali (2013), define quality as meeting accreditation standards. Hanson (2013), on the other hand defines quality as utilising tools such as interaction, self-examination, and student evaluations. Quality can also be seen as effective and appropriate instruction that emphasis on the individual learner (Emmer & Stough, 2015).

According to Mbwesa (2014), assessment of instruction in distance education cannot be done without consideration to quality standards and variables established to guide instruction in higher education. As a result, Mbwesa (2014)

outlined 10 quality dimensions which influenced me in adapting part of her instructional quality dimensions for this study. The dimensions were faculty support, student support, interactive tasks, pedagogical, evaluation and assessment, infrastructure, institutional quality assurance mechanism, institutional credibility and accreditation, course development, and information and publicity dimension.

Based on the ideas that emerged from the review of related multiple theories and the empirical works, the researcher was able to conceptualise the argument of the study in to coherent model. In other words, the conceptual framework for this study took into consideration all the possible factors from the literature and from observations to derive the dependent, independent, and gender variables. The dependent variable was trainee-teacher effectiveness while the seven dimensions of instructional quality (See Figure 2) constitute the independent variables. The conceptual framework is illustrated in Figure 2.

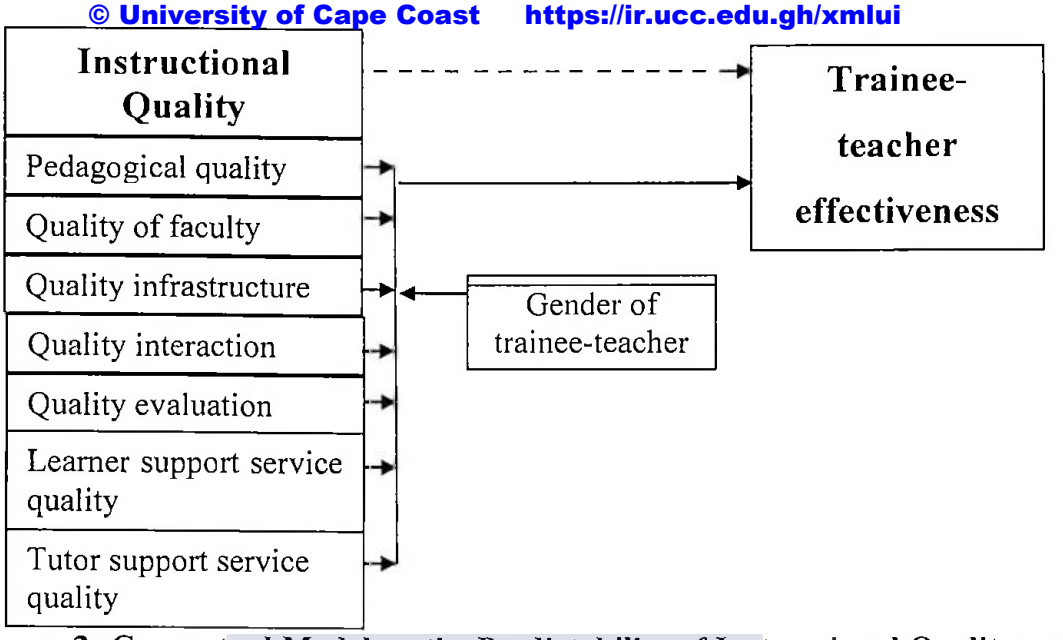

Figure 2: Conceptual Model on the Predictability of Instructional Quality on Trainee-teacher effectiveness

Source: Field work (2017)

I am of the view that distance learners of CoDE, UCC consider the seven dimensions of instructional quality depicted in Figure 2 as those that really defined DL instruction. These dimensions of quality have been explained earlier under the operational definitions in Chapter One of this study.

Quality teaching or instruction does not exist independent of quality learning and application or transfer of learning to practical situations. To ensure high level of instructional quality on the part of trainee-teachers, there is the need to develop and implement a system for high-quality teaching that is predicated on curricula, assessment, and instruction as they facilitate all learners' attainment of deep understanding of the disciplines and concepts. When students explore concepts over time as opposed to facts in isolation, they develop deeper understanding and are able to transfer knowledge across disciplines and situations.

As presented in Figure 2, the argument of the study is that trainee-teachers benefiting from instructional quality dimensions influence their effectiveness positively. This means that when course facilitators are able to use appropriate instructional methods that promote learner interactions during their OCTP as well as deliver suitable and quality content to learners, they will be able to meet the expected unvaried teaching standards established by UCC. These include desired standard of teaching, adequate number and level of teaching per week. These dimensions to a large extent will positively predict trainee-teachers' level of effectiveness in teaching that meets pre-specified standards and goals. It will also boost trainee-teachers' belief in their personal ability to execute the courses of action needed to positively affect student performance.

Therefore, if the course facilitators'/tutors instructional quality dimensions are viewed in positive terms or are in good shape, they will be in a better position to put in some level of effort in their teaching and supervision of OCTP which will strengthen their learners teaching skills and in the long run to boost their effectiveness. Trainee-teachers believing that they can perform well in the programme with some level of effort in their instructional practices will significantly increase their effectiveness in the teaching profession. Gender of trainee-teachers was also considered. This was so because I am of the view that in Ghana, a patriarchal society, gender has a significant effect on adult education since some sections of the society still hold on to certain gender roles which normally go against females. The study, therefore, further examined the influence of gender on trainee-teachers' instructional quality dimensions and effectiveness.

Summary of Chapter Two

The literature review focused mainly on conceptual, theoretical and empirical review of the study. Reviewing the literatures above, a number of concepts are identified for this study like instructional quality, pedagogical quality, faculty quality, quality infrastructure, quality interaction, quality evaluation, learner/tutor support services quality, and teacher effectiveness. These concepts can be considered as important indicators to practice quality instruction and effectiveness in DL. High level of trainee-teacher effectiveness largely depends on appropriate use of pedagogical skills, high level of faculty, quality teaching strategies such as collaborative or interactive approach, and provision of infrastructure. The literature show that the dimensions of instructional quality do have some influence on teacher effectiveness. Likewise, gender of the trainee-teachers has significant effect on their instructional quality dimensions and effectiveness.

Instructional quality is a complex concept that is difficult to measure, in part because there is no consensus among policy makers, educators, and researchers of what it means (Darling-Hammond, 2014). Research has shown that there are two major categories that characterise the work in instructional quality, teacher characteristics and classroom effectiveness (Heck, 2017). How these categories are related to each other has not been widely researched. The research that has been done has indicated that instructional practices are influenced by the depth and breadth of the teachers' conceptual understanding of the subject matter. When trainee-teachers have a deeper understanding of the subject matter they are

teaching, that gives them access to a broad repertoire of pedagogical strategies to use with their students.

It is further noted in the literatures that support services for tutors and learners make the teaching and learning process easier. In addition, teachers' knowledge, qualification, and experience are regarded important elements for quality instruction. In fact, the trainee-teachers may not be effective or efficient unless these factors are available and practised properly.

The present study investigated how all the seven dimensions of instructional quality relate to trainee-teacher effectiveness. There is a need for this kind of study that accounts for multiple aspects of instructional quality. Few empirical studies to date have assessed the various components of instructional quality directly and used them to predict teacher effectiveness (Emmer & Stough, 2015; Heck, 2017; Mbwesa, 2014). The present study not only investigated the relationship among the dimensions of instructional quality and trainee-teacher effectiveness, but it attempted to examine the impact of gender on the components of instructional quality, and the influence these components have on trainee-teacher effectiveness. However, the next chapter explains the methodology followed in the conduct of this study.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter describes the procedures and methods that were used in conducting the study. That is, to assess the impact of instructional quality on trainee-teacher effectiveness in distance education, focusing on CoDE, UCC. The chapter looks at the study institution and area, research approach, research design, population, sample and sampling procedure, data collection instruments, validity and reliability of the instruments, and ethical issues considered in the study. In addition, the chapter covers the data collection procedures and data processing and analysis.

Study Institution and Area

The College of Distance Education (CoDE), University of Cape Coast (UCC) formerly Centre for Continuing Education (CCE), was established in 1997 as one of the units under the then Faculty of Education, now College of Education Studies of UCC (CoDE, UCC, 2017b). The Centre was later upgraded to a college status on 1st of August, 2014. Currently, CoDE, UCC has four departments, namely, Department of Education, Department of Business Studies, Department of Quality Assurance and Enhancement, and Department of Mathematics and Science Education. Also, there are several units that serve as auxiliary departments or units to the main departments and the college as a whole.

The concept of distance education in Ghanaian public universities came about as a result of the feasibility study report submitted to the Government of Ghana (GoG) by a team led by Prof. Kwapong, the former Vice Chancellor of the University of Ghana (UG) in the late eighties. Based on the recommendations of the report, all public universities in Ghana, including UCC, were directed to embark on distance education programmes with the primary aim of increasing access to university education. In response to this directive, UCC, under the leadership of Professor S. K. Adjapong, established a unit for distance education, which was upgraded to CCE and CoDE subsequently. An ad hoc committee, under the leadership of Professor Pecku, was formed to work out the modalities of the distance education programmes for take-off in 1991. After some years, Mr. Albert Kwabena Koomson was introduced into the scene by the university (CoDE, UCC, 2017b).

The centre started with an initial student enrolment of 750 in 2001. Currently, the college has an enrolment of 55,456 learners made up of 52,029 undergraduate students in 90 study centres across the ten regions of Ghana and 2,427 postgraduate students in five regional centres (CoDE, UCC, 2017a). It runs programmes in education and business leading to the award of Diploma, Bachelor and Masters degrees. In all, the college currently runs 27 programmes (UCC, 2016).

CoDE shares the vision of the University to be a university strongly positioned with a worldwide acclaim. As part of the vision, CoDE wants to become a reference point for the delivery of quality distance education in Ghana

and beyond (UCC, 2014; 2016). It also has a mission to pursue excellence in the delivery of innovative, demand driven, customer-oriented and cost effective distance education programmes aimed at assisting individuals in overcoming geographical, economic, social and cultural barriers to learning. According to UCC (2014), the college is made up of the Board, the office of the Provost, office of the College Registrar, office of the College Finance Officer, heads of academic departments, coordinators of administrative units, Zonal Coordinators, Regional Coordinators (Regional Resident Tutors), and Study Centre Coordinators.

The main building of the college is located at the Newsite of UCC, Cape Coast. In addition, the college has offices in all the ten regions of Ghana which are being headed by the various Regional Coordinators of the college. The study area covered the entire country, Ghana which has been stratified into three zones, namely Southern Zone (Central, Greater Accra, Western and Volta regions), Middle Zone (Eastern, Ashanti and Brong-Ahafo regions) and the Northern Zone (Northern, Upper East and Upper West regions). This was done to ensure that every part of the country is fairly represented in the study since all the learners nationwide have similar characteristics. This study covers all these three zones with study centres pursuing education programmes only. The zoning of the country into three is depicted pictorially in Appendix A.

Research Approach

There are two main approaches to conducting research: quantitative and qualitative approaches (Yates, 2014). Quantitative and qualitative approaches differ with respect to their epistemological and ontological orientations. A quantitative approach is based on information that can be measured numerically. It focuses on questions such as "How many?" and/or "How often?" which are easily processed in the form of numbers. These questions are presented as information converted into numbers. It is usually the purpose or objective of the survey that gives direction to the approach that should be used. A quantitative approach is a process directed towards the development of testable hypothesis and theories which are generalisable across settings. Various data collection techniques can be used under this approach including surveys, questionnaire, checklist, personality tests and standardised research instruments (Creswell, 2014).

In describing qualitative approach, Carson, Gilmore, Perry and Gronhaug (2015) posit that it is any kind of research that produces findings that are not arrived at by means of statistical procedures or other means of quantification. Qualitative research is multi-method in focus and involves interpretive, naturalistic and phenomenological approaches to its subject matter. According to Creswell (2015), case studies, interview guides and reviews are often more suitable for qualitative approach where subjective elements of the researcher and participants are built into the findings and conclusions. This approach is used when one wants to get a more profound understanding of a specific situation.

Here, the researcher has an unrepressed right and freedom to air his/her opinion and view and to interpret issues and concepts as he/she deems fit.

The study adopted the quantitative approach for this study. The quantitative approach was adopted based on the literature review and the research questions and hypotheses of the study. This approach was adopted for many reasons. First, it helped in presenting the results with ease, and also speeds up the conduct of the research. It also helped to cover wide range of respondents and situations with ease (Neuman, 2014). Furthermore, the approach created room for the study to analyse the data using both descriptive and inferential statistical methods which made it easier for generalisation of the findings.

In addition, the adoption of this approach helped me to make accurate predictions about relationships among the study variables, gain meaningful insights into those relationships, and verify or validate the existing relationships. However, quantitative approach tends to be inflexible, artificial and ineffective in gauging the significance that people attach to actions, and is not helpful in generating theories (Babbie, 2013).

The main reason that necessitated the adoption of the quantitative approach was the use of the questionnaire which allowed me to collect large amount of data from a sizeable population. This approach helped the researcher to collect large, appropriate and reliable data from relatively a large sample. It also helped the researcher to analyse the data with ease by adopting quantitative statistical tools.

Research Design

Research design is a master plan, framework or a blue print of how a researcher intends to conduct a study (Best & Kahn, 2012). The essence of research design is to guide the researcher on the type of data to collect, how to collect, process, and analyse them in order to answer the research questions or test the research hypotheses. The descriptive research design with a quantitative outlook which was predicated on the positivist approach was used for the study. Positivist or the scientific approach employs deductive reasoning to generate hunches or hypotheses that are tested in the real world (Ary, Jacobs, Sorensen & Razavich, 2010). It typically follows a preconceived plan and moves in an orderly and systematic fashion from definition of problem and the selection of the concepts on which to focus through the design of the study and collection of numeric data based on empirical evidence which consist of observation gathered through sight, hearing, taste, touch, or smell to the solution of the problem (Best & Kahn, 2012).

Descriptive research design involves systematic gathering of data about individuals and groups in order to test hypotheses or answer research questions concerning the current status of the subject of the study (Saunders et al., 2012). It determines and reports the way things are. Best and Kahn (2012) consider this design to be wholesome when information is needed about conditions or relationships that exist, practices that prevail, attitudes that are held or processes that are going on. It provides a relatively simple and straight forward approach to the study of attitudes, values, beliefs and motives.

The descriptive survey design guided the research activity and also ensured that sound conclusions were reached. Although the design of the study was descriptive survey, the nature of the study was cross sectional. Therefore, the researcher gathered data just once in order to meet the research objectives. In the view of Saunders, Lewis and Thornhill (2012), descriptive survey design is appropriate for it allows the researcher to collect data to assess current practices for improvement. They further point out that the design gives a more accurate and meaningful picture of events, and seek, to explain people's perception and behaviour on the basis of data gathered at any particular time.

Furthermore, the study went beyond the 'what' questions to ask 'why' and 'how' questions in order to understand the issues better. Moreover, taking into account the research questions, hypotheses, and the population under study, it was deemed appropriate to use the descriptive survey design. The design helped to achieve the purpose and to draw meaningful conclusions from the study. In addition, the adopted design helped the researcher to collect data that enabled him draw the relationship among the study variables and analyse the data. It also helped to observe, describe and document aspects of instructional quality and trainee-teacher effectiveness as they naturally occured (Greener & Martelli, 2015).

In addition, the rational for considering the descriptive survey design was because the study made use of a questionnaire with unilinear scale measurement of responses. According to Ary et al. (2010), descriptive survey design normally makes use of survey instruments such as questionnaire. Descriptive survey design

is also regarded by social scientists as the most appropriate, especially where large populations are involved (Saunders et al., 2012). Saunders et al. (2012) added that in descriptive research, there is accurate description of activities and this goes beyond mere fact-finding. Neuman (2014) also considers descriptive survey design to be wholesome when information is needed about conditions or relationships that exist; practices that prevail; beliefs, points of view, or attitudes that are held or processes that are going on within a given period of time. Neuman (2014) added that it provides a relatively simple and straight forward approach to the study of attitudes, values, beliefs and motives.

However, descriptive survey design is relatively laborious and time consuming. According to Ary et al. (2010), descriptive survey design is susceptible to, or easily influenced by distortions through the introduction of biases on the part of the researcher in the measuring of instruments. In collecting data from the respondents, the researcher can influence the responses through the designing of the questionnaire which is usually used in a descriptive study (Creswell, 2014).

Descriptive survey design is sometimes regarded as focusing too much on the individual level, neglecting the network of relations in terms of individual respondents conferring with one another in the process of responding to the items in the questionnaire posing validity challenges (Greener & Martelli, 2015). Regarding this shortfall, data collectors were trained and instructed to ensure that respondents did not seek opinions of their colleague respondents in the process of responding to the items in the questionnaires.

Furthermore, descriptive survey design relies heavily on the respondents' memory and honesty; and if they forget or decide not to be honest, it will affect the findings of the study (Kelly, 2016). This weakness is not considered to be serious with regard to this study because the issues under study are based on current experiences of respondents and do not pose any difficulty of recall on the part of respondents (Cohen, 2008). It is in this context that, the design is considered to be appropriate for this study.

In minimising the possible challenges, I adhered to the ethical guidelines set by the Institutional Review Board (IRB) of UCC. Also, the data were organised and presented systematically in order to arrive at valid and accurate conclusions. With regard to the population characteristics and data analysis procedures, meaningful and representative sample was selected and used. The researcher also described the variables and procedures accurately and completely as possible to make things easier for other researchers who may want to replicate this study. Since the study entailed a survey of course tutors' and trainee-teachers' views on the issues, situations and processes, the descriptive survey design was deemed appropriate.

Population

According to Yates (2014), population is the entire aggregation of cases that meet a designated set of criteria. In other words, it is the target group about which researchers are interested in gaining information and drawing conclusions. The target population was all CoDE Distance Learners and Course Tutors

totalling 56, 456, made up of 53,640 students and 2,816 tutors. The accessible population was all CoDE course tutors, totalling 1837, made up of 1,051 males and 786 females, and all CoDE students at all the 76 study centres offering education programmes across the country totalling 51,456, made up of 29,126 males and 22,330 females (CoDE, UCC, 2017a). This shows that the study population consisted of 53,293 respondents. The distribution of the population with regard to zones, regions, study centres, and gender is presented in Table 2.

Table 2

Population Size of Course Tutors and Trainee-teachers of CoDE, UCC

Zones	Regions	Study Centres	Course Tutors		Students		Total
			Male	Female	Male	Female	
Southern zone	Greater-Accra	Tema SHS; Papafio Hills; Odorgonno SHS, Zenith College; St. Margaret Mary; Ada College of Edu.; WASS, Adenta; Tema Parents; Fafraha Comm. SHS; Tema Datus; Ebenezer SHS,	119	90	2,360	1,802	4,371
	Volta	Mawuli SHS; Ho Poly; Akatsi College of Edu. St.Theresa College of Edu.; Jasikan College of Edu	66	50	1,520	1,166	2,802
	Central	UCC; Swedro SHTS; Sewedro SHS; Obiri Yeboah SHS; Breman Asikuma; Ngleshie Amanfrom; Apam SHS; Twifo Praso SHS; Boamponsem SHS; Dunkwa-on-Offin SHS; Datus Comp.	149	111	5,219	4,002	9,481
	Western	Holy Child College of Edu.; ST.John's SHS, Sekondi Enchi College of Edu.; TADISCO	118	88	2,208	1,694	4,108
Middle zone	Eastern	Oyoko Methodist Sch.; Ghana SHS; Abetifi College; Attafuah Oda; Akwamuman SHS; Somanya Sec.Tech; Begoro Presec	114	86	1,829	1,403	3,432
	Ashanti	KSTS; Simms SHS; Kumasi Anglican SHS; Wesley College; Mmofraturo SHS; Kumasi Poly; Serwaa Nyako SHS; T.I AMASS; Konongo Odumase SHTS; Obuasi SHTS; Asante Mampong College; Dwamena Akenten SHS; Offinso SHS; SIMMS SHS; Nkawie SHS; K.T.I; Mansoman SHS	216	161	8609	6,601	15,587
	Brong-Ahafo	Sunyani Poly; Techiman SHS; Dormaa SHS; Hwidiem SHS; Kintampo SHS; Drobo SHS; Nkoranza and Nkorman SHTS	130	98	4,511	3,460	8,199
Northern zone	Northern	Tamale College of Edu.; Tamale Poly; Gambaga Girls; Salagga SHTS; Damango SHTS	63	48	1,098	842	2,051
	Upper East	Bolga Girls; Notre Dame SHS; Zibilla SHS; Zamsi SHS	25	17	752	577	1,371
	Upper West	Wa SHS; Nandom SHS; Lawra SHS; Tumu College of Edu.	51	37	1020	783	1,891
	Sub-Total		1,051	786	29,126	22,330	53,293
	Total	***76 Study Centres Offering Education Programmes***	***1,837***		***51,456***		***53,293***

Source: CoDE, UCC, 2017a

Sample and Sampling Procedure

According to Ary, Jecobs, Sorensen and Razavick (2010), in a survey research it is impractical to investigate all elements of the target population, especially in cases where the target population is extremely large, hence, the need to draw a sample from this population of interest. The results from the study can be used to make inferences about the entire population as long as it is truly representative of the population.

A sample is a portion of the population of interest selected to partake in the study (White, 2015). That is, a sample is a sub-set of a population. The sample has properties which represents the whole. Most researchers (Ary et al., 2010; Creswell, 2014; Kelly, 2016) are of the view that the most used acceptable approach for determining the sample size in a survey is to specify your precision of estimation, and justify your choice and then to determine the sample size necessary to ensure it. As a result, a sample size of 726 obtained using Galero-Tejero (as cited in White, 2015) recommended formula was deemed appropriate. The sample comprised 397 trainee-teachers and 329 course tutors. Table 3 shows the calculation of sample size of the study.

Thus, using a population size of 53,293, the appropriate sample size for this study should not be less than 726 as indicated by the sample size calculation. The method was simple, practical, economical, quick and did not require an elaborate sampling frame which was readily available. The 726 sampled was made up of 397 trainee-teachers and 329 course tutors. According to Best and Kahn (2012), a sample size does not necessarily need to be large but how it truly

represents most of the characteristics of the elements in the accessible population is what one must look at.

Table 3

Sample Size Determination

Sample size for trainee-teachers	***Sample size for course tutors***
$n = N \div [1 + N(e^2)]$,	$n = N \div [1 + N(e^2)]$,
Where n is the sample size, N is the population size, and e is the level of precision.	Where n is the sample size, N is the population size, and e is the level of precision.
$n_1 = 51456 \div [1 + 51456\ (0.05)^2]$	$n_2 = 1837 \div [1 + 1837\ (0.05)^2]$
$n_1 = 51456 \div [1 + 51456\ (0.0025)]$	$n_2 = 1837 \div [1 + 1837\ (0.0025)]$
$n_1 = 51456 \div [1 + 128.64]$	$n_2 = 1837 \div [1 + 4.5925]$
$n_1 = 51456 \div 129.64$	$n_2 = 1837 \div 5.5925$
$n_1 = 396.9$	$n_2 = 328.5$
$n_1 \approx 397$	$n_2 \approx 329$
Sample Size $(n_1 + n_2) = 726$	

The lottery method of simple random sampling technique was first employed to select one region from each of the three Zones. Using the lottery method, the researcher assigned numbers to the various regions on slips of papers and put them into an opaque polythene bag. This was done for each of the zones. In the case of Southern zone for example, four slips of papers were put in the opaque polythene bag and mixed well. After that, I removed one slip from the bag without looking into it. Same procedure was used for the other two zones. Each assigned number picked was recorded. At the end of the picking process, one region was selected from each zone. In all, three regions were selected. These

were Greater-Accra, Ashanti and Northern Regions. All the 34 study centres in these selected regions that run education programmes were used for the study. The sample distribution of the respondents is presented in Table 4.

This was followed by the use of proportionate stratified random sampling approach in the selection of respondents. Since the total population sizes of course tutors and trainee-teachers in the selected three regions were 697 and 21,312 respectively (See Table 2), the proportional sampling procedure was used to allocate 47.2 percent for course tutors and 1.9 percent. These were obtained by dividing the samples of the study by their respective populations for tutors and trainee-teachers respectively (Tutors: 329/697x100;Trainee-teachers: 397/21312x100) with regard to gender stratum. This was done to ensure that there is fair and equitable distribution of the elements to the various strata. Purposively, the study selected only trainee-teachers who had been scheduled to do On-Centre Teaching Practice at the various study centres.

The stratified sampling procedure, which is one of the probability sampling techniques, was used to select respondents from each of the study centres of the three regions selected randomly based on gender. Probability sampling is a technique of drawing sample in which each sampling unit has a known probability of being included in the sample (Gravetter & Forzano, 2015). This employs strict probability rules in the selection of the sample units in that every unit of the population has an equal, calculable and non-zero probability to be selected in the sample. This kind of sampling permits computation of selection,

Table 4

Sample Distribution of the Study

Zones	Regions	Study Centres	Course Tutors		Students		
			Male	Female	Male	Female	Total
Southern zone	Greater-Accra	Tema SHS; Papafio Hills; Odorgonno SHS; Zenith College; St. Margaret Mary; Ada College of Edu.; WASS, Adenta; Tema Parents; Fafraha Comm. SHS; Tema Datus; Ebenezer SHS,	56	42	60	46	204
Middle zone	Ashanti	KSTS; Simms SHS; Kumasi Anglican SHS; WESCO; Mmofraturo SHS; Kumasi Poly; Serwaa Nyako SHS; T.I AMASS; Konongo Odumase SHTS; Obuasi SHTS; Asante Mampong College; Dwamena Akenten SHS; Offinso SHS; SIMMS SHS; Nkawie SHS; K.T.I; Mansoman SHS	102	76	139	95	412
Northern zone	Northern	Tamale College of Edu.; Tamale Poly; Gambaga Girls; Salagga SHTS; Damango SHTS	30	23	31	26	110
	Sub-Total		188	141	230	167	726
	Total	***34 Study Centres Offering Education Programmes***		***329***		***397***	***726***

Source: Created from CoDE, UCC, 2017a

The stratification process was done to ensure that the various homogeneous groups within the population were taken care of in the sampling process since that was used to generalise to the larger population. The use of this sampling procedure was to ensure that the sub-groups in the population had equal chance of being represented in the sample.

In each of the regions selected, various sampling frames were designed based on the data provided by the College with regard to teaching practice assessors and their respective trainee-teachers. The sampling frames were designed in line with the gender stratum in each of the selected regions. The computer generated random number sampling technique was used to generate the random numbers that were in line with each of the frame designed by the researcher using a Microsoft Excel tool. Specifically, the computer random number generated table had the same number of rolls and columns with its corresponding sampling frame designed. In designing the random number table, the first and last numbers were entered with regard to the study population to generate the tables for each stratum or category of respondents. With regard to the selection process, the researcher first of all, identified each member in the sample frame which was constructed using statistical figures obtained from the data provided by the college.

For example, in selecting male course tutors in the Southern zone (Greater-Accra region), two sampling frames were designed, one for male and the other for female. Note: all the study centres in the Greater-Accra, Ashanti, and Northern regions where education programmes were offered were captured for the

study (See Table 2). In the case of Greater-Accra region (Southern zone), the total study population of course tutors was 209, which comprised of 119 males and 90 females. Therefore, the sample frame numbering for the male group was 001 to 119 while that of the female group was 01 to 90. As indicated in Table 4, the study was to select 56 males and 42 females with regard to course tutors. The emphasis of the selection process was on the position of the course tutors in the sampling frame. That was why the number of rolls and columns in the computer random number generated table were the same as the sampling frame for this group.

Since the number of rolls and columns in the sampling frame and the computer random number generated with regard to male and female course tutors in the Greater-Accra region were the same, all numbers that were equal to or less than 56 for male stratum and 42 for female stratum were selected. Note: emphasis was on the position of these numbers since the number of rows or columns in the sample frame for the groups were equal to the random number table generated. In the end, the study selected exactly 56 for male and 42 for female positions in the random number table generated for the two strata, and the course tutors in these positions in the sample frame were selected as expected. These processes were replicated for the selection of the remaining course tutors in the selected regions. The process of selection continued until the required sample size of 329 was obtained with regard to the course tutors.

In relation to the trainee-teachers, the lottery method of simple random sampling technique was employed again to select them. In the case of the trainee-

teachers, the selection was done based on the On and Off-Centre-Teaching Practice schedule in each of the centres within the various regions selected. All the selected trainees-teachers were already assigned to various course tutors to assess their On-Centre-Teaching Practice. Therefore, the selected course tutors' schedule for On-Centre-Teaching Practice was used to randomly select the trainee-teachers assigned to them.

For example, in the Tamale College of Education study centre, one of the course tutors selected assessment schedule was made up of seven male trainee-teachers and five female trainee-teachers, which the study was to select only three males and two females from the tutor's schedule. As a result, the researcher assigned numbers to the various students on slips of papers and put into an opaque polythene bag. The papers were 12 in number, seven for males and five for females. The papers were put in the opaque polythene bag and mixed well. After that, the researcher removed one slip from the bag without looking into it. Each assigned number picked was recorded. At the end of the picking process, three male and two female trainee-teachers were selected from that tutor's assessment schedule. In the selection process, those numbers that were picked twice were ignored and thrown back into the bag for new selection. This process was repeated in all the selected regions and study centres using the tutors' assessment schedule with regard to the On-Centre-Teaching Practice schedule. In all, 397 trainee-teachers were selected.

The proportionate stratified random sampling procedure and the lottery method of simple random sampling were used because they increase the

likelihood of representativeness. They are all probability sampling procedure which virtually ensures that key characteristics of individuals in the population are included in the same sample (Gravetter & Forzano, 2015). However, it requires more effort on the part of the researcher (Kelly, 2016). Despite this shortcoming, the lottery method of simple random and the proportionate stratified random sampling procedure were considered the most convenient sampling techniques for this study.

Sources of Data

The study was designed in such a way that it allowed the use of multiple sources of data collection. That is, both primary and secondary data were used in the study. The primary data were collected through field survey in the institution under study using questionnaires. The primary data were obtained from both course tutors and trainee-teachers. The secondary data on the other hand were gathered largely to help in the designing of the sampling frames. The secondary data were obtained through the enrolment records of the college, course tutors' On-Centre-Teaching Practice schedules, monitoring and evaluation reports, and congregation brochures. According to Ary et al. (2010), secondary data have been identified to be economical and having the potential to give high quality of information with the possibility of retesting.

Data Collection Instruments

Questionnaires were the instruments used for the data collection. A questionnaire is a formally organised set of written items presented in a uniform manner to a number of respondents or persons. This is to elicit responses from them on a specific subject matter (Zikmund, 2010). A questionnaire consists of questions or statements related to the aims of the study, hypotheses to be tested and questions to which the respondent is required to answer (Neuman, 2014). The questionnaires, as presented in Appendices 'B' and 'C', were designed for the selected trainee-teachers and course tutors respectively.

The trainee-teachers' questionnaire (See Appendix B) was in two main sections, namely: A and B. Section 'A' was used to elicit data on the background characteristics of the trainee-teachers. Items considered include gender, marital status, and age. Section 'B' was used to elicit data on the instructional quality at the various study centres. Student Evaluation of Quality Instruction (SEQI) in DE dimensions developed by Mbwesa (2014) was adapted and used to design the items in section 'B' of the trainee-teachers' questionnaire. Mbwesa (2014) developed the instructional quality measurement scale based on six quality dimensions created by Jung (2012) for quality DE and course facilitation. These six dimensions are captured in the section 'B' of the trainee-teachers' questionnaire. The dimensions are as follows:

1. Pedagogical domain. This domain has also been used for defining quality in DE in other studies (Jung, 2012). It relates to methods employed by instructors in the learning and teaching process.

2. Learner support services relates to variables such as learner welfare, administrative support, technical, financial, psychological, social, and administrative support, and flexible payment among other services that support instruction given student-teachers.
3. Infrastructure dimension is related to the use of physical and technological infrastructure such as availability of computer laboratories internet access, and library services among other facilities to enhance instruction.
4. Faculty dimension deals with support generally given to the teaching staff, their level of qualification and how they are related to instruction and learner effectiveness.
5. The evaluation and assessment dimension refer to activities and policies concerned with students' learning assessment and feedback.
6. Interactivity dimension deals with how course facilitators initiate interaction among learners in the course of facilitation to ensure effective learning.

Furthermore, nine and three close-ended items were used to collect data on pedagogical quality and quality of faculty respectively. In relation to infrastructure and interaction qualities, five close-ended items each were used to collect the data. Also, six and ten close-ended items were used to elicit data on evaluation and learner support service qualities respectively. In all, 38 close-ended items were used to collect data on instructional quality (See Section 'B' of Appendix B). Responses to the items in this section were measured numerically

using unilinear scale such that the higher the number the more you agree with the statements and the lower the number the more you disagree with the statements.

The questionnaire designed for the course tutors also comprised three sections: A, B, and C (See Appendix C). Section 'A' was used to collect data on the background characteristics of the course tutors. Items considered were gender, marital status, age, highest level of educational qualification, and years of teaching experience at the tertiary level. The course tutors' questionnaire was constructed based on the CoDE, UCC Trainee-teacher Effectiveness Assessment (TEA) form 'A' for course facilitators to assess trainee-teachers' effectiveness for analysis. Section 'B' was used to elicit data on tutor's support service quality at the study centre. This section focused on support services course tutors usually receive to enable them offer quality instruction to their learners.

Section 'C' of the tutors' questionnaire was used to elicit data on trainee-teachers effectiveness. Items used in this section were adapted from the TEA form 'A' which was used by them to collect data on trainees' effectiveness for the study. Trainee-teacher effectiveness scale was made up of three major sections: Objectives and core points in lesson plan, teaching methodology and delivery, and classroom organisation and management. Five items each were used with regard to sections 'A' and 'B' while 23 items were used in section 'C'. This shows that 23 close-ended items were used to elicit data on trainee-teacher effectiveness. See Appendix C for Course Tutors' questionnaire. Again, in relation to Sections 'B' and 'C' of the course tutors' questionnaire, four-point unilinear scale was used. That is, responses to the items were measured numerically using unilinear scale

such that the higher the number, the more you agree with the statements and the lower the number, the more you disagree with the statements.

The questionnaire was used to collect the data because it was relatively less expensive than other methods such as interview and observation. In addition, it created room for me to approach the respondents more easily. Also, the questionnaire used was deemed appropriate for the study because it provided a much quicker means of gathering information from such a fairly large literate population. In addition, it was easy to construct. According to Best and Kahn (2012), questionnaire also allows for anonymity of respondents which normally makes it easier for respondents to volunteer information without fear of victimisation. According to Gravetter and Forzano (2015), questionnaire is limited to literate population and does not provide an opportunity to collect additional information. In the case of this study, the respondents who were accessible to the study were all literates and were in a position to understand the items in the questionnaire as expected.

Some limitations of questionnaires, however, are that some respondents do not tell the truth about certain sensitive issues. Also there is often the problem of the halo effect and low return rate. To eliminate or reduce these limitations, the questionnaire was developed in simple language to facilitate the understanding of respondents. The items on the questionnaires, both trainee-teachers' and course tutors' questionnaires, were constructed using close-ended items which allowed respondents to select from a number of options. Close-ended questionnaire items measure opinions, attitude or knowledge, and it is easy to use, score and code for

analysis on the computer. Closed-ended questionnaire has the tendency to enhance consistency of responses among respondents (Gravetter & Forzano, 2015). Despite the few limitations aforementioned, the questionnaires helped me to get first-hand data from the trainee-teachers and course tutors. This helped in enhancing the originality and authenticity of the study.

Measurement of variables

The variables of the study were measured quantitatively at the interval level using a four-point unilinear scale. This means, responses to the items were measured numerically as indicated earlier. This subsection focuses on describing the measurement of the variables.

The ***independent variable*** of the study was instructional quality. The measurement of instructional quality in this study focused on behaviours, materials, and characteristics of instructors or the instructional process which is assessed using student survey. Emphasis was on instructional quality components such as pedagogical approaches, student-teacher interactions, the type and use of assessments, faculty quality, infrastructure, learner support service, and tutor support service. Also, how student behaviours and accomplishments, such as achievement of learning outcomes, course grades, persistence, or choice of major, vary by instructor were considered.

Multiple close-ended items were used to elicit data on the seven components or dimensions of instructional quality used in this study (See Figure 2). Responses to the items were measured quantitatively at the interval level using a unilinear scale such that the higher the number the more one agrees with the

statements and the lower the number, the more one disagrees with the statements. Multiple items were formulated for each of the dimensions with regard to instructional quality. The mean scores with regard to the responses of the various items under each of the seven dimensions of instructional quality were pooled together to form each of the dimension. The seven dimensions were also pooled together to form the instructional quality variable.

The ***dependent variable*** for the study was trainee-teacher effectiveness. It refers to the extent to which a trainee-teacher's level of teaching achieves or meets pre-specified standards and goals. That is, course tutor's belief in his or her student's personal ability to execute the courses of action needed to positively affect their work performance. Trainee-teacher effectiveness was measured using 23 close-ended items that were adapted from CoDE, UCC Trainee-teacher effectiveness Assessment (TEA) form 'A' for course facilitators.

Objectives and core points in lesson plan, teaching methodology and delivery, and classroom organisation and management were the components of trainee-teacher effectiveness. They were made up of six, twelve, and five close-ended items respectively. All the 23 items were pooled together to form trainee-teacher effectiveness. This was possible because the items used were measured numerically using unilinear scale such that the higher the number the greater the trainee-teachers' effectiveness, and the lower the number the more trainee-teachers' level of ineffectiveness in teaching.

Validity and reliability of the questionnaires

In order to ensure the validity and reliability of the questionnaires that were used for the study, a pre-test was carried out. A sample of 72 respondents, made up 60 trainee-teachers and 12 course tutors, from Oyoko centre of CoDE, UCC in the Eastern Region of Ghana, specifically, Koforidua were used. This study centre was not part of the main study. The respondents were selected because they share similar characteristics as those in the other centres of the college. Also, the respondents from this study centre were selected due to their closeness and easy accessibility to the researcher.

Validity is the extent to which an indicator accurately measures a concept it intends to measure (Ary et al., 2010). In other words, validity can be defined as the degree to which an instrument measures what it is supposed to measure. Internal validity was assessed to test the ability of the questionnaires to measure what it was designed to measure and to help detect any errors that could obscure the meaning of the questionnaires and prevent it from eliciting spurious responses. According to Neuman (2014), the experience of pre-test respondents is used to improve and amend the questionnaire before sending it out to the main research population. Validity, in the context of this study refers to how accurately the questionnaires were able to collect the responses from the course tutors and trainee-teachers as intended in order to deal with the purpose of the study.

In relation to content validity, the study ensured that the items in the questionnaires covered the domain that they were purported to measure with regard to the purpose of the study. This was determined by the expert judgment of

the two able supervisors and other four professionals in the field of educational psychology, and measurement and evaluation. The questionnaires were made available to these academics and professionals who helped in shaping them with the view of establishing content validity. The questionnaires were given to these experts to assess the quality of each item in the context of clarity, ambiguity and generality for the necessary corrections to be made. The study paraphrased, modified and deleted materials that were considered inaccurate or items that infringed on the confidentiality of the respondents. Furthermore, these academics and professionals helped scrutinise unclear, biased and deficient items, and evaluate whether items were members of the subsets they had been assigned.

With regard to face validity, the study ensured that the questionnaires measured what they appeared to measure. The face validity of the study was granted by my colleague students and educationalists. Construct validity, on the other hand, was taken care of by making sure that the instrument relates to the various constructs that it was purported to measure. For example, does the questionnaire measure the construct of instructional quality and teacher effectiveness the way the study designed it.

In addition, factor analysis was performed to ensure construct validity of the questionnaire. This analysis was conducted using the pre-test data. This was done to find out the factors that measured the components of instructional quality. Items with values greater than one were extracted, and also items with a correlation coefficient below $\pm$ 0.3 were also erased on the grounds that they were thought to have low commitment to the elements extricated (Pallant, 2014). The

extracted items were pooled together to form each of the variables using average responses since the responses were measured using a unilinear scale. Initially, instructional quality and trainee-teacher effectiveness variables were made up of 62 and 33 close-ended items respectively. However, after the factor analysis, they were reduced to 43 and 23 respectively, which were later used (See Appendices B and C).

The questionnaire copies were personally delivered to the respondents with the help of some regional and centre coordinators of the college. All the copies of the questionnaires administered were retrieved as expected. The number of respondents used for the pre-testing was sufficient to include any major variations in the population as confirmed by Ary et al. (2010) that for most descriptive survey studies using questionnaires, a range of five to ten percent (5% - 10%), of the sample size, for pilot study is sufficient.

With the help of the Predictive Analytic Software (PASW) Version 21.0, the researcher used a Cronbach's Alpha reliability coefficient to measure the internal consistency or reliability of the questionnaires. Since the questionnaires were used to collect quantitative data, and also the responses to the items were measured numerically using a unilinear scale, the study used a Cronbach's Alpha reliability coefficient to measure the reliability. According to Pallant (2014), the most appropriate measurement tool to use in finding out the reliability coefficient of an instrument which is designed to elicit quantitative data is the Cronbach's alpha reliability coefficient tool. Therefore, it was appropriate to use this statistical tool in measuring the consistency of the questionnaires.

This statistical tool varies from zero to one, and though alpha has several interpretations, the cut-off value is more useful in determining whether a scale is reliable. The closer the coefficient is to 1.0, the higher the reliability. The standard rule of thumb is that alpha must be or greater than approximately 0.70 to conclude that the scale is reliable. Indeed, Darren and Mallery (2014) suggest that a rule of thumb that applies to most situations is Excellent ($\alpha > 0.9$), Good ($\alpha > 0.8$), Acceptable ($\alpha > 0.7$), Questionable ($\alpha > 0.6$), Poor ($\alpha > 0.5$), and Unacceptable ($\alpha > 0.4$). The Cronbach's Alpha of the trainee-teacher effectiveness and course tutors questionnaires were 0.817 and 0.912 respectively, which are within acceptable range (Chen, 2008).

Ethical Issues Considered in the Study

The issue of ethics is an important consideration in research that involves human subjects (Best & Kahn, 2012). Research ethics is defined as the appropriate behaviour of a researcher relative to the norms of society (Zikmund, 2010). The researcher, research subjects, and clients of the research were protected from any adverse consequences of the study by following laid down rules and procedures of ethics in research. The study considered ethical factors in a number of ways. Ethical issues that were catered for in this study included right to privacy, voluntary participation, no harm to participants, anonymity, confidentiality, deception, and scientific misconduct.

First, in a survey research, the clearest concern in ensuring the respondents' interest and well-being is protecting their identity. In this regard, the

researcher adopted anonymity and confidentiality techniques to ensure their protection. The respondents were assured that the information they were to provide would be kept as confidential as possible. On the issue of deception, I did not consider it as a technique to collect from respondents as some investigators believe that it is appropriate sometimes to conceal a researcher's purpose in order to improve the quality of the study. Rather, I introduced myself to the respondents and made it clear to them that the study was meant for an academic purpose. I did not hide my identity from the respondents with the view to tricking them for information.

Also, it must be stated that the research community opposes unethical behaviour such as research fraud and plagiarism. This behaviour is termed scientific misconduct which normally occurs when a researcher falsifies or distorts data or the method of data collection, or plagiarizes the work of others. In this study, the researcher followed strictly the prescribed standard of scientific behaviour to avoid fraud and plagiarism. To achieve this, the researcher collected information from the right respondents and properly analysed them before writing the research report. Also, ideas, works and writings and references in this study were duly acknowledged in the in-text referencing and reference list.

To gather data from the sampled individuals, I first submitted a copy of the study proposal and the questionnaires to the Institutional Review Board of the University. This was done to ensure that the research participants, the university community, and the country at large are protected. Based on the recommendations of the Board, the researcher ensured that all ethical requirements such as

academic honesty, plagiarism, acknowledgement of copyrighted materials used, and institutional ethical clearance were addressed. Furthermore, permissions were sought from the management of CoDE, UCC and the regional coordinators of the college.

Approval was sought from the registrar of the college through the introductory letter. The consent of the respondents was sought using a questionnaire. Respondents were informed about the purpose of the research and what objective it sought to achieve. The questions were read to them and clarifications were made where needed. The privacy and consent of respondents were also negotiated and respected in the study. All these were done to ensure and secure the consent of the respondents.

After I was sure that the respondents understood the content very well, the questionnaire copies were administered with some assistance from course tutors, centre and Regional Coordinators who were conversant and familiar with administering of questionnaire. The respondents were thoroughly informed before commencing the research, and they were properly treated throughout the research. Respondents were encouraged to feel free and air their views as objectively as possible and that they had the liberty to choose whether to participate or not. They also had the option to withdraw their consent at any time and without any form of adverse consequence. They were assured that the information they provided would be used solely for research purpose and nothing else.

Data Collection Procedure

A period of two months was used to collect the data. The data collection process started on Thursday, February 1, 2018 and ended on Friday, March 30, 2018. Prior to the administration of the questionnaire, an informal familiarisation visits were made to the various study centres within the selected three regions for the confirmation of the number of respondents. Course tutors, centre and regional coordinators helped in the administering of the questionnaires. After completion of the questionnaires by trainee-teachers in each study centre, they were asked to hand over the completed questionnaire to their respective assigned assessors for On-Centre Teaching Practice. The course tutors' questionnaire had the trainee-teacher effectiveness items which they were to use in assessing each of the trainee-teachers assigned to them during the On-Centre Teaching Practice. This process created room for most of the course tutors to answer more than one course tutor questionnaire since more than one of the trainee-teachers assigned to them were selected for the study.

As indicated earlier, the questionnaires were administered personally with the support of course tutors, centre and Regional Coordinators. These people served as field assistants. In most of the cases, these people assisted in administering and collecting the questionnaire. They all had adequate experience regarding data collection process; therefore, it was appropriate for the study to use them as field assistants. During the data collection process, relevant data and information were gathered from the field. The field assistants who volunteered to help were given brief training and orientation regarding the study, which made it

easier for them to administer the questionnaire. The training programme included explaining the objectives of the study to the field assistants, how to ensure independent response of each participant of the study to the items in the questionnaires and how to manage and package the data collected.

The data collection procedures were carried out in four stages. The first stage was the collection of list of second year education students in the selected regions from the students' records unit of the college. The second stage was the distribution of the questionnaire to trainee-teachers while the third stage focused on retrieving of the questionnaire administered to the teacher-trainees. The third stage focused on coding the retrieved trainee-teachers' questionnaire and stapling course tutors' questionnaire to each of them. Also, the fastened instrument (answered trainee-teacher questionnaire and unanswered course tutor questionnaire) were giving to the trainee-teachers' assigned assessors for On-Centre Teaching Practice. The fourth stage focused on retrieving the completed combined instrument from the selected and assigned course tutors.

Using probability procedure, the researcher and the field assistants were given opportunity to be in the lecture theatres of the second year education students in the various study centres to administer the questionnaire. The questionnaire was given out to the selected students in the sampling frame created for the various strata. The questionnaire was administered during their break-time and after the close of lessons. This was done in order not to disturb respondents' study time. Respondents were asked to complete the questionnaire during their free time or immediately after study hours.

Specifically, the respondents were identified through the sampling frame constructed using their index numbers. The questionnaire was administered to the respondents randomly after selecting them using the computer generated random number table. Contacts (phone numbers) of respondents who were not able to answer the questionnaire on the same day were taken and asked to submit the answered questionnaire on some other day. The administering process continued until all the selected respondents were captured for the study.

In the case of the course tutors, the combined instruments were given to them individually outside the lecture rooms. Only assessors (course tutors) whose students were selected were considered. They answered their questionnaire during the On-Centre Teaching Practice, since they needed to see the trainee-teacher teaching in order to evaluate their effectiveness.

The data collection processes were done from one region to another and from one study centre to another. The completed combined questionnaires were collected back within a two-month period. At the end of data collection, the researcher was able to collect 374 combined, completed and accurate questionnaires. These combined questionnaires were obtained from 374 trainee-teachers and 247 course tutors. This resulted in 94.2 percent and 75.1 percent response rate with regard to the trainee-teachers and course tutors respectively. These response rates were appropriate because, according to Best and Kahn (2012), a response rate of 75.0 percent and more is appropriate to use for a descriptive survey study.

Data Processing and Analysis

The study adopted a descriptive survey design in which only quantitative data analysis was applied. The quantitative data were sorted and coded based on the procedures within the variable view of the statistical analysis software tool known as the PASW Version 21.0. The Test Analysis for Surveys (TAFS) was used for analysing the data. It is one of the most sophisticated statistical software packages popular with social scientists and other professionals when analysing quantitative data (Pallant, 2014). This software was used because it is user friendly; it can easily be used to analyse multi-response questions, cross section and time series analysis, and cross tabulation; and it can also be used together with Microsoft Excel and Word (MEW). Before the coding process, the completed questionnaires were skimmed and scanned through to ensure that they were devoid of any irrelevant responses before feeding the computer with the data.

Furthermore, after the coding, the data were inputted into the data view of the software to complete the keying-in process. Note: the statements/items that were negatively formulated were coded in the reverse form to ensure that there is consistency in the interpretation of the data. The raw data that were collected through the questionnaire were converted into the actual variables of interest through the pooling system. The data were then analysed and transformed into tables and extracted for presentation and discussion. Specifically, the data were analysed using both descriptive and inferential statistical tools. With the exception

of data on the background characteristics of respondents, responses to all the closed-ended items were measured numerically using unilinear scale.

In using inferential statistics to analyse the data, the study first of all performed normality test on the distribution using descriptive statistics in order to find out whether the distribution was normal or not. According to Ary et al. (2010), in analysing quantitative data, mean and standard deviation coefficients are used when the distribution is normal, while median and skewness coefficients are used when the distribution is skewed. Ary et al. (2010) added that in a normal distribution, the mean and the median are approximately the same, and also the skewness values of the data must also be within a threshold of -0.5 to 0.5. The normality test performed during the preliminary analysis showed that the distribution was normal. The closed-ended questionnaire items were analysed, taking cognisance of the fact that they were the basis for which conclusions and recommendations were drawn.

The results were presented based on the research questions and hypotheses of the study. The background characteristics of the respondents were analysed using frequency and percentage distributions. Data collected to answer first seven research questions were analysed using Pearson product moment correlation. The Pearson product moment correlation coefficient was used to analyse the data in order to determine if a significant relationship existed between pairs of the study variables. The rationale for using this statistical tool was that the variables were all measured numerically using close-ended items. Responses to the items were measured using unilinear scale. Most researchers (Ary et al., 2010; Pallant, 2014)

are of the view that to analyse the relationship between two variables that are measured numerically using unilinear scales, it is appropriate to use the Pearson product moment correlation coefficient.

Data collected to answer the eighth research question of the study were analysed using linear multiple regression analysis. This inferential statistical tool was used to determine if the explanatory variables (components of instructional quality) explain a substantial proportion of the variance in trainee-teacher effectiveness. According to Darren and Mallery (2014), to find out the contributions or influence of independent variables on a dependent variable, it is appropriate to use the linear multiple regression analysis. This statistical tool was appropriate for the study since the entered variables were measured numerically using unilinear scale. The effect size as indicated by the R^2 was interpreted for any statistically significant explanatory variables. The level of significance for all statistical tests was 0.05.

Data for testing the eight hypotheses were analysed using the independent samples t-test. The independent samples t-test is use to find out the difference between two independent groups where the distribution is normal and the variables are measured numerically such as instructional quality and trainee-teacher effectiveness in the case of this study. It is also used to find out the influence of a categorical variable such as gender on a numerical variable. According to Pallant (2014), it is appropriate to use the independent samples t-test when one wants to assess the impact of a categorical variable such as gender on a numerical variable such as instructional quality and trainee-teacher effectiveness.

This statistical tool was used again because it created room for the researcher to calculate the margin of the differences between the two independent groups, if any, using the Eta Square statistic.

Summary of Chapter Three

This chapter presents the methodology used in conducting the study in detail. It examines the study institution and area, research approach and design, population, sample and sampling procedure, sources of data collection, and instrumentation. It was established that the study adopted a descriptive survey design where only quantitative data were collected. The chapter further presented the validity and reliability of the instruments, ethical issues considered in the study, and data collection procedures. The statistical analyses used to test the propositions of the study were also elaborated. This chapter also discussed the nature of the data, how the data were processed, and methods and programmes used to analyse the data.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents the analyses of the data collected from the self-administered questionnaires. The discussion includes the interpretation of the data with reference to previous findings, theory and specific responses given by the respondents in accordance with the research objectives. The general purpose of the study was to examine the predictability of instructional quality on teacher effectiveness during trainee-teacher preparation in distance education, focusing on CODE, UCC. The first part of the chapter deals with the background characteristics of respondents which serve as a preliminary analysis to the study. The second part is devoted to the research questions and hypotheses of the study. Both descriptive and inferential statistics were employed in the data analysis. At the end of data collection, I retrieved 374 and 247 completed questionnaires from the trainee-teachers and course tutors respectively.

Analyses of Respondents' Background Characteristics

This part of the chapter deals with the analyses regarding the background characteristics of the respondents which are based on their gender, marital status, and age. With regard to the course tutors, further data were elicited on their highest level of education, and teaching experience at the tertiary level. The results are presented in Tables 5, 6, 7, 8 and 9. The first to consider is distribution of respondents by gender. The results are presented in Table 5.

Table 5

Distribution of Respondents by Gender

Gender of Respondents	Category of Respondent					
	Trainee-teachers		Course Tutor		Total	
	No.	%	No.	%	No.	%
Male	217	58.0	178	72.1	395	63.6
Female	157	42.0	69	27.9	226	36.4
Total	374	100	247	100	621	100
% of Respondents	60.2%		39.8%		100%	

Source: Field work (2018)

Results in Table 5 show that majority (60.2 percent) of the respondents were trainee-teachers while 39.8 percent were course tutors. Furthermore, the results show that majority (58.0%) of the trainee-teachers that participated in OCTP were males. Similarly, the results show that majority (72.1%) of the course tutors were males. In all, the results show that majority (63.6%) of the respondents were males.

Discussion of Results on Distribution of Respondents by Gender

Based on the findings in Table 5, one may argue that in terms of percentage, the total number of male trainee-teachers on OCTP and course tutors of CoDE, UCC outnumbered their female counterparts. This gives a cursory indication that the Education Programme by CoDE, UCC is more attracted by

males as compared to females. Likewise, there are more males teaching at the tertiary level than females.

The findings are in line with that of CoDE, UCC (2017a) that the number of male students enrolled on its Education Programme is more than that of the females. Furthermore, the finding is in line with the perceived social expectation in traditional Ghanaian society which is largely patriarchal in nature where males are more prone to work in the formal sector than females who are more in the informal sector of the Ghanaian economy (Dankyi, 2013). That is, in such societies, males are known to participate more in education than their female counterparts. However, in relation to trainee-teachers, the percentage difference is not that wide and one may, therefore, argue that the finding is good indicator in our modern society since both men and women have equal chance of being admitted into the programme and also into the teaching profession, either private or public.

Results on Marital Status of Respondents

The study further elicited data on respondents' marital status and cross tabulated it with their category in order to understand the dynamics of the two. Table 6 presents the results. Table 6 shows that majority (74.3%) of the trainee-teachers were single while 25.2 percent were married. This means that people are likely to be single before educating themselves at the tertiary level. On the other hand, it may mean that unmarried people prefer to pursue tertiary education than married people. However, 79.7 percent of the course tutors indicated that they

were married while 14.2 percent indicated that they were single. This shows that most course tutors were married.

Table 6

Distribution of Respondents by Marital Status

Marital Status of Respondents	Category of Respondent					
	Trainee-teachers		Course Tutor		Total	
	No.	%	No.	%	No.	%
Single	278	74.3	35	14.2	313	50.4
Married	94	25.2	197	79.7	291	46.9
Separate	0	0.0	2	0.8	2	0.3
Divorced	2	0.5	13	5.3	15	2.4
Total	374	100	247	100	621	100

Source: Field work (2018)

Discussion of Results on Marital Status of Respondents

The results that emerged from Table 6 with regard to the course tutors support the general perception in Ghanaian societies that people who are working, especially in the formal sector, prefer to be married since married people are more respected in the society (Dankyi, 2016). This explains why 46.9 percent of the total respondents are married. This can also be ascribed to the societal value that is peculiar to Ghanaian culture that once an individual has reached the stage of independence and is economically stable; such an individual should get married

(Dankyi, 2015). According to Bird (2017), marriage has been found to have positive effect on teachers' and students' achievement.

Results on Age of Respondents

The next background characteristic variable considered was age group of respondents. Table 7 contains results on distribution of respondents' age. As indicated in the table, majority (78.9%) of the trainee-teachers were within the age group of 21 – 30 years. Only, 8.3 percent of the trainee-teachers indicated that they were less than 21 years. In the case of the course tutors, most (42.5%) of them indicated that they were 41 years and above. Also, 23.1 percent and 32.0 percent of the course tutors indicated that they were within the age range of 21 – 30 years, and 31 – 40 years respectively. As expected, the results show that the course tutors were relatively older than the trainee-teachers.

Table 7

Distribution of Respondents by Age

Age Group of Respondents	Category of Respondent					
	Trainee-teachers		Course Tutor		Total	
	No.	%	No.	%	No.	%
Less than 21 years	31	8.3	6	2.4	37	5.9
21 – 30 years	295	78.9	57	23.1	352	56.7
31 – 40 years	26	6.9	79	32.0	105	16.9
41 years and above	22	5.9	105	42.5	127	20.5
Total	374	100	247	100	621	100

Source: Field work (2018)

Discussion of Results on Age of Respondents

The combined percentages as indicated in Table 7 shows that majority (79.5%) of the respondents were less than 41 years. This may mean that the professional strength of the teaching profession in Ghana is very bright since most of the trainee-teachers and course tutors of education programmes were within the youthful age group (18 – 45 years) in Ghana and have longer time to spend in their respective profession before going on compulsory retirement.

Results on Highest Educational Qualification of Respondents

The study further elicited data on the highest educational qualification of course tutors. The results are presented in Table 8. As contained in the table, majority of the male (57.3%) and female (56.5%) course tutors indicated that their highest educational qualification was master's degree. Besides, 42.1 percent of the course tutors indicated that their highest educational qualification was bachelor's degree. However, 2(1.1%) of the course tutors indicated that they have doctoral degree. All the two were male course tutors.

Table 8

Distribution of Course Tutors by Highest Educational Qualification and Gender

Educational Qualification of Respondents	Gender of Course Tutors					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Bachelor's degree (Eg. Bed, BSc, BA, BBA etc.)	74	41.6	30	43.5	104	42.1
Master's degree (Eg. MPhil, MBA, MSc, MCom, etc.)	102	57.3	39	56.5	141	57.1
Doctoral degree (Eg. PhD, DSc, DEd, DBA etc.)	2	1.1	0	0.0	2	0.8
Total	178	100	69	100	247	100
% of Course Tutors	72.1%		27.9%		100%	

Source: Field work (2018)

Discussion of Results on Highest Educational Qualification of Respondents

The results show that male course tutors have relatively higher educational qualification than their female counterparts. The results may imply that course tutors of the college may not find it difficult to read and understand the contents of the questionnaires since they all have degree qualifications. Therefore, it was appropriate to use the questionnaire in collecting data from the course tutors with regard to their assessment of trainee-teachers' effectiveness.

Most researchers (Fong-Yee & Normore, 2017; Grasha & Yangarber-Hicks, 2013; Purdy, 2017) are of the view that the longer an employee establishes relation with an institution, all things being equal, the better he or she expresses his or her view on the institution's activities and services.

Results on Years of Teaching Experience by Respondents

Data was also collected on course tutors' years of teaching experience at the tertiary level. The results are presented in Table 9. As depicted in Table 9, the combined percentages show that majority (69.6%) of the male course tutors have been teaching at the tertiary level for more than 10 years. However, in the case of female course tutors, only 29.0 percent of them indicated that they have been teaching at the tertiary level for more than 10 years.

Distribution of Course Tutors by Years of Teaching Experience and Gender

Years of Teaching Experience	Gender of Course Tutors					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Less than 6 years	9	5.1	25	36.2	34	13.8
6 – 10 years	45	25.3	24	34.8	69	27.9
11 – 15 years	86	48.3	19	27.5	105	42.5
16 – 20 years	23	12.9	1	1.5	24	9.7
21 years and above	15	8.4	0	0.0	15	6.1
Total	178	100	69	100	247	100
% of Course Tutors	72.1%		27.9%		100%	

Source: Field work (2018)

Discussion of Results on Years of Teaching Experience by Respondents

Based on the results in Table 9, one can say that male course tutors have relatively longer experience than their female counterparts. In all, 86.2 percent of the respondents indicated that they have been teaching at the tertiary level for more than five years. The findings show that course tutors have the requisite experience to provide relevant information for the study with regard to their assessment of trainee-teacher effectiveness.

Analysis Pertaining to the Research Questions and Hypotheses

This section presents the results pertaining to the research questions and hypotheses of the study. The data were analysed quantitatively using both descriptive and inferential statistical tools. These statistical tools were used because the responses to the items with regard to the variables were measured using unilinear scale and also the preliminary analysis at the pre-test stage shows that the distribution was normal. That is, the various statistical tools were used after the researcher performed the test of normality to find out whether the distribution was normal or not. Mean and standard deviation coefficients are used when the distribution is normal while median and skewness coefficients are used when the distribution is skewed (Pallant, 2014).

Furthermore, the skewness values of the distribution were closer to each other and were within an acceptable threshold of a normal distribution (-0.32 to 0.37). The standard deviations were also moderate and closer to each other, indicating the non-dispersion in a widely-spread distribution. The moderateness of the standard deviations of the distribution shows that the views of the respondents were coming from a moderate homogeneous group that is, a group with similar characteristics or similar understanding with regard to the issues under consideration. This means that respondents' view on the issues is an approximation to a normal distribution.

Responses to the closed-ended items used in eliciting data on the issues regarding the concepts were measured on a four-point unilinear scale ranging from one to four where the higher the number, the more the agreement to the

statements, and the lower the number the more the disagreement to the statements. Based on the four-point numerical scale used, the approximation approach recommended by Pallant (2014) when dealing with discrete or unilinear scale items was used to categorise the response scores. Specifically, the study adopted the recommended mathematical approximation technique to interpret the mean scores. Thus, Strongly Agree (3.5 – 4.0), Agree (2.5 –3.4), Disagree (1.5 –2.4), and Strongly Disagree (1.0 –1.4). The results showing the views of the respondents regarding the study variables are presented as follows:

Research Question One: ***Is there any relationship between quality evaluation of instruction by facilitators and trainee-teacher effectiveness?***

The first research question of the study focused on finding out whether there was a relationship between quality evaluation of instruction by facilitators and trainee-teachers' effectiveness. Quality evaluation dimension of instructional quality was made up of six close-ended items while that of trainee-teachers was made up of 23 items. Specifically, trainee-teacher effectiveness variable was made up of three major components: objectives and core points in lesson plan, teaching methodology and delivery, and classroom organisation and management. Five, twelve, and five questionnaire items respectively were used to collect data on these components. These items, in relation to each of the variables, were transformed by pooling them together to form the two variables. The Pearson product moment correlation was, therefore, used to analyse the data in order to find out the relationship between the variables. This statistical tool was used

because responses to the items were measured numerically using an interval scale, and also the distribution was normal. The results are presented in Table 10.

Results on the Relationship between Quality Evaluation of Instruction by Facilitators and Trainee-teacher Effectiveness

As shown in Table 10, quality evaluation (Mean = 3.410, Std. Dev. = 0.886) and trainee-teacher effectiveness (Mean = 3.678, Std. Dev. = 0.671) were positively perceived by the respondents. Results in Table 10 further show that there was a statistically significant positive relationship between quality evaluation and trainee-teachers' effectiveness ($r = 0.609$, $p < 0.01$).

Table 10

Relationship between Quality Evaluation and Trainee-teacher effectiveness

			Trainee-teacher effectiveness	
Variables	Mean	Std. Dev.	Correlation Coefficient (r)	Sig.
Quality Evaluation	3.410	0.886	0.609**	0.000
Trainee-teacher effectiveness	3.678	0.671	1	

Source: Field work (2018) (N = 374)

**. Correlation is significant at the 0.05 level (2-tailed).

Discussion of Results on the Relationship between Quality Evaluation of Instruction by Facilitators and Trainee-teacher Effectiveness

The results in Table 10 mean that course evaluation and assessment procedures of the college are of good quality, and that there is periodic evaluation of trainee-teachers' professional skills by facilitators and the university. The finding on trainee-teachers effectiveness may also mean that trainee-teachers of the college are able to demonstrate high level of professional competency with regard to making sure that objectives and core points in lesson plan, teaching methodology and delivery, and classroom organization and management are in line with the UCC standard. The finding that there is high level of quality evaluation and trainee-teacher effectiveness, however, is incongruent with the findings of Amoono (2016) who indicated that evaluation of teachers is not frequently done as expected and some trainees do not get the required number of supervision and evaluation specified by UCC. Amoono (2016) added that some supervisors or mentors were not well-equipped for supervision and some of them did not have enough logistics to effectively do their work.

The relationship between quality evaluation and trainee-teachers' effectiveness can be described as strong relationship ($r = 0.609$, $p < 0.01$) (Ary et al., 2010). This means that the more trainees' course tutors of the college adhere to the activities and policies concerned with periodic students' learning assessment and feedback during OCTP, the greater the ability of the trainee-teachers to teach well or achieve a desired result without wasting energy or effort. The findings may also mean that if course tutors are able to assess trainee-

teachers' curriculum design, content and organisation, teaching, learning and assessment, student progression and achievement, and student support and guidance effectively, it will help in boosting the trainees' positively. The findings are in line with that of Vermula (2013), who found that enhancing the evaluation of teachers positively help in boosting teachers' effectiveness.

Research Question Two: ***Is there any relationship between quality learner support services in the delivery of instruction and trainee-teacher effectiveness?***

The second research question of the study focused on finding out whether there is a relationship between quality learner support services in the delivery of instruction and trainee-teacher effectiveness. Learner support service quality dimension of instructional quality was made up of 10 close-ended items. These items were pooled together to form the variable in order to correlate it with trainee-teachers' effectiveness variable which has been explained earlier. The Pearson product moment correlation was used to analyse the data in order to answer the research question since the distribution was normal and the variables were measured numerically using unilinear scale. The results are presented in Table 11.

Results on the Relationship between Quality Learner Support Services and Trainee-teacher Effectiveness

Table 11

Relationship between Quality Learner Support Services and Trainee-teacher effectiveness

			Trainee-teacher effectiveness	
Variables	Mean	Std. Dev.	Correlation Coefficient (r)	Sig.
Learner support service quality	3.120	0.731	0.470**	0.000
Trainee-teacher effectiveness	3.678	0.671	1	

Source: Field work (2018) (N = 374)

**. Correlation is significant at the 0.05 level (2-tailed).

As contained in Table 11, there was a statistically significant positive relationship between learner support service quality and trainee-teacher effectiveness ($r = 0.470$, $p < 0.01$). The relationship can be described as moderate per the guidelines of Ary et al. (2010). The finding shows that learner support service quality of CoDE, UCC relate significantly with trainee-teachers' effectiveness. This means that the more CoDE improves on the quality of support services provided to learners at the college, the higher trainee-teachers' level of teaching effectiveness will be enhanced in order to achieve or meet pre-specified standards and goals set by the university.

Discussion of Results on the Relationship between Quality Learner Support Services and Trainee-teacher Effectiveness

The finding in Table 11 is consistent with that of Walters (2002) who found that learner support services such as library facilities contributed positively to trainee-teachers' effectiveness. However, most of the libraries in the colleges are stocked with out-dated books that are not relevant to most of the academic programmes offered by the trainees. According to Walters (2002), this affected adversely trainees' acquisition of subject matter and action system knowledge necessary for their effectiveness. Walters (2002) added that trainees toilet and washroom sanitation were very poor, affecting teaching and learning because of the unpleasant stench from the toilets and washrooms. In addition, science laboratories were available; however, the colleges do not have competent laboratory assistants. Similarly, most of the laboratories were without enough computers and low seating capacities. Due to overcrowding at certain classes, some trainee-teachers did not receive the required number of on-centre teaching practice and supervisions from their tutors. This affected their effectiveness.

Furthermore, the finding is consistent with that of Dankyi (2013) whose study revealed that quality learner support services are vital tool in ensuring that the product of the university are transformed to effective and efficient teachers. In relation to the effects of UCC DL on basic school teachers' performance, it was revealed that at the study centres, where distance learners study, there is lack of support services in the form of guidance and counselling which to a large extent affect trainees'. Dankyi's (2013), study further revealed that over 71.4 percent of

respondents admitted that support services in the form of pre-counselling on choice of programme, study procedures, provision and use of the library, are key to their success and demonstration of in the course of pursuing the programmes and beyond.

In addition, Garrison (2014) observed that learner support services may include library facilities, various media and software programmes, community leaders, various socio-economic variables such as student's financial self-sufficiency and capacity to cope with their roles and responsibilities in the family and community. In addition, Garrison (2014) indicated that the most important form of support in DL educational transaction is the quality of the instructor, who through his/her guidance and direction can assist the students to achieve their goals and develop control of the educational process. Dillon and Blanchard (2015), also posit that with appropriate learner support and learner needs, learner support and content, learner support related to the institutional context, and learner support and technology, trainees will be in a better position to demonstrate high level of effectiveness in their teaching and professionalism. The finding again supports that of Heck (2017) which revealed that quality learner support services have a significant positive relationship with students' achievement and growth rates.

Research Question Three: ***Do there exist any relationship between pedagogical quality of course facilitators and trainee-teacher Effectiveness?***

The third research question of the study focused on the relationship between pedagogical quality dimension of instructional quality and trainee-teachers' effectiveness. Each of the variables has been defined, explained and measured in the third chapter of this report. As indicated earlier, the variables were measured using unilinear scale. These items were pooled or combined together using means or average response scores to form the main variables. The Pearson product moment correlation was used to examine the relationship between the variables. The results are presented in Table 12.

Results on the Relationship between Pedagogical Quality and Trainee-teacher effectiveness

Table 12

Relationship between Pedagogical Quality and Trainee-teacher effectiveness

			Trainee-teacher effectiveness	
Variables	Mean	Std. Dev.	Correlation Coefficient (r)	Sig.
Pedagogical quality	3.555	0.783	0.702**	0.000
Trainee-teacher effectiveness	3.678	0.671	1	

Source: Field work (2018) (N = 374)

**. Correlation is significant at the 0.05 level (2-tailed).

The results in Table 12 illustrate that respondents perceived pedagogical quality (Mean = 3.555, Std. Dev. = 0.783) positively. The results further show that pedagogical quality had a positive and significant relationship with trainee-teachers' effectiveness ($r = 0.702$, $p < 0.01$).

Discussion of Results on the Relationship between Pedagogical Quality and Trainee-teacher Effectiveness

The result in Table 12 shows that trainee-teachers exhibit high level of instructional competence and quality of delivery. The finding is consistent with that of Mbwesa (2014) who found out that 93.5 percent of the students perceived the quality of pedagogy in the DL course as being of a fairly good quality.

Furthermore, as contained in Table 12, pedagogical quality had a positive and significant relationship with trainee-teachers' effectiveness ($r = 0.702$, $p < 0.01$). The relationship can be described as strong. This shows that the higher the quality of the learning activities and instructional methods that promote learner interactions in various forms of distance learning as well as delivery of suitable and quality content to learners, the higher the effectiveness and competence level of trainee-teachers.

The finding that there is strong and positive relationship between pedagogical quality and trainee-teacher effectiveness is consistent with the assertion of Feist and Rosemberg (2012), who posit that instructor competency and quality of delivery is wholly predicated on possession of action system and subject matter knowledge. However, the finding contradicts that of Vermula

(2013) who found very weak relationship between pedagogical quality and learner . Vermula (2013) added that the weak relationship was not attributable to low quality instruction only but also to uncooperative attitude of the DE learners who normally do not learn their study materials very well before attending face-to-face. According to Mbwesa (2014), thorough possession of relevant course content knowledge and methods of delivery by course facilitators has a significant and positive relationship with trainees' effectiveness.

Research Question Four: ***Do there exist any relationship between infrastructure quality and trainee-teacher effectiveness?***

The rationale of the fourth research question of the study was to examine the relationship between quality infrastructure and trainee-teachers' effectiveness. Again, the Pearson product moment correlation was used to analyse the data in order to answer the research question. The results are presented in Table 13.

Results on the Relationship between Quality Infrastructure and Trainee-teacher effectiveness

Table 13

Relationship between Quality Infrastructure and Trainee-teacher effectiveness

			Trainee-teacher effectiveness	
Variables	Mean	Std. Dev.	Correlation Coefficient (r)	Sig.
Quality infrastructure	1.908	0.795	0.633**	0.000
Trainee-teacher effectiveness	3.678	0.671	1	

Source: Field work (2018) (N = 374)

**. Correlation is significant at the 0.05 level (2-tailed).

The results in Table 13 show that respondents have negative perception toward the infrastructure quality (Mean = 1.908, Std. Dev. = 0.795) of the college. The results also show that there is a strong, positive and statistically significant relationship between quality infrastructure and trainee-teachers' effectiveness ($r = 0.633$, $p < 0.01$)

Discussion of Results on the Relationship between Quality Infrastructure and Trainee-teacher effectiveness

The result in Table 13 shows that the infrastructure capacity of the college, with regard to the various study centres, is not in good shape as per the expectations of the respondents. The results further show that there is a strong, positive and statistically significant relationship between quality infrastructure

and trainee-teachers' effectiveness ($r = 0.633$, $p < 0.01$). This shows that the higher the level of infrastructure quality of the college the higher trainee-teachers' effectiveness.

The finding is in line with that of Walters (2002), who found that quality infrastructure of the college has a significant positive relationship with trainee-teachers' effectiveness. The finding again is congruent with that of Dankyi (2013), who revealed that quality infrastructure is a vital tool in ensuring that the product of the university are transformed to effective and efficient teachers. Furthermore, Heck's (2017), study also revealed that quality infrastructure has a significant positive relationship with students' achievement and growth rates.

Research Question Five: ***Do there exist any relationship between tutor support services and trainee-teacher Effectiveness?***

The fifth specific research question of the study focused on finding out whether there was a relationship between tutor support service quality and trainee-teachers' effectiveness. Multiple close-ended items were used to collect data on these two variables. These items were pooled together to form each of the variable. The Pearson product moment correlation was used to analyse the data in order to answer the research question. The results are presented in Table 14.

Results on the Relationship between Tutor Support Service Quality and Trainee-teacher effectiveness

Table 14

Relationship between Tutor Support Service Quality and Trainee-teacher effectiveness

			Trainee-teacher effectiveness	
Variables	Mean	Std. Dev.	Correlation Coefficient (r)	Sig.
Tutor support service quality	3.043	0.904	0.357**	0.000
Trainee-teacher effectiveness	3.678	0.671	1	

Source: Field work (2018) (N = 374)

**. Correlation is significant at the 0.05 level (2-tailed).

As shown in Table 14, tutor support service quality (Mean = 3.043, Std. Dev. = 0.904) was positively perceived by the respondents. The findings in Table 14 further show that there was a statistically significant positive relationship between tutor support service quality and trainee-teachers' effectiveness ($r = 0.357$, $p < 0.01$).

Discussion of Results on the Relationship between Tutor Support Service Quality and Trainee-teacher Effectiveness

The result in Table 14 means that the various support services the college provides to course tutors are relatively better, according to the respondents. The

results in Table 14 further show that there was a statistically significant positive relationship between tutor support service quality and trainee-teachers' effectiveness ($r = 0.357$, $p < 0.01$). The relation between tutor support service quality and trainee-teacher effectiveness can be described as moderate (Ary et al., 2010).

This means that the more the college provides appropriate and meaningful support services to its course tutors, the higher the level of trainee-teachers' effectiveness. This shows that providing support services to course tutors is one of the important indicators of predicting trainee-teacher effectiveness positively. The finding is in line with the submission of Jung (2012), who found that South Korea's e-learners perceived staff support to be the most important indicator of e-learning quality, followed by institutional quality assurance mechanisms and learning tasks. Jung (2012) averred that provision of appropriate support services to tutors have a significant relationship with trainees' effectiveness.

Research Question Six: ***Is there any relationship between quality of faculty and trainee-teacher Effectiveness?***

The sixth research question of the study focused on finding out whether there is a statistically significant relationship between quality of faculty and trainee-teachers' effectiveness. Quality of faculty dimension of instructional quality was made up of three close-ended items. These items were pooled together to form the variable in order to correlate it with trainee-teacher effectiveness variable. The Pearson product moment correlation was used to

analyse the data in order to answer the research question since the distribution was normal and the variables were measured numerically using unilinear scale. The results are presented in Table 15.

Results on the Relationship between Quality of Faculty and Trainee-teacher Effectiveness

Table 15

Relationship between Quality of Faculty and Trainee-teacher Effectiveness

			Trainee-teacher effectiveness	
Variables	Mean	Std. Dev.	Correlation Coefficient (r)	Sig.
Quality of faculty	3.369	0.881	0.522**	0.000
Trainee-teacher effectiveness	3.678	0.671	1	

Source: Field work (2018) (N = 374)

**. Correlation is significant at the 0.05 level (2-tailed).

As contained in Table 15, respondents indicated that the quality of the faculty of the college is relatively good (Mean = 3.369, Std. Dev. = 0.881). the findings also show that there was a statistically significant positive relationship between quality of faculty dimension and trainee-teachers' effectiveness ($r = 0.522$, $p < 0.01$).

Discussion of Results on the Relationship between Quality of Faculty and Trainee-teacher Effectiveness

The result in Table 15 shows that trainee-teachers are satisfied with the professional competence demonstrated by the various course tutors being engaged by the college. The views of the respondents are congruent with the findings of Koomson (2007). According to Koomson (2007), importance of the role of a competent instructor was observed to play a significant part in the success of distance education systems worldwide. This may mean that the course tutors of the college can either make or break the system, so important consideration must be given to the role the instructors play in such a system.

The results in Table 15 further show that there was a statistically significant positive relationship between quality of faculty dimension and trainee-teachers' effectiveness ($r = 0.522$, $p < 0.01$). The relationship can be described as moderate per the guidelines of Ary et al. (2010). The finding shows that engaging high calibre of people as course tutors help in boosting trainee-teachers' effectiveness. This means that the college engaging highly qualified people as course tutors help enhance trainee-teacher effectiveness level of teaching in order to achieve or meet pre-specified standards and goals set by the university.

The finding that course tutors of the college demonstrate high level of competency in handling trainee-teachers is incongruent with that of Kwao (2002), whose study revealed that majority of the teachers demonstrated low level of competence. However, teacher competence was central to the students' success. Again, Kwao (2002), found that most instructors demonstrated low level of

effectiveness in lesson plan preparation and lesson evaluation. This finding parallels that of CoDE (2016), monitoring and survey report which found 30 percent of trainee-teachers to have challenges with professional preparation of lesson plans. There was serious absence of instructional materials which affected quality instruction and students' performance.

Again, most teachers failed to use teacher-learner materials. However, the finding that quality of faculty has a positive relationship with trainee-teacher effectiveness is consistent with that of Fong-Yee and Normore (2017), who examined the impact of quality teachers on student achievement. The work of Fong-Yee and Normore (2017), shows that quality teachers, that is teachers with high level of educational and professional qualifications, have more positive impact on students' academic achievement than non-quality teachers.

In addition the finding that emerged from Table 15 may mean that when the quality level of the college's faculty is low it will lead to low level of trainee-teacher effectiveness. This finding supports the argument of Bandura's self-efficacy theory. That is, in DL, especially if instruction is not of high quality and handled by competent instructors, student would not grasp requisite teaching skills they require. They may then wallow in doubts of their capabilities shy away from difficult tasks which they view as personal threats. This would have debilitating repercussions on their effectiveness as teachers to be. This according to Vroom (as cited in Geelan, 2013), would in turn affect trainee satisfaction which is an effect of one's ability to demonstrate competence and effectiveness in job performance. In line with Vroom's assertion, Bandura (as cited in Geelan,

2013), outlined four things that instructors need to do in order to build students and learners' or efficacy: mastery of experiences, vicarious experiences provided by social models, strengthen learners' beliefs that they have what it takes to succeed, and creation of positive moods of learners.

Research Question Seven: ***Is there any relationship between quality interaction and trainee-teacher effectiveness?***

The last specific research question focused on the relationship between quality interaction dimension of instructional quality and trainee-teachers' effectiveness. Each of the variables has been defined, explained and measured in the third chapter of this report. As indicated earlier, the items were measured using unilinear scale. These items were pooled or combined together using means or average response scores to form the main variables. The Pearson product moment correlation was used to examine the relationship between the variables. The results are presented in Table 16.

Results on the Relationship between Quality Interaction and Trainee-teacher Effectiveness

Table 16

Relationship between Quality Interaction and Trainee-teacher Effectiveness

			Trainee-teacher effectiveness	
Variables	Mean	Std. Dev.	Correlation Coefficient (r)	Sig.
Quality interaction	3.103	0.789	0.502**	0.000
Trainee-teacher effectiveness	3.678	0.671	1	

Source: Field work (2018) (N = 374)

**. Correlation is significant at the 0.05 level (2-tailed).

The results in Table 16 illustrate that respondents perceived quality interaction (Mean = 3.103, Std. Dev. = 0.789) positively. The findings further show that quality interaction has a positive and significant relationship with trainee-teachers' effectiveness ($r = 0.502$, $p < 0.01$).

Discussion of Results on the Relationship between Quality Interaction and Trainee-teacher Effectiveness

The findings in Table 16 show that trainee-teachers are relatively satisfied with their interaction with the course tutors. The finding support the submission of Chen (2008), who posits that online learners always ask for more teacher-student and student-student interactions and flexible learning activities that offer guidance, while their institutions place more emphasis on provision of video

lectures and multimedia resources and content design that follows a certain standardised procedure.

Furthermore, as contained in Table 16, quality interaction has a positive and significant relationship with trainee-teachers' effectiveness ($r = 0.502$, $p < 0.01$). The relation can be described as moderate. This shows that the higher the quality of interaction exhibited by trainees and their lecturers, the higher the ability of trainee-teachers to deliver suitable and quality content to learners, which in the long run will help enhance their and competence level significantly.

This shows that quality interaction is an important element in DL. The finding is in line with the assumptions made by Farajollhi et al. (2010) for effective distance course facilitation regarding how course facilitators should initiate interact with learners in course of facilitation. According to Farajollhi et al. (2010), student-faculty interaction, should be collaborative, encourage active learning through giving prompt feedback to learners. Also, in the course of facilitation the following kinds of interaction should exist: student-faculty interaction and student-student interaction. They added that the facilitation should include student development and support, student communication and presentation of assignments in class and peer assessment. Farajollhi et al. (2010) further indicated that interaction should be learner-centred, assessment-centred; knowledge-centred; and community-centred.

In all, the results show that all the seven dimensions of instructional quality have statistically significant relationships with trainee-teachers' effectiveness. This shows that instructional quality is significantly related to

trainee-teacher effectiveness. This shows that emphasis on the quality level of instruction with regard to pedagogical skills, teacher qualification, infrastructure, student-teacher interaction, evaluation, student support services, and teachers' support services end up producing highly competent trainee-teachers. Societies require all students to be taught by teachers with professional qualifications who are able to demonstrate subject-matter competence for the courses they teach. In order to produce such teachers, there is the need to ensure that there is quality instruction in the various institutions that produce professional teachers (Antoniou & Kyriakides, 2013). Research has shown that the teacher is the most important school-related variable in student achievement (Wilson & Floden, 2013; Wenglinsky, 2014). Therefore, ensuring that there is high level of instructional quality among trainee-teachers is a key pillar in producing efficient teachers.

Furthermore, the findings that the seven dimensions of instructional quality are positively related to trainee-teachers' effectiveness presuppose that if trainees are able to develop high level of control in their training, they will be able to control their destiny which to a large extent will lead to their high level of effectiveness in the teaching profession. Therefore, trainee-teachers developing high level of effectiveness with regard to their abilities to accomplish an objective, the better chance they will have for high motivation. The findings to a large extent support the argument of the expectancy theory. According to this theory, when trainee-teachers do not believe that they can accomplish objectives, they will not be motivated to try at all which in the long run will thwart their teaching effectiveness in the profession (Michael & Edward, 2011).

Research Question Eight: ***To what extent do the dimensions of instructional quality predict teacher effectiveness in the preparation of teachers in distance education at CoDE , UCC?***

The rationale for the last research question of the study was to examine how instructional quality predicts trainee-teachers' effectiveness. The independent variables were the seven dimensions of instructional quality while the dependent variable was trainee-teachers' effectiveness. As indicated earlier, multiple items were used to elicit data on the independent and dependent variables. The facets or dimensions of the independent variables have also been explained earlier. To be able to achieve the objective relating to this, the study adopted the linear multiple regression analysis procedure to answer the eighth research question formulated.

The segregation of the variables is shown in the conceptual framework of the study (See Figure 2). Using the linear multiple regression analysis to answer the eighth research question, a diagnostic test was first conducted to check for multicollinearity among the independent and mediating variables. This was used to examine the possible undesirable situation where the correlations among the variables are strong. The PASW Version 21.0 was used to assess the Variance Inflation Factor (VIF) that measures multicollinearity in the regression model since multicollinearity misleadingly inflates the standard errors thereby making some variables statistically insignificant while they should be otherwise significant.

The VIF was used to measure how much the variance of the estimated coefficients increase over the case of no correlation among the independent

variables. All the VIF values for the independent variables were within the acceptable threshold. This shows that none of the values was greater than five (5), which means there was no collinearity associated with the variables. The VIF values were also inversely related to the Tolerance values (VIF = 1/Tolerance). According to Pallant (2014), large VIF values (a usual threshold is 10.0, which corresponds to a tolerance of 0.10) indicate a high degree of collinearity or multicollinearity among the independent variables.

In addition, under the collinearity diagnostics table, condition index values for all the entered variables were less than 15 indicating that there was no problem. According to Pallant (2014), a condition index value greater than 15 indicates a possible problem while an index greater than 30 suggests a serious problem with collinearity. In all, it is clear that the contribution of the independent variables on the dependent variable was largely not as a result of the strong association among the variables. The results of the analysis are presented in Tables 17.

Results on the Predictability of Instructional Quality on Trainee-teaches' effectiveness

Table 17

Regression Model on the Predictability of Instructional Quality on Trainee-teaches' Effectiveness I

Variables	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta (β)	t	Sig.	Tolerance	VIF
Quality infrastructure	0.202	0.028	0.239	7.213	0.000	.618	1.619
Quality of faculty	0.013	0.030	0.017	0.426	0.670	.451	2.218
Learner support service quality	0.134	0.032	0.146	4.241	0.000	.573	1.744
Quality interaction	0.021	0.029	0.024	0.701	0.484	.568	1.760
Quality evaluation	0.189	0.026	0.286	7.179	0.000	.427	2.344
Tutor support service quality	0.040	0.025	0.053	1.603	0.110	.614	1.628
Pedagogical quality	0.434	0.025	0.507	17.136	0.000	.776	1.288
Constant			0.311				
R			0.867				
R Square			0.752				
Adjusted R Square			0.747				

Source: Field work (2018) **p<0.01 (N = 374)

Dependent Variable: Trainee-teacher effectiveness

Table 18

Regression Model on the Predictability of Instructional Quality on Trainee-teaches' Effectiveness II

Variables	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta (β)	t	Sig.	Tolerance	VIF
Quality infrastructure	0.213	0.027	0.252	8.028	0.000	.688	1.454
Learner support service quality	0.121	0.029	0.132	4.190	0.000	.683	1.464
Quality evaluation	0.189	0.022	0.287	8.469	0.000	.589	1.698
Pedagogical quality	0.431	0.024	0.503	17.601	0.000	.832	1.202
Constant			0.3102				
R			0.866				
R Square			0.750				
Adjusted R Square			0.747				

Source: Field work (2018) **p<0.01 (N = 374)

Dependent Variable: Trainee-teacher effectiveness

The multiple regression analysis involved testing of a model in order to find out whether the seven dimensions of instructional quality have any impact on trainee-teachers' effectiveness. First, the seven dimensions of instructional quality were entered as independent variables. As depicted in Table 17, the instructional quality dimensions that predicted trainee-teachers' effectiveness significantly in order of importance were pedagogical quality [(β = 0.507 (0.025), $p < 0.01$], quality evaluation [β = 0.286 (0.026), $p < 0.01$], quality infrastructure [β = 0.239 (0.028), $p < 0.01$], and learner support service quality [β = 0.146 (0.032), $p < 0.01$]. Quality of faculty, quality interaction and tutor support service were not able to predict trainee-teachers' effectiveness significantly.

The linear regression analysis was therefore, rerun for those components of instructional quality that significantly predict trainee-teacher effectiveness as shown in Table 18. The results in order of importance were pedagogical quality [(β = 0.503 (0.024), $p < 0.01$], quality evaluation [β = 0.287 (0.022), $p < 0.01$], quality infrastructure [β = 0.252 (0.027), $p < 0.01$], and learner support service quality [β = 0.132 (0.029), $p < 0.01$]. Analysis of Variance (ANOVA) results showing the predictive capability of all the predictors taken together could be found in Table 20 in Appendix E.

Discussion of Results on the Predictability of Instructional Quality on Trainee-teaches' effectiveness

The results in Tables 17 and 18 show that pedagogical quality, quality evaluation, quality infrastructure, and learner support service quality are the components of instructional quality that have significant impact on trainee-teachers' effectiveness.

The finding is consistent with the comments of Wang and Walberg (2012), who posit that trainees with high level of instructional quality are able to demonstrate high level of effectiveness with regard to objectives and core points in lesson plan, teaching methodology and delivery, and classroom organisation and management. Teachers with high level of instructional quality are known for always coming to class (and leave) on time, with well-prepared lesson plan, instructional materials, engaged time on task, and everything is organised regardless of output or result produced in the teaching-learning process (Abdus-Salam, 2015; Wanjala & Wanjala, 2017).

The finding that quality instruction on the part of distance learners help boost their effectiveness as trainee-teachers is consistent with that of Kwao (2002), who also found that teachers who exhibit high level of instructional quality in their lesson note preparation, pedagogical skills, quality interaction, discipline, and so on are able to enhance their competence level which in the long run help boost their students' academic performance. The consistency in the findings, with regard to this study and that of Kwao (2002), whose study focused

on teachers in the conventional system, support the argument of the equivalency theory.

The equivalency theory states that for distance education to be successful it should be based on the idea of equivalency. The theory itself states that the more equivalent the learning experiences of distant learners are to those in the traditional or conventional system, the more equivalent will be the quality of products as compared to their conventional counterparts (Simonson, 1999). Therefore, education at a distance away from the traditional or convention systems of higher education should be built on the concept of equivalency of learning experiences. This approach to distance education thus advocates designing a collection of equivalent learning experiences for distant and local learners, even though they are in different worlds and contexts.

Therefore, same learning experiences should be exposed to trainee-teachers, both those in the distance mode and those in the conventional mode. Simonson, Schlosser and Hanson (2013) indicated that learning experiences are not identical, but various learning experiences can be considered equivalent if they produce the equivalent learning. The key of the theory is that learning experiences of distance learners and their conventional system counterparts should be the same.

It is, however, significant to observe that the total contribution of the independent variables to the variance in the dependent variable as shown in Table 18 is 0.750 with an adjusted R^2 of 0.747. This means that the components of instructional quality are able to predict or explain 75 percent of the variance in

trainee-teachers' effectiveness. This means, quite apart from the entered dimensions of instructional quality, other components or variables that are not yet considered in the model have a chance of contributing the remaining 25 percent to trainee-teachers' effectiveness.

The finding that instructional quality has a significant impact on trainee-teachers' effectiveness is again consistent with the submission of Koomson et al. (2017), who argued that the competence of a trainee-teacher is largely influenced by school and home environment. Therefore, well-organised classes concerned with home and school environment may provide a message about the physical fitness of learning setting in order to generate knowledge for learners where learning might be facilitated from both home and school. This may mean that quality of classroom interaction might be hampered due to insufficient teaching resources and poor physical facilities.

This shows that teacher's knowledge, roles, skills, dispositions, and behaviours, all have great influence on effective teaching (Darling-Hammond, 2014). Indeed, teachers who exhibit high level of instructional quality know how to create successful learning environment in classroom. Therefore, an effective teacher must be expert in action system as well as content based pedagogical knowledge, have mastery in the language of instruction, create productive and joyful learning environment, arouse interests among the students in their studies, generating compliant classroom environment for students' needs, bearing strong ethical minds, dedication in profession and intensive caring for students (Ertmer, 2015; Harris & Sass, 2017).

Testing of Hypotheses on the Influence of Gender on the Seven Dimensions of Instructional Quality and Trainee-teacher effectiveness

The rationale for the first to eighth hypotheses were to ascertain the gender differences among trainee-teachers with regard to their instructional quality, focusing on the dimensions of instructional quality as presented in the conceptual framework of the study, and their effectiveness. In the model, gender was treated as control, therefore, the study was to find out whether it has an impact or not. In order to examine the gender differences, the study first of all pooled all the individual items together using the average responses to form each major variable as indicated earlier. Independent samples t-tests were conducted to compare male and female trainee-teachers' views on the dimensions of perceived instructional quality and their teaching effectiveness. The results are presented in Table 18. The researchable hypotheses formulated to be tested were:

H^1_0: There is no statistically significant gender difference in trainee-teachers with regard to their view on quality infrastructure.

H^2_0: Gender has no statistically significant effect on trainee-teachers view on quality of faculty.

H^3_0: There is no statistically significant gender difference in trainee-teachers views on the quality of learner support services system.

H^4_0: Gender has no statistically significant effect on trainee-teachers views on the quality of course facilitators' interaction.

H^5_0: There is no statistically significant gender difference in trainee-teachers' views on the quality of instruction evaluation by course facilitators.

H^6_0: Gender has no statistically significant influence on trainee-teachers view on tutor support services quality.

H^7_0: There is no statistically significant gender difference in trainee-teachers with regard to their perception on pedagogical quality.

H^8_0: There is no statistically significant gender difference in trainee-teachers' teaching effectiveness.

Results on the Influence of Gender on Instructional Quality and Trainee-teacher Effectiveness

Table 19

Influence of Gender on Instructional Quality and Trainee-teacher Effectiveness

Variables	Gender	N	Mean	Std. Dev.	t-value	p-value	η^2
Quality infrastructure	Male	217	1.916	0.822	0.239	0.811	
	Female	157	1.896	0.758			
Quality of faculty	Male	217	3.496	0.872	3.317**	0.001	0.029
	Female	157	3.194	0.866			
Learner support service quality	Male	217	3.073	0.752	1.335	0.183	
	Female	157	2.971	0.699			
Quality interaction	Male	217	3.162	0.804	1.721	0.086	
	Female	157	3.020	0.764			
Quality evaluation	Male	217	3.471	0.904	1.358	0.175	
	Female	157	3.326	0.993			
Tutor support service quality	Male	217	2.984	0.918	-1.473	0.142	
	Female	157	3.124	0.879			
Pedagogical quality	Male	217	3.477	0.829	-2.269*	0.024	0.014
	Female	157	3.662	0.703			
Instructional quality	Male	217	3.237	0.689	1.552	0.122	
	Female	157	3.127	0.664			
Trainee-teacher effectiveness	Male	217	3.645	0.689	-1.120	0.263	
	Female	157	3.724	0.645			

Source: Field work (2018) **p<0.01, *p<0.05 df = 372 (N = 374)

Where η^2 = Eta Square

As contained in Table 19, even though male trainee-teachers (Mean – 1.916, Std. Dev. = 0.822) rated quality of infrastructure of the college higher than female trainee-teacher effectiveness (Mean – 1.896, Std. Dev. = 0.758), there is no statistically significant difference between male and female trainee-teachers with regard to their views on quality infrastructure of the college [t = 0.239, df = 372, p = 0.811]. The findings further show that there were no statistically significant gender differences in trainee-teachers with regard to their views on learner support service quality [t = 1.335, df = 372, p = 0.183], quality interaction [t = 1.721, df = 372, p = 0.086], quality evaluation [t = 1.358, df = 372, p = 0.175], and tutor support service quality [t = -1.473, df = 372, p = 0.142].

Discussion of Results on the Influence of Gender on Instructional Quality and Trainee-teacher Effectiveness

The results show that gender of trainee-teacher effectiveness has no impact on their view with regard to infrastructure quality of the college. Based on the finding that emerged from the results, the study failed to reject the first hypothesis which states that there is no statistically significant gender difference in trainee-teachers with regard to their view on quality infrastructure.

The finding is in line with that of Walters (2002) who also found that trainees' gender has no significant effect on their effectiveness and their views on the institutions' infrastructure and learner support services quality. Again, the finding supports the submission of Heck (2017), who posits that gender is a variable that has no impact on infrastructure quality and students support services. However, the finding is inconsistent with that of Dankyi (2013), whose findings

show that gender has a significant effect on students' perception towards the various support services provided to them and the infrastructure quality of the college centres. The female students perceived them worse than their male counterparts.

The results further shows that there was a statistically significant gender difference in male (Mean = 3.496, Std. Dev. = 0.872) and female (Mean = 3.194, Std. Dev. = 0.866) trainee-teachers' views with regard to quality faculty of the college [t = 3.317, df = 372, p = 0.001]. This shows that gender has an effect on the trainee-teachers' view on the calibre of people the college engages for tutoring students. Specifically, male trainee-teachers ranked quality level of faculty of the college higher than their female counterparts. Based on Cohen (as cited in Pallant, 2014), guidelines on the interpretation of the eta square, the magnitude of the difference between the mean scores of male and female trainee-teachers with regard to their views on quality of faculty was small [eta square (η^2) = 0.029). This shows that 2.9 percent of the variances in trainee-teachers views on quality faculty could be explained by their gender. This shows that relatively male students value the quality of the college's faculty higher than female trainee-teachers. Based on this finding, the study rejects the second hypothesis which states that gender has no statistically significant effect on trainee-teachers' views on quality of faculty since the evidence show that there is a significant difference.

The finding that gender has a significant impact on trainee-teachers views on faculty quality is incongruent with that of Khan (2017), who found that gender had no effect on students view on their teachers' quality with regard to

educational and professional qualifications. The finding, however, may mean that the course facilitator or instructor gender stratification in distance learning system can either make or break the system, so important consideration must be given to the gender role these instructors play in such a system.

Table 19 further shows that there were no statistically significant gender differences in trainee-teachers with regard to their views on learner support service quality [t = 1.335, df = 372, p = 0.183], quality interaction [t = 1.721, df = 372, p = 0.086], quality evaluation [t = 1.358, df = 372, p = 0.175], and tutor support service quality [t = -1.473, df = 372, p = 0.142]. This shows that gender has no impact on trainee-teachers views on learner support service quality, quality interaction, quality evaluation, and tutor support service quality. Based on the findings that emerged from Table 19, the study failed to rejects the third, fourth, fifth, and sixth hypotheses respectively since there was enough evidence to show that gender of trainee-teachers has no impact on their views regarding quality of learner support services system, quality of course facilitators' interaction, quality of instruction evaluation by course facilitators, and tutor support services quality

The finding that gender has no impact on quality instruction is inconsistent with that of Clotfelter, Helen and Jacob (2016), whose study revealed that gender has a significant effect on instructional quality dimensions. Clotfelter's et al. (2016) study revealed that the female students, compared with the male students, perceived all quality domains and dimensions as being more important in evaluating DL quality. In addition, gender differences were found in the perceived barriers to and support for DL. These findings imply that even though DL has

contributed to widening access to education and reducing the gender disparity in education, there still exists a lack of gender-considerate supports in Asian DL (Clotfelter et al., 2016). However, the finding that emerged from this study may mean that gender differences in the perception of quality interaction in DL suggest that there is no need for policy makers to consider gender differences when developing, delivering, and supporting DE since both male and female trainees are subjected to the same environment, rules and regulations.

However, in the case of pedagogical quality, the results show that there was a statistically significant difference between male (Mean = 3.477, Std. Dev. = 0.829) and female (Mean = 3.662) trainee-teachers with regard to their views on the variable [t = -2.269, df = 372, p = 0.024]. The female trainee-teachers ranked it higher than male trainee-teachers. This shows that female trainee-teachers are able to exhibit high level of quality in their instructional methods that promote learner interactions and delivery of suitable and quality content to learners than their male counterpart. Based on this finding, the study rejects the seventh hypothesis which states that there is no statistically significant gender difference in trainee-teachers with regard to their views on pedagogical quality since the evidence available show that gender has an influence on pedagogical quality. The finding is consistent with that of Amoono (2016), whose study revealed that female students demonstrated greater effectiveness in teaching than their male counterparts. However, the finding is not in line with that of Mbwesa (2014), who found that gender has no effect on students' rating of quality of distance education courses with regard to pedagogical quality.

The overall results, with regard to instructional quality show that gender has no impact on trainee-teachers views [t = 1.552, df = 372, p = 0.122]. This shows that gender has no effect on trainee-teachers quality level of instruction with regard to pedagogical skills, teacher qualification, infrastructure, student-teacher interaction, evaluation, student support services, and teachers' support services.

In addition, the results that emerged from Table 19 shows that there was no statistically significant difference between male and female trainee-teachers with regard to teaching effectiveness [t = -1.120, df = 372, p = 0.263]. Even though there was no statistically significant difference between male and female trainee-teachers, the female trainee-teachers demonstrated higher level of teaching effectiveness than male trainee-teachers. Based on this finding, the study failed to reject the research hypothesis that there is no statistically significant difference between male and female trainee-teachers' effectiveness since the evidence support that.

The results may mean that trainee-teachers usage of time during class and outside of class to the maximum is not based on their gender. This shows that gender has no influence in determining the effectiveness level of a teacher in the area of objectives and core points in lesson plan, teaching methodology and delivery, and classroom organisation and management. Trainee-teachers' ability to give his/her best in teaching and able to make his/her students learn or master the skills and turned them meaningful, relevant and applicable in real life

situations do not based on his/her gender, but rather are based on the individual competence of the person in question.

Summary of Chapter Four

The chapter presents results and discussion regarding the impact of instructional quality on trainee-teachers' effectiveness. The results have been presented with associated explanations. With the help of tables, the study analysed and presented the data using both descriptive and inferential statistics. The results show that the seven dimensions of instructional quality (quality infrastructure, quality of faculty, learner support service quality, quality interaction, quality evaluation, tutor support service quality, and pedagogical quality) are positively related to trainee-teachers' effectiveness. However, gender was found not to have any significant impact on trainees' view on instructional quality and their teaching effectiveness. With regard to the regression analysis, the results revealed that instructional quality explained 75 percent of the variance in trainee-teachers' effectiveness, with pedagogical quality (50.3%), quality evaluation (28.7%), quality infrastructure (25.2%), and learner support service quality (13.2%) being the strongest explanatory variables that significantly impacted on trainee-teachers' effectiveness. This means that instructional quality has a significant impact on trainee-teachers' effectiveness.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

In this chapter, a summary of the study, the conclusions drawn as well as recommendations made are presented. The chapter further presents suggestions for further research.

Summary

The summary of the study comprised two parts. The first part focused on the overview of the study, while the second part focused on the key findings.

Overview of the study

Generally, the study investigated the impact of instructional quality on trainee-teacher effectiveness in the delivery of DL in Ghana, focusing on CoDE, UCC. The position of the study on truth and reality as explained earlier through review of related literature influenced the adoption of the quantitative approach for this study. The descriptive survey design was also adopted for the study. The accessible population was all CoDE course tutors, totalling 1837 made up of 1,051 males and 786 females, and all CoDE students at all the 76 study centres offering education programmes across the country totalling 51,456 made up of 29,126 males and 22,330 females.

The sample size for the study was 726. This was obtained based on the recommendations of Galero-Tejero (as cited in White, 2015). The sample comprised of 397 trainee-teachers and 329 course tutors. The lottery method of

simple random sampling technique was first employed to select one region from each of the three Zones. These were Greater-Accra, Ashanti and Northern Regions. Also, proportionate stratified random sampling approach was used to select respondents. Since the total population sizes of course tutors and trainee-teachers in the selected three regions were 697 and 21,312 respectively, the proportional sampling procedure was used to allocate 47.2 percent for course tutors and 1.9 percent for trainee-teachers with regard to gender stratum. In addition, purposive sampling procedure was used to select only trainee-teachers who had been scheduled to do On-Centre Teaching Practices at the various study centres.

Questionnaires were the instruments used to collect data from the respondents. In order to ensure the validity and reliability of the instruments, a pre-test was carried out. The Cronbach's Alpha of the trainee-teachers' and course tutors' questionnaires were 0.817 and 0.912 respectively, implying acceptability. The various ethical issues considered by the IRB of UCC were adhered to as expected. In addition, the researcher maintained objectivity, presented the true research findings, used the research results for academic purposes only as outlined in the research protocol of IRB of UCC.

The data were analysed using both descriptive and inferential statistical tools. Specifically, data on the background characteristics of the respondents were analysed using descriptive statistics of frequency counts and percentage distributions, while those for the specific research questions were analysed using Pearson product moment correlation. The independent samples t-test was used to

analyse data regarding the first eight hypotheses while linear multiple regression analyses was used to analyse data regarding the eight hypotheses. The key findings that emerged from the study with regard to the research questions and hypotheses are stated herein:

Key findings

The seven specific research questions of the study examined the relationships between the seven dimensions of instructional quality (quality infrastructure, quality of faculty, learner support service quality, quality interaction, quality evaluation, tutor support service quality, and pedagogical quality) and trainee-teacher effectiveness. The main findings that emerged were:

1. Values for quality evaluation and teacher trainees' effectiveness were substantially high, and there was a statistically significant positive relationship between quality evaluation and trainee-teachers' effectiveness ($r = 0.609$, $p < 0.01$). This means that course evaluation and assessment procedures of the college are of good quality, and that there is periodic evaluation of trainee-teachers' professional skills by facilitators and the university. The finding on trainee-teachers also mean that trainee-teacher of the college are able to demonstrate high level of professional competency with regard to making sure that objectives and core points in lesson plan, teaching methodology and delivery, and classroom organization and management are in line with the UCC standard. The strong relationship ($r = 0.609$) means that the more trainees' course tutors

of the college adhere to the activities and policies concerned with periodic students' learning assessment and feedback during OCTP, the greater the ability of the trainee-teachers to teach well or achieve a desired result without wasting energy or effort.

2. Values for learner support service quality and teacher trainees' effectiveness were substantially high, and there was a statistically significant positive relationship between learner support service quality and trainee-teacher effectiveness ($r = 0.470$, $p < 0.01$). This moderate relationship shows that learner support service quality of CoDE, UCC relate significantly with trainee-teachers' effectiveness. This means that the quality of the support services provided to learners at the college help enhance trainee-teachers effectiveness level of teaching in order to achieve or meet pre-specified standards and goals set by the university. The moderate relationship however points to the college to improve on leaner support services of the college.
3. Values for pedagogical quality and teacher trainees' effectiveness were substantially high, and there was a statistically significant positive relationship between pedagogical quality and trainee-teacher effectiveness ($r = 0.702$, $p < 0.01$). This shows that trainee-teachers exhibit high level of instructional competence and quality of delivery. The strong relationship shows that the higher the quality of the learning activities and instructional methods that promote learner interactions in various forms of distance

learning as well as delivery of suitable and quality content to learners, the higher the effectiveness and competence level of trainee-teachers.

4. The results show that respondents have negative perception toward the infrastructure quality (Mean = 1.908, Std. Dev. = 0.795) of the college. This shows that the infrastructure capacity of the college, with regard to the various study centres, is not in good shape per the expectations of the respondents and needs improvement. The results further show that there is a strong, positive and statistically significant relationship between quality infrastructure and trainee-teachers effectiveness ($r = 0.633$, $p < 0.01$). This shows that the higher the level of infrastructure quality of the college the higher trainee-teachers' effectiveness.
5. Tutor support service quality (Mean = 3.043, Std. Dev. = 0.904) was positively perceived by the respondents. This means that the various support services the college provides to course tutors are relatively better, according to the respondents. The results further show that there was a statistically significant positive relationship between tutor support service quality and trainee-teachers' effectiveness ($r = 0.357$, $p < 0.01$). The relation between tutor support service quality and trainee-teachers' effectiveness can be described as moderate (Ary et al., 2010). This means that the more the college provides appropriate and meaningful support services to its course tutors, the higher the level of trainee-teacher competence. This shows that providing support services to course tutors is one of the important indicators of predicting trainee-teachers'

effectiveness positively. This relationship also means that the college should improve on its tutor support services.

6. The respondents indicated that the quality of the faculty of the college is relatively good (Mean = 3.369, Std. Dev. = 0.881). This shows that trainee-teachers are satisfied with the professional competence demonstrated by the various course tutors being engaged by the college. The results further show that there was a statistically significant positive relationship between quality of faculty dimension and trainee-teachers' effectiveness ($r = 0.522$, $p < 0.01$). The relationship can be described as moderate. The finding shows that engaging high caliber of people as course tutors help in boosting trainee-teachers' effectiveness. This means that the college engaging highly qualified people as course tutors help enhance trainee-teachers' effectiveness level of teaching in order to achieve or meet pre-specified standards and goals set by the university.
7. The results illustrate that respondents perceived quality interaction (Mean = 3.103, Std. Dev. = 0.789) positively. This shows that trainee-teachers are relatively satisfied with their interaction with their course tutors. Furthermore, quality interaction has a positive and significant relationship with trainee-teachers' effectiveness ($r = 0.502$, $p < 0.01$). The relation can be described as moderate. This shows that the higher the quality of interaction exhibited by trainees and their tutors, the higher the ability of trainee-teachers to deliver suitable and quality content to learners, which in the long run will help enhance their and competence levels.

Lastly, the study examined the predictability of instructional quality on trainee-teacher effectiveness. The key findings that emerged were:

1. Instructional quality dimensions that predicted trainee-teachers' effectiveness significantly in order of importance were pedagogical quality [($\beta = 0.503$ (0.024), $p < 0.01$], quality evaluation [$\beta = 0.287$ (0.022), $p < 0.01$], quality infrastructure [$\beta = 0.252$ (0.027), $p < 0.01$], and learner support service quality [$\beta = 0.132$ (0.029), $p < 0.01$]. This shows that pedagogical quality, quality evaluation, quality infrastructure, and learner support service quality are the components of instructional quality that significantly predict trainee-teacher effectiveness.
2. Quality of faculty, quality interaction and tutor support service could not significantly predict trainee-teacher effectiveness.
3. The components of instructional quality predict or explain 75 percent of the variance in trainee-teachers effectiveness. This means, quite apart from the entered dimensions of instructional quality, other components or variables that are not yet considered in the model have a chance of contributing 25 percent to trainee-teachers effectiveness.

The eight hypotheses of the study examined the gender differences in trainee-teachers with regard to their instructional quality, focusing on the dimensions of instructional quality, and their effectiveness. The key findings that emerged were that:

1. Even though male trainee-teachers (Mean – 1.916, Std. Dev. = 0.822) rated quality infrastructure of the college higher than female trainee-teachers (Mean – 1.896, Std. Dev. = 0.758), there is no statistically significant difference between male and female trainee-teachers with regard to their views on quality infrastructure of the college [t = 0.239, df = 372, p = 0.811]. This shows that gender of trainee-teachers has no influence on their view with regard to infrastructure quality of the college. Based on this finding, the study failed to reject the first hypothesis which states that there is no statistically significant difference between male and female trainee-teachers with regard to their perception on quality infrastructure.
2. However, there was a statistically significant gender difference in male (Mean = 3.496, Std. Dev. = 0.872) and female (Mean = 3.194, Std. Dev. = 0.866) trainee-teachers views with regard to quality faculty of the college [t = 3.317, df = 372, p = 0.001]. This shows that gender has an effect on the trainee-teachers' views on the calibre of people the college engage for tutoring students. Specifically, male trainee-teachers indicated that they rank quality level of faculty of the college higher than their female counterpart. Based on Cohen (as cited in Pallant, 2014), guidelines on the interpretation of the eta square, the magnitude of the difference between the mean scores of male and female trainee-teachers with regard to their views on quality of faculty was small [eta square (η^2) = 0.029). This shows that 2.9 percent of the variances in trainee-teachers views on quality

faculty could be explained by their gender. This shows that relatively male students value the quality of the college's faculty higher than female counterparts. Based on this finding, the study rejects the second hypothesis which states that gender has no statistically significant effect on trainee-teachers views on quality of faculty since the evidence show that there is a significant difference.

3. Furthermore, there were no statistically significant differences between male and female trainee-teachers with regard to their views on learner support service quality [t = 1.335, df = 372, p = 0.183], quality interaction [t = 1.721, df = 372, p = 0.086], quality evaluation [t = 1.358, df = 372, p = 0.175], and tutor support service quality [t = -1.473, df = 372, p = 0.142]. This shows that gender has no impact on trainee-teachers view on learner support service quality, quality interaction, quality evaluation, and tutor support service quality. The study therefore, failed to reject the third, fourth, fifth, and sixth hypotheses respectively since there was enough evidence to show that gender of trainee-teachers has no influence on their views regarding quality of learner support services system, quality of course facilitators' interaction, quality of instruction evaluation by course facilitators, and tutor support services quality.
4. However, in the case of pedagogical quality, the results show that there was a statistically significant difference between male (Mean = 3.477, Std. Dev. = 0.829) and female (Mean = 3.662) trainee-teachers with regard to their views on the variable [t = -2.269, df = 372, p = 0.024]. The female

trainee-teachers rated it higher than male trainee-teachers. This shows that female trainee-teachers are able to exhibit higher level of quality in their instructional methods that promote learner interactions and delivery of suitable and quality content to learners than their male counterpart. Based on this finding, the study rejects the seventh hypothesis which states that there is no statistically significant gender difference in trainee-teachers with regard to their perception on pedagogical quality. This shows that gender has an influence on pedagogical quality.

5. The overall results, with regard to instructional quality show that gender has no impact on trainee-teachers [t = 1.552, df = 372, p = 0.122]. This shows that gender has no effect on trainee-teachers quality level of instruction with regard to pedagogical skills, teacher qualification, infrastructure, student-teacher interaction, evaluation, student support services, and teachers' support services.
6. Similarly, there was no statistically significant gender difference in trainee-teachers with regard to their teacher effectiveness [t = -1.120, df = 372, p = 0.263]. Even though there was no statistically significant gender difference in trainee-teachers, the female trainee-teachers demonstrated higher level of effectiveness than male trainee-teachers. Based on this finding, the study failed to rejects the research hypothesis that there is no statistically significant difference between male and female trainee-teachers' effectiveness.

Conclusions

From the findings of the study, the following conclusions are drawn. First, the study concluded that pedagogical quality and quality evaluation were the dimensions of instructional quality that were highly perceived by trainee-teachers of the college. This is because trainees were able to develop and demonstrate high level of instructional methods that promote learner interactions in various forms as well as delivery of suitable and quality content to learners during their OCTP. Likewise, course tutors were able to assess students' learning and feedback periodically.

Secondly, the study concluded that the higher the instructional quality demonstrated by a trainee-teacher, the higher he/she becomes a competent and efficient teacher in the profession. Similarly, whenever the trainee-teachers demonstrate high level of competence in terms of his/her ability to demonstrate effective command over possession of subject matter knowledge, lesson presentation skills (methods and questioning skills), class management and control and lesson note preparation, he/she increases the extent to which his/her level of teaching achieves or meets pre-specified standards and goals. That is, the trainee begins to believe in his or her personal ability to execute the courses of action needed to positively affect student performance. Thirdly, the study concluded that gender of trainee-teachers has no impact on their views regarding instructional quality and their demonstrated effectiveness. Lastly, the study concludes that trainee-teachers ability to demonstrate high level of instructional quality with regard to pedagogy, evaluation, learner support service, and

infrastructure qualities have a significant impact on trainees' ability to teach well or achieve a desired result without wasted energy or effort in the teaching profession.

The major contribution of this study to knowledge therefore, is that pedagogical quality, quality evaluation, quality infrastructure, and learner support service quality are the components of instructional quality that significantly predict trainee-teacher effectiveness at the College of Distance Education, University of Cape Coast. The conceptual framework of the study therefore, still stands.

Recommendations

Based on the key findings and conclusions of the study, a number of practical recommendations for enhancing teacher education at CoDE, UCC with regard to instructional quality and trainee-teachers effectiveness are made:

The findings that emerged from the research questions of the study indicated that trainee-teachers ranked the pedagogical and evaluation qualities of the college high. However, those of infrastructure, quality faculty, tutor support service, and quality interaction were ranked less. This means that trainee-teachers are satisfied with the contents of courses being taught, tutors usage of appropriate teaching learning materials, and their demonstrated professionalism, and competency. Also, they are satisfied with the periodic evaluation of course and trainees professional skills. The study, therefore, recommend to management of the college to ensure and encourage the course tutors to keep the good work that

they are doing with regard to quality evaluation and provision of quality pedagogical skills to trainees. Also, management should provide better infrastructure, support services, and learning materials which can bring diversity in the study centres by employing visual, auditory and kinaesthetic materials such as use of technology and students' project writing and presentation among other methods.

With reference to the finding that the learner and tutor support services put in place by CoDE, UCC are not able to meet the instructional needs of trainee-teacher effectiveness. Particularly, in relation to academic counselling services, skill training, welfare support, administrative support, logistics, library facilities, instructional resources, periodic refresher courses for course tutors, periodic feedback, and timely payment of claims for facilitation and marking of scripts. The study therefore, recommends that management of the college should ensure that their guidance curriculum and responsive services are structured to address human relationships, career development, life skills, social values, self-development, and learning skills. Also, providing support services to learners and tutors should be an integral part of the college's education process and that more time and status should be allocated for that.

The finding that the components of instructional quality are positively related to trainee-teachers effectiveness re-emphasises that teacher effectiveness is a response to the instructional quality situation, than a characteristic of the student alone. That is, instructional quality has a significant influence on trainee-teacher effectiveness. The contextual and situational factors pertinent to the adoption of

the seven components of instructional quality are in no way diminished by these findings, but it is evident that the interaction of the dimensions with external factors over time should be important components in any teacher education model. Therefore, it is recommended to management of the college to ensure that appropriate support services are put in place in all centres of the college to ensure that both tutors and students are guided and counselled on appropriate instructional behaviours that when adopted in the study centres will boost the instructional quality level of the college, which in the long run will lead to a significant increase in trainee-teacher effectiveness.

Suggestions for Further Research

Firstly, the instruments used in this study may be used in the study of other institutions in order to test their reliability and validity in other contexts, and to broaden the understanding of instructional quality and teacher effectiveness in teacher education. It is, therefore, suggested that:

1. This study should be replicated in the various public and private universities in Ghana, especially those that operate distance education programme model.
2. Further studies should be performed with the same research design and instrumentation as the current study using both private and public universities offering distance education model. This would greatly increase generalisability to other institutions and populations.

3. It would be prudent to compare regular and distance learning environments in terms of the study variables.
4. Future research should advance the comprehension of the complex nature of instructional quality and trainee-teacher effectiveness by exploring other facets of individual differences such as self-efficacy. Such research could also consider environmental factors such as socioeconomic status as predictors of trainee-teacher effectiveness.
5. Furthermore research should be conducted using the phenomenological approach in order to determine possible reasons behind instructional quality and teacher-trainee effectiveness at CoDE, UCC subjectively in order to understand the students and the course tutors from the humanistic perspective.

Summary of Chapter Five

The chapter presented an overview of the entire thesis work which focused on examining the predictability of instructional quality on trainee-teacher effectiveness at CoDE, UCC. It depicts the last impression of the study. The chapter started with an overview of the study. This includes the purpose, and the research methods employed. It also summarised the key findings of the study, followed by the conclusions from the results discussed in the results and discussion section. The chapter ended with practical recommendations based on the key findings of the study, and suggestions for further research.

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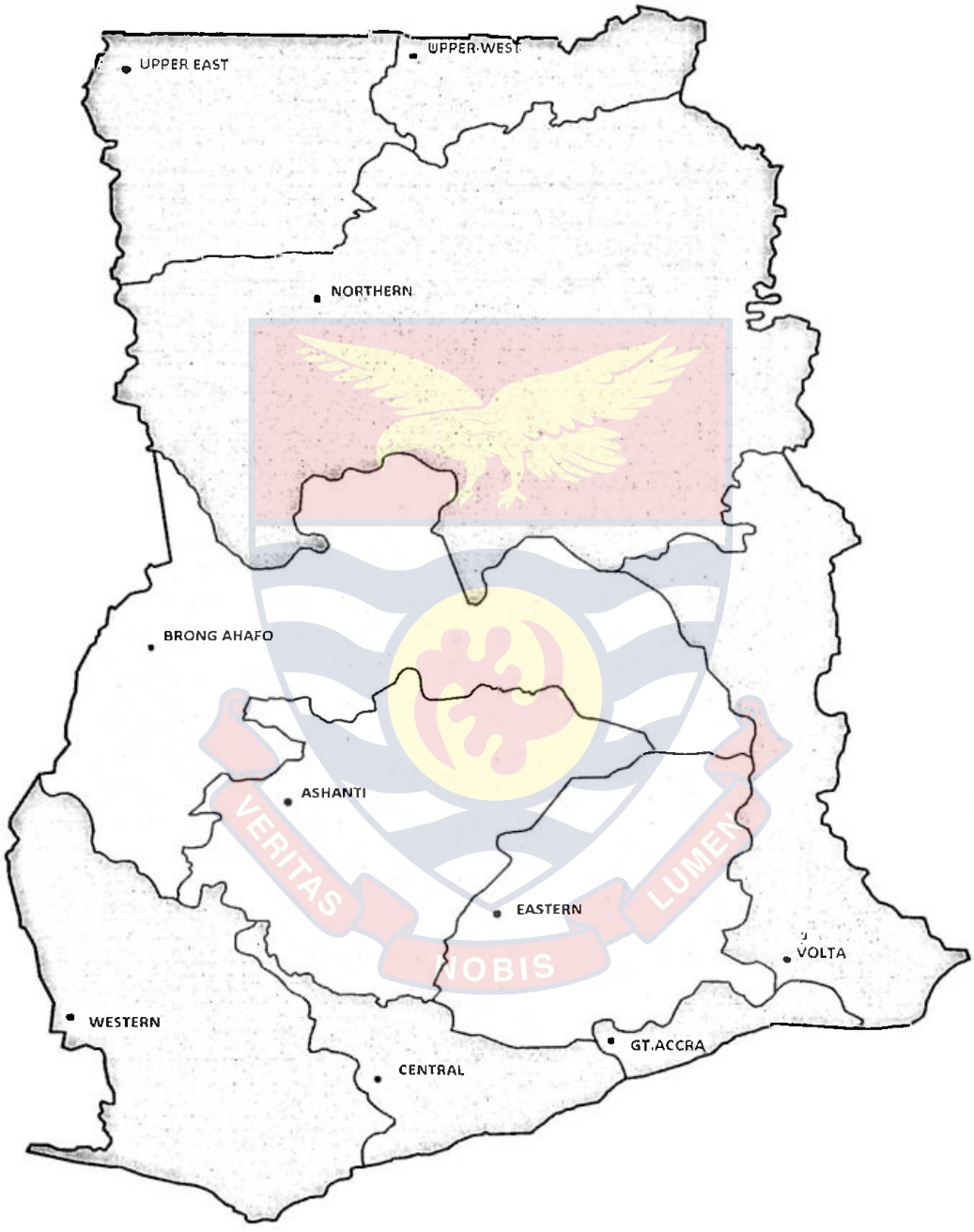
APPENDICES

APPENDIX A
Map Depicting the Zoning of Ghana into Three by CoDE, UCC



APPENDIX B

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Questionnaire for Trainee-teachers

TOPIC: Impact of Instructional Quality on Trainee Teacher effectiveness in the Delivery of Distance Education in Ghana

Dear Respondent,

This questionnaire has been designed to solicit information for a research work being undertaken on the above topic. The various education students of the college have been selected as a unit of analysis. You have been selected as one of the respondents. The survey is completely voluntary. Your co-operation and opinions are very important to the success of the study and will be kept strictly confidential. Please kindly respond to the questionnaire by filing in as appropriate. The information given through this questionnaire is purely for academic purposes. Should you have any questions concerning the administration of the survey, please feel free to contact the researcher with this phone number (0242210991). I look forward to your participation and appreciate your support in this important effort. Please do not indicate your name on the questionnaire.

Consent to Participate in Research:
I understand that any information I share will remain confidential and that when the results of the research are published or discussed in conferences, no information will be included that would reveal my identity. I am 18 years of age or older. By agreeing to continue with the survey and submit a response to the researcher in question, I am giving consent to participate in this study.

I consent to participate in this survey: ☐ **Yes** ☐ **No**

SECTION A: Background Characteristics of Respondents

Please tick (√) or provide responses to the questions which follow:

1. Please indicate your gender by ticking in the relevant box
   a. Male [ ]
   b. Female [ ]

2. Please indicate your marital status.
   a. Single [ ]
   b. Married [ ]
   c. Separate [ ]
   d. Divorced [ ]

3. Age group of respondents
   1. Less than 21 years [ ]
   2. 21 – 30 years [ ]
   3. 31 – 40 years [ ]
   4. 41 years and above [ ]

SECTION B: Instructional Quality (IQ) at the Study Centre

In relation to the five sub-topics, please indicate your level of agreement to the following statements that focus on pedagogical quality, quality of faculty, quality infrastructure, quality interaction, and quality evaluation of trainee-teachers respectively. The responses to the statements are measured numerically using the following unilinear scale such that the higher the number the more you agree with the statements and the lower the number the more you disagree with the statements.

Pedagogical Quality (PQ) at the Study Centre

Statements on Pedagogical Quality	1	2	3	4
1. The contents of courses being taught are relevant to my needs as a trainee-teacher.				
2. Tutors use good teaching learning materials in instruction which enhance my understanding.				
3. There is flexibility and variety in the teaching methods which help me to acquire professional skills.				
4. The face-to-face tutorials are **NOT** effective.				
5. There are collaborative and group learner activities included in the instructional processes.				
6. Tutors do **Not** cater for individual differences in their instructional processes.				
7. There is **NO** flexibility in the pace of teaching and even distribution of questions.				
8. Courses are taught in a manner that suites my understanding which is good for my skill acquisition.				
9. Instruction is **TOO** abstract for me to acquire practical teaching skills.				

Quality of Faculty (QF) at the Study Centre

Statements on Quality of Faculty	1	2	3	4
1. Course Tutors on the programme are well trained and highly qualified.				
2. The course tutors are very professional thus periodically engage us in practical aspects of courses they teach and help us to acquire teaching skills.				
3. The course tutors are knowledgeable about how and when to help me overcome my learning difficulties in the courses they teach.				

Quality Infrastructure (QI) at the Study Centre

Statements on Quality Infrastructure	1	2	3	4
1. Washrooms are available, clean and of good quality.				
2. Physical classrooms are of good quality which enhances quality teaching and learning.				
3. The absence of technological infrastructure such as computer laboratories and internet access at my study centre affect my learning and acquisition of teaching skills.				
4. The university's **INABILITY** to provide electronics such as computers, CD ROMS and projectors affects quality teaching, learning and our acquisition teaching skills.				
5. Washrooms classroom furniture are gender friendly.				

Quality Interaction (QIn) at the Study Centre

Statements on Quality Interaction	1	2	3	4
1. Our interaction with our Tutors at the learning centre is effective.				
2. I am developing a lot of teaching skills because my tutors always promote effective ways for me to interact with the content or concepts to be learned, directing me to sections of the study material in order to construct knowledge on my own.				
3. I do **NOT** have any medium created by Course Tutors or the university to interact with tutors both offline and online.				
4. My Course Tutors create a platform for group work and discussions for as to interact with colleague course mates in order to seek and construct knowledge.				
5. My Course Tutors always come together shear ideas on how to assist us grow our practical skills of teaching and practice for mastery.				

Quality Evaluation (QE) of Trainee-teacher effectiveness at the Study Centre

Statements on Quality Evaluation of Trainee-teachers effectiveness	1	2	3	4
1. Course evaluation and assessment procedures are of good quality.				
2. There is periodic evaluation of my professional skills by facilitators and the university.				
3. There is **UNTIMELY** feedback to students' assignments, quizzes and other assessment results.				
4. When the university gets feedback from students' complaints about problems with assessment results, prompt actions are taken to address them.				
5. Course Tutors do not conduct Teacher Made Tests at				

	either the beginning of instruction or at the end of it.			
6.	Course Tutors patiently identify my academic and professional weaknesses and help me overcome them as they supervise my Teaching Practice at the study centre.			

Learner Support Service Quality (LSSQ) at the Study Centre

In relation to this part, please indicate the adequateness level of the following statements regarding learner support quality. The responses to the items are measured numerically using the following unilinear scale such that the higher the number the more adequate such support is and the lower the number the more inadequate such a support is.

Statements on Learner Support Quality	**1**	**2**	**3**	**4**
1. The learner support services at my study centre are effective.				
2. There is **NO** distance learning skill training for all trainee-teachers.				
3. There is **NO** psychological support for students such as academic counselling services.				
4. Learner welfare is well taken care of. eg. Financial support and health services are available at my study centre to aid learners to be sound and efficient.				
5. Administrative support services such as assisting learners solve academic related problems like ICs, accessing detailed results and letters of attestation are ineffective.				
6. There is always a delay in supply of learning modules and examination results.				
7. Released examination and detailed results are not easily accessible (they cannot be access on phones)				
8. There are flexible methods of payment of school fees				
9. There is **NO** means of accessing physical and online library resources as my counterparts in the conventional system.				
10. My comfort and studies are affected because internet as a medium is not used for providing course modules and other relevant materials to us.				

APPENDIX C

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Questionnaire for Course Tutors

TOPIC: Impact of Instructional Quality on Trainee Teacher effectiveness in Distance Education in at CoDE, UCC.

Dear Respondent,

This questionnaire has been designed to solicit information for a research work being undertaken on the above topic. The various course facilitators of the Department of Education, College of Distance Education have been selected as a unit of analysis. You have been selected as one of the respondents. The survey is completely voluntary. Your co-operation and opinions are very important to the success of the study and will be kept strictly confidential. Please kindly respond to the questionnaire by filing in as appropriate. The information given through this questionnaire is purely for academic purposes. Should you have any questions concerning the administration of the survey, please feel free to contact the researcher with this phone number (0242210991). I look forward to your participation and appreciate your support in this important effort. Please do not indicate your name on the questionnaire.

Consent to Participate in Research:
I understand that any information I share will remain confidential and that when the results of the research are published or discussed in conferences, no information will be included that would reveal my identity. I am 18 years of age or older. By agreeing to continue with the survey and submit a response to the researcher in question, I am giving consent to participate in this study.

I consent to participate in this survey: ☐ **Yes** ☐ **No**

SECTION A: Background Characteristics of Respondents
Please tick (√) or provide responses to the questions which follow:

1. Please indicate your gender by ticking in the relevant box
   a. Male [ ]
   b. Female [ ]

2. Please indicate your marital status.
   a. Single [ ]
   b. Married [ ]
   c. Separate [ ]
   d. Divorced [ ]

3. Age group of respondents
   1. Less than 21 years [ ]
   2. 21 – 30 years [ ]
   3. 31 – 40 years [ ]
   4. 41 years and above [ ]

4. Please indicate your highest level of educational qualification:
   1. Bachelor's degree (Eg. Bed, BSc, BA, BBA etc.) [ ]
   2. Master's degree (Eg. MPhil, MBA, MSc, MCom, etc.) [ ]
   3. Doctoral degree (Eg. PhD, DSc, DEd, DBA etc.) [ ]

5. Please indicate your years of teaching experience at the tertiary level:
   1. Less than 6 years [ ]
   2. 6 – 10 years [ ]
   3. 11 – 15 years [ ]
   4. 16 – 20 years [ ]
   5. 21 years and above [ ]

SECTION B: Tutor Support Service Quality (TSSQ) at the Study Centre

In relation to this section, please indicate your level of agreement to the following statements that focus on tutor support service quality. The responses to the statements are measured numerically using the following unilinear scale such that the higher the number the more you agree with the statements and the lower the number the more you disagree with the statements.

Statements on Tutor Support Service Quality	1	2	3	4
1. There is periodic course tutor assessment by chief examiners and students to ensure quality tutor output.				
2. Tutors are equipped with instructional resources necessary for quality instruction.				
3. There are periodic refresher courses for Course Tutors to be well equipped with improved methods of quality instruction.				
4. There is periodic feedback from the university about course tutor concerns and problems.				
5. There is timely payment of claims for facilitation and marking of examinations.				

SECTION C: Trainee-teacher effectiveness

In relation to this section, please indicate the degree to which your students demonstrate effectiveness in teaching during on-centre teaching practice at your study centre. The responses to the statements are measured numerically using the following unilinear scale such that the higher the number the more you agree that students demonstrate high level of in teaching and the lower the number the more you disagree that students demonstrate level of in teaching.

Statements on Objectives and Core Points in Lesson Plan	1	2	3	4
1. Teacher states specific, relevant, measurable and achievable objectives which are linked to classroom activities				
2. Teacher states core points for all activities which relate to the lesson				
3. Teacher provides varies teacher/learner activities that are logical, timely and direct student learning.				
4. Teacher states appropriate and varied TLMs and indicates when in suitable stages of the lesson.				
5. Teacher's subject knowledge is logical				
6. Teacher provides activities to engage students				
Statements on Teaching Methodology and Delivery	**1**	**2**	**3**	**4**
1. Teacher reviews students' RPK to stimulate their interest.				
2. Teacher shares lesson objective with students.				
3. Teacher organises teaching and learning activities sequentially				
4. Teacher uses varied pedagogical skill				
5. Teacher uses appropriate pace for the entire lesson in order for all students to hear him/her clearly				
6. Teacher asks well-balanced mixture of factual, probing high order and divergent questions				
7. Teacher distributes questions fairly to stimulate critical thinking in students.				
8. Teacher manages board effectively (ie. writing of date, subject, topic, core points, and cleaning of board at the end of lesson.)				
9. Teacher is able to link appropriate TLR's to lesson objectives(s) at key stage(s) of the lesson.				
10. Teacher uses correct grammatical expressions				
11. Teacher uses a variety of assessment techniques to ensure students participation				
12. Teacher exhibits command of subject matter				
Statements on Classroom Organisation and Management	**1**	**2**	**3**	**4**
1. Teacher establishes purposeful learning environment that help in monitoring students learning activities.				
2. Teacher establishes clear parameters for student conduct in order to control the class				
3. Teacher behaves professionally in teaching				
4. Teacher draws attention to end of the lesson to ensure effective lesson closure				
5. Teacher shows professional commitment by showing positive attitude towards teaching.				

APPENDIX E

ANOVA Output showing the Predictive Capability of all the Predictors taken together

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	125.874	4	31.469	276.208	.000[b]
	Residual	42.040	369	.114		
	Total	167.915	373			

a. Dependent Variable: Trainee-teacher efficiency

b. Predictors: (Constant), Learner support service quality, Pedagogical quality, Quality infrastructure, Quality evaluation

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
ETHICAL REVIEW BOARD

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: CES/ERB/CR/Vol.1/004

Your Ref: .....

Date: March 17, 2017

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Dear Sir/Madam,

ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY

The bearer, Felix Senyametor ..... Reg. No ED/EPY/15/0001. is an ~~M.Phil~~ /Ph.D student in the Department of Education and Psychology ....., College of Education Studies, University of Cape Coast, Cape Coast, Ghana. He/~~She~~ wishes to undertake a research study on the topic The impact of instructional quality on trainee teacher efficacy in the delivery of distance education in Ghana .....

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed the proposal submitted by the bearer. The said proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence his/~~her~~ study. The ERB would be grateful if you would give him/~~her~~ the necessary assistance that may be needed to facilitate the conduct of the said research.

Thank you.
Yours sincerely.

Dr. (Mrs.) Linda Dzama Forde