UNIVERSITY OF EDUCATION, WINNEBA

EXPLORING THE MENTORSHIP ACTIVITIES OF UEW MATHEMATICS EDUCATION INTERNS

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JULY, 2015

DECLARATION

CANDIDATE'S DECLARATION

I, Francis Xavier Adams declare that this thesis with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work and has not been submitted, either in part or whole for another degree elsewhere.

Signature……. Date…….

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of thesis as laid down by the University of Education, Winneba.

Name of Principal Supervisor: Dr. Michael Johnson Nabie

Signature…… Date……

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DEDICATION

To my late mother Salome Chanase. May God grant you eternal rest, Mum!

TABLE OF CONTENTS

Contents

LIST OF TABLES

ABSTRACT

The study explored mentoring activities experienced by mathematics interns during the internship programme. It further explored interns' evaluation of mentors' professional competences and how it shapes their conception and vision of teaching and learning of mathematics and how the student internship programme can be improved. The study surveyed 134 mathematics interns from UEW. Data was collected using questionnaire and interviews. Among the interns surveyed, five were selected for interviews. The data was analysed using descriptive statistics and thematic narrative approaches. The major findings were that mentoring activities experienced in UEW partnership schools were in consonance with the guidelines of the Student Internship Programmeme (SIP). Interns' evaluation of their mentors' revealed that mentoring practices were generally satisfactory. The findings further showed that mentoring practices shaped interns' conceptions and vision of teaching and learning mathematics. However, interns strongly advocated for an extension of the duration of the Student Internship Programme to one full academic year. This will enable them build enough confidence and be exposed to varied classroom situations geared towards their professional development. Supervision by university lecturers should be more than once.

CHAPTER 1

INTRODUCTION

1.0 Overview

This chapter discusses background to the study, statement of the problem, purpose of the study, research questions, significance of the study, limitations of the study, delimitations and organization of the study.

1.1 Background to the Study

Teachers are the heartbeat of education. A country's development and prosperity depends on quality and competent teaching force (Jahin & Alexander, 2006). However, quality education has become a scarce commodity in most developing countries. In Ghana, Akyeampong (2010) noted that even though the country has made significant strides in expanding education since independence, we are still searching for an educational system that delivers on quality and equal access for all citizens. The search for quality education and an educational system that is relevant to the lives of learners led to several reforms.

Immediately after independence in 1957, the country embarked on reforms to meet the demands of the moment. This saw the establishment of the Accelerated Development Plan (ADP) which culminated in the Education Act of 1961. The 1961 Act gave legal backing to the right of every Ghanaian child to education. Even though the ADP brought in its wake rapid increase in enrollment of pupils at the primary and secondary levels with increased infrastructure, it failed in maintaining quality standards. (Ministry of Education, [MOE], 2007). This shortfall led to the formation of the Kwapong Review committee in 1966.

The Kwapong committee proposed 10 years of elementary education with a break in the 8th year to select candidates for secondary education. It also saw the introduction of continuation schools where candidates who could not make the pass mark for secondary education were absorbed. However, the continuation schools led to fallen standards in the education sector. This was evident in a World Bank report which said that Ghana's education system was the best in sub Saharan Africa until the mid-1970s. (World Bank, 2004). This undoubtedly, was a worrying development and subsequently, the Dzobo committee was set up. The Dzobo committee was set up in 1972. Its primary focus was to improve the quality of teaching and learning and make education planning and management more effective. Even though the committee presented its report in 1974, it was not until 1987 that the recommendations were implemented. Osei-Dadzie (2005) opined based on the recommendation of Dzobo committee that the education reform started with a re-organization of the entire school system. The Dzobo committee recommendations led to the institution of an educational policy known as Free Compulsory Universal Basic Education (FCUBE) by the government in 1996 (Akyeampong, 2005; Kingsley, 2007). Even though some institutions and scholars (World Bank, 2004; Donge, 2003) admitted that our country's educational system increased access; the quality of education in all sectors did not receive any improvement.

In spite of these reforms, the quality of education in the country did not match the ever changing world of technology and science. The quest to catch up with the advancement of technology and science necessitated yet another reform. In 2002, the government inaugurated the Jophus Anamuah-Mensah committee. The 20 member committee was tasked to review the entire educational system to cope with current changes in technology.

The committee identified the JSS (now JHS) as the weakest link within the reform process. This was due to, but not limited to, poor quality teaching by teachers who are poorly prepared to teach at that level (Apeanti & Asiedu-Addo, 2007). The Anamuah-Mensah committee strongly held the need for an improved quality of instruction to meet the learning needs of all students. The committee further stressed that the teaching of mathematics skills should be given priority.

Despite these reform efforts, students' performance continues to dwindle in mathematics. Umameh (2011) views education in mathematics as an indispensable tool for any nation's scientific, technological and economic advancement. This perhaps accounts for the reason why Ghana's educational system attaches so much importance to Mathematics, English and Science. These three subjects are the core subjects that every student at pre-tertiary level must pass before gaining admission into any tertiary institution in the country. Mathematics is seen as the engine of scientific growth and everything should be done to produce teachers who are well equipped with the necessary skills and knowledge-base to teach the subject more effectively to enhance quality learning.

To guarantee quality and sustained skilled teachers, some Teacher Education Institutions (TEI) such as the University of Education, Winneba, introduced the Student Internship Programme (SIP) into their training programmes. The SIP aims at giving pre-service teachers referred to as intern teachers the opportunity to experience the realities of teaching in the classroom under the guidance of a mentor. Internship opportunity does not only improve the confidence levels of intern teachers but also teaches student behavior, and test pedagogical knowledge base of the intern (Wambugu, Barmao & Ng'eno, 2013).

In the Ghanaian educational system, there are two categories of pre-service teacher institutions namely the Teacher Education Universities (TEU) and the Colleges of Education. The University of Education, Winneba (UEW) and the University of Cape Coast (UCC) are the two main public universities noted to run the student internship programme. These universities turn out mainly graduate teachers for all levels of pre-university institutions in the country. Besides complimenting the efforts of the Colleges of Education in producing teachers with Diploma degrees for basic education, they also produce graduate teachers to handle mathematics at the secondary and Colleges of Education or tertiary institutions in general. The Universities run programmes aimed at enabling certificated teachers to upgrade their knowledge as well as produce graduate teachers who are entering the teaching profession afresh. Although the universities train teachers, the content and duration of their training programmes differ.

In the University of Cape Coast for instance, the internship programme is only for one semester and only university supervisors are supposed to provide professional guidance during their internship. The UCC interns are supervised not less than three but not more than six times by university supervisors. They have a regional supervisor for each region who coordinates and monitors the interns in the region and the university supervisors also go to supervise the interns during the period. UCC seems not to give much room for mentors and heads of institutions to assess their interns as compared to UEW.

UEW, one of the TEI in Ghana, realizing its core mandate to train competent teachers for all levels of education, introduced the SIP in 1999 (SIP, 2009). SIP is an initiative to provide intern teachers with the opportunity for autonomy, responsibility and accountability in a school with a mentor and to combine theory and practice in real life

situations. The goals of the SIP among others, is to facilitate school improvement through the development of a mentoring force in schools (Student Internship Handbook, SIP 2009). Bullough, Birrell, Young and Clark (1999) as cited in SIP (2009) suggest that one way to ensuring a connection between theory and practice is through the development of school-university partnership. Sweitzer and King (2009) note that a successful internship is one that facilitates three aspects of a students' development: personal, professional, and civic. Students enter an internship programme at different points in their development in these three categories, and with care and attention have the ability to grow in these areas as well. Some students enter an internship primarily for career exploration and it provides them with an opportunity to become socialized into the norms and values of a profession (Royes, Dhooper, & Rompf, 2007). If the internship programme is to provide the opportunity for students to become socialized into the norms and values of the teaching profession, then the mentoring activities UEW mathematics interns experience and how these activities prepare them to become competent mathematics teachers need close examination.

Since internship became a component of the teacher education programme, the UEW has been sending interns to partnership institutions across the country. These partnership institutions are supposed to benefit from the injection of new and innovative ways of teaching mathematics from these interns. At the same time, the schools also have the responsibility to assist the university to mentor its interns. Experienced mathematics mentors either from partnership institutions or other institutions close to these partnership institutions where mathematics interns are placed, are appointed or tasked to mentor these interns to achieve the set goals.

The goals of the SIP through the school-university partnership for UEW interns are to:

1. Establish a reciprocal, collaborative, and developing relationship with schools/colleges
2. Foster the development of a professional learning community where everyone involved can benefit through collaboration, cross fertilization, and reflection
3. Facilitate school improvement through the development of a mentoring force in schools, whereby teacher mentors become change agents
4. Provide a holistic experience to student teachers during their teaching practicum, supported by teacher mentors, and university supervisors (SIP, 2009)

These goals are geared towards giving the intern the conducive atmosphere to experiment what is taught at the university as compared to the realities of teaching.

Even though the goals of the SIP demonstrates a partnership professional training for interns between the university and partnership institutions, Mavhunga (2004) doubts the effectiveness of mentoring during internships on the professional development of the intern teacher to be a reflective teacher. This, Mavhunga (2004) attributes to lack of professional know how of the mentors. This suggests an apparent disconnection on what the university expects from mentors and what actually happens during the internship period.

The internship programme run by the University of Education, Winneba has identified the following as key participants: the intern, the mentor, heads of partnership institutions and the university supervisor. Each of these participants has clearly defined guidelines of operations. The SIP (2009) outlines the responsibilities of mentors some of which expect

the mentor to:

1. Be cognizant of the purpose of the internship experience and the desired goals and objectives
2. Prepare pupils/students for the arrival of interns
3. Orient the intern about the essential routines and policies of the school
4. Arrange for interns to observe their teaching in the first three weeks
5. Formally supervises each intern a minimum of six times during the internship, apart from the frequent informal observations of teaching

These are a few of the about twenty five point responsibilities of mentors stated in the SIP (2009) handbook. However, sixteen years down the line there is limited or no study that sought views of interns on the actual activities they experience in the course of the internship period. UEW does not seem to be certain on the appropriate duration of the programme for effective student mentorship. It started as teaching practice, with four weeks duration, and later renamed the 'Out Segment' or SIP with one year duration and currently one semester (four months). These inconsistencies in duration stem from limited study on the duration and evaluation of SIP in UEW with focus on the role mentors play in the professional development of the interns and how interns view impact of their mentoring experiences on their careers as teachers during the internship. There is a tendency that if care is not taken the SIP might even be reduced to two weeks and thereby defeating the university's core mandate of producing competent professional teachers.

Another category of pre-service teachers, apart from those trained by the universities, are produced by the Colleges of Education. According to the Institute of Education (2013),

there are thirty eight (38) public and three private Colleges of Education in Ghana. These institutions collectively have the core mandate to train teachers for all levels of pre-university education throughout the country. In the college system, students spend two years in college studying both content and methodology at the first and second year levels, before embarking on one year teaching practice in their third year of professional development. During the teaching practice period, trainees are expected to demonstrate knowledge in both content and methodology in their areas of specialization which includes Mathematics, Science and Technical skills under the guidance of a mentor. Tutors of the colleges go round to supervise and assess the performance of these trainees for their professional development. All the Colleges of Education are affiliated to the Institute of Education of the University of Cape Coast.

1.2 Statement of the problem

According to Hudson (2009), mentors are usually chosen by Teacher Education Institutions to not only mentor, but to model or coach beginning teachers as well. Mentoring in teacher education plays a very key role in the professional development of professional teachers. It requires "real-time" interactions. Cognizant of this, UEW appoints experienced mentors to mentor her students on internship in partnership schools. Even though Cobbold (2007) noted that Ghana is yet to have a formal educational policy on induction and mentoring for intern teachers, UEW has its own guidelines for mentors to follow.

Research has also shown that the kind of mentoring system employed by educational institutions has a great impact on the kind of teachers it produces. Barlin (2010), for

instance, holds the view that when mentors are well-selected, given good training, and given the time to work intensively with new teachers, they not only help average teachers become good, but good teachers become great. He is of the view that instructional-mentoring programmes will provide an antidote to ensuring that all students, regardless of their backgrounds, have the real opportunity to succeed. As new teachers are most often assigned to the poorest schools with the most challenging classrooms, instructional-mentoring programmes provide a powerful lever for closing the teacher-quality gap. He identifies finding the right teachers to be mentors, aligning instructional-support efforts, and partnering with principals as the three key factors that help ensure successful mentoring programmes. Although UEW appoints mentors supposed to be equipped with the requisite skills, Mavhunga (2004) laments the effectiveness that mentoring provides towards the development of professionally competent and reflective teachers. This he attributes to the lack of professional know-how of mentors. In spite of the critical role SIP plays in the development of professionally competent mathematics teachers, there is/are limited or no study that explored the mentoring activities of partnership schools and on interns' evaluation of mentoring experiences on their career development in Ghana. This tends to threaten the sustainability of the programme in teachers professional development.

1.3 Purpose of the study

This study was designed to explore: the mentoring activities UEW mathematics interns experience in partnership institutions, interns' evaluation of mentors' practices and how interns' mentoring experiences during their internship period impacted on their professional development. The study was also to elicit mathematics interns' views on

how the student internship programme in UEW can be improved.

1.4 Research Questions

The study was guided by the following questions:

1. What mentoring activities do mathematics interns of UEW experience during their SIP?
2. How do mathematics interns of UEW evaluate the professional competences of their mentors?
3. How does the mentorship experience of UEW mathematics interns shape their conception and vision of mathematics teaching and learning?
4. From interns' perspective, how can the SIP in UEW be improved to meet the professional development needs of graduate mathematics teachers?

1.5 Significance of the study

The importance of producing quality graduate mathematics teachers to handle mathematics effectively at all levels of education in Ghana cannot be underestimated. To achieve this, UEW as a teacher education institution, made it mandatory for her students to embark on an internship experience under the guidance of experienced teachers as mentors as part of their professional activity. This study was designed to explore the mentoring activities interns actually experience and how it contributes in shaping interns' conceptions of teaching. Results of the study will establish the grounds for teacher education institutions to make critical decisions on the duration and continuity or otherwise of the concept student internship programme for the development of competent professional teachers. Results of the study will also provide empirical data on ways the

SIP can be structured to maximize potential benefits for all stakeholders involved.

1.5 Delimitation

Even though the SIP of UEW is designed for all students; this study only focused on mathematics education students. The choice of mathematics department was based on what the researcher wanted to know, the purpose of the study, what made the study credible and usefulness of the resources available to the researcher (Patton, 2002). Though mentors, interns, partnership institution heads and university supervisors are all key participants of the internship programme, this study considered only views from interns on what they had to say about the programme. This was because interns are actually the link and main determinants of the success or otherwise of the internship programme.

1.6 Limitations

The study considered only mathematics students among the five departments in the Faculty of Science Education of the University of Education, Winneba. The results may be different if the same study is carried out on students outside the Science Faculty. This implies that the results of the study may not be easily generalizeable. The organization of the data collected was very demanding. It was quiet difficult to sieve all useful responses from the interview data into themes for presentation and analysis.

1.7 Organization of the study

The study is organized into five chapters. Chapter 1 discusses the background to the study, statement of the problem, research questions, and purpose of the study, significance of the

study, limitations, delimitations and organization of the study. Chapter 2 reviews some relevant literature of this study and discusses the theoretical framework. Chapter 3 describes the research methodology. This includes research design, population, sampling and sampling techniques, research instruments, procedures for gathering data and data analysis. Chapter 4 discusses the presentation of results and Chapter 5 looks at the discussions, summary of findings, conclusions and recommendations, and areas for further research.

CHAPTER 2

LITERATURE REVIEW

2.0 Overview

Research indicate that teachers are very critical in the development and prosperity of every country and for a country to triumph, then its education should hinge on quality and competent teaching force (Jahin & Alexander, 2006). This study uses Shulman (1986) knowledge domains as a theoretical framework to examine mentoring practices of mentors during intern teachers' internship experiences. This chapter reviews scholars' works on the following themes:

1. Theoretical framework
2. Teacher education
3. Internship
4. Mentoring
5. Role of mentors in pre-services teachers' professional development

2.1 Theoretical Framework

This study used Shulman (1986) knowledge domains as a theoretical framework. Shulman (1986) identified three knowledge domains as key elements needed by teachers to teach effectively: Subject Matter Content Knowledge (SMCK), Pedagogical Content knowledge (PCK) and Curricular Knowledge (CK).

2.1.1 Subject Matter Content Knowledge (SMCK)

According to Shulman (1986), SMCK is the actual amount of knowledge and

organization of that knowledge in the mind of the teacher. He is of the view that a teacher's subject matter content knowledge encompasses an understanding of facts and procedures, concepts and principles underpinning these concepts which can be classified as substantive and syntactic structures of subject matter content knowledge respectively.

Substantive structures refer to the ways through which concepts and principles of a discipline are organized to incorporate the facts embedded in it. It is therefore imperative that intern teachers grasp the concept and principles of teaching mathematics through interaction with their mentors during the internship experience. Through this interaction, interns do not only learn concepts but emulate how their mentors display and utilize this knowledge in their classroom dealings and practices.

Syntactic structures of a discipline on the other hand refers to ways in which validity or invalidity, truth or falsehood are established (Shulman, 1986). It describes the genuineness or falsehood exhibition of teaching characteristics of mentors during the internship period. This means that syntactic structure is used to identify appropriate teaching characteristics of mentors which will make the best impact on interns' learning to teach. The concept of teaching should therefore not be limited to how experienced teachers exhibit their teaching knowledge especially when intern teachers are with them in partnership schools but focus on professional practices which imbibe in interns, high professionalism and preparedness to deliver after the internship experience.

Intern teachers need to combine both substantive and syntactic structures to appreciate that in becoming a competent teacher, one does not need to only be able to decipher principles of teaching mathematics but also pay close attention to selecting the

appropriate and accurate delivery techniques in a manner that students will understand. This is further supported by Shulman (1986) cited in Chen and Wang (2013) who explained that the teaching knowledge of a teacher is the teachers' ability to teach students in respect of their interest and abilities which could include explaining, demonstrating, likening, and giving examples in a manner that will help the students to learn. Grossman, Wilson and Shulman (1986), cited in Chen and Wang (2013) also added that teachers with adequate teaching knowledge which encompasses content knowledge and teaching method, can effectively help students to understand the subject knowledge.

2.1.2 Pedagogical Content knowledge (PCK)

According to Shulman (1986), an understanding of what makes the learning of specific topics difficult or easy: the conceptions and preconceptions of students of different ages and backgrounds brought along to the learning constitute pedagogical content knowledge. For teachers to be effective, they need to understand the conceptions and preconceptions so as to serve as a guide in planning for learners since learners are not blank slates (Shulman, 1986). Teachers have the responsibility to organize teaching, design learning tasks, make use of adequate resources and understand determining factors in the teaching learning process (Ponte, 2011). In learning to become professional mathematics teachers therefore, interns need to be well grounded with various teaching techniques for various mathematics topics. Interns are most likely to build their pedagogy on what they observe from their mentors and mentors' guiding practices. PCK prepares intern teachers' cognitively to be aware of and fully armed with the needed professional skills to function in the field. It is very critical in determining the kind of teacher an intern will turn out to be. Interns who are mentored by well experienced teachers with very strong PCK in

mathematics are likely to cultivate interest for teaching the subject and will remain in the teaching field than those who do not get much PCK from their mentors. Ball, Hill and Bass (2005) in expanding Shulman (1986) knowledge domains, espoused the concept of mathematical knowledge for teaching (MKT), recognized that teachers need to have both subject matter knowledge and pedagogical content knowledge. They further proposed specialized content knowledge (SCK) which describes teachers' unique content knowledge required in mathematics teaching and helping students understand mathematics easily.

2.1.3 Curricular Knowledge (CK)

Curricular knowledge is the knowledge of instructional materials available for teaching various topics. In essence Shulman (1986) proposes that the important components of teachers' knowledge are what they know about the subject, about how learners think about the subject, and about instructional materials developed to teach the subject. Honby (2006) defines teaching as the act of showing students how to do something so that they will be able to do it by themselves and also making students think in different ways. CK thus suggest that for teachers to be effective, they need to be able to decide on which materials that will enhance students understanding. Teachers need to have command over the mathematics curriculum. This will guide them in the teaching learning process. CK serves as a guide in planning lessons, deciding on appropriate teaching materials and instructional methodologies geared at making learning easy for students. As interns observe their mentors teach during the internship period, they learn to emulate the innovative skills of their mentors in improvisation of teaching aids, variations of teaching methods to suit various topics and how mentors reorganize and link topics in the

mathematics curriculum to aid transfer of learning for students.

For interns to be adequately groomed during the internship programme therefore, to become professionally competent enough for the teaching field, they need to know how to harness their subject matter content knowledge with their pedagogical content knowledge for teaching mathematics in a manner that students will like the subject. However, the misconceptions that mathematics is difficult and the fear for the subject mathematics will not be corrected if mathematics interns, who are preparing for the teaching profession, are not grounded in mathematics knowledge for teaching.

2.2 Teacher Education

Since independence, Ghana has embarked on several educational reforms all geared at either arresting falling standards in her education or catching up with technological advancements in the world (MOE, 2007). Colley (2014) opined that there is a gap between teacher education policy and practice in Anglophone West Africa with Ghana among other African countries not been an exception. According to Anamuah-Mensah (2008), the underlying principle of teacher education in this our country was to provide teachers with better knowledge and skills, together with better incentives to use their knowledge and skills for the benefit of children through the creation of an accessible, integrated teacher education and training system which provides a structure for continuous professional development throughout their teaching careers. He further noted that the objective of teacher education in Ghana was the training and development of the right type of teacher who is competent, committed and dedicated.

With this objective of teacher education in Ghana in mind, the search for quality teachers

became the concern of well meaning Ghanaians. The quality of teachers has an impact on the future of every nation. For instance, in Zimbabwe, it was realised that poor teaching methods and bad teacher behaviour were the main causes of failure in mathematics (Tshabalala & Naube, 2013). They strongly recommended team teaching to help arrest the situation. In Ghana, Keteku (2010) identified causes of students' poor performance in mathematics to include insufficient contact hours for students to be taught sufficient concepts and constructs and for students to study and consolidate what is being taught, teachers' lack of motivation skills which would stimulate students interest in mathematics and incomplete syllabus were the issues of concern. He recommends teachers should adopt more humane class behaviour to help students improve on their performance. It is increasingly evident that the teacher is the pivot in any educational system. This perhaps accounts for the reason why McGee, (2010) holds the view that support given to new and aspiring teachers is very crucial in ensuring teacher retention.

In India, teacher education is geared towards encouraging an interactive and effective way of teaching where by teachers are able to motivate students to learn and also make learning interesting to students (Chennat, 2014). The teacher education institutions have different entry requirements depending on which level of schools one wishes to be trained to teach. For instance, while a pass in higher secondary examination is required of interns to be trained to teach in primary schools, post graduate degree in the particular subject area is the pre-requisite to be trained to teach at the secondary school level. Teacher education in India, just like in Ghana, is provided by universities and affiliated colleges. The training of teachers in that country is institution based with internship in real classroom environments. It takes three to five years of training to become a professional

teacher. Cognizant of the fact that meaningful internship and school experience are very vital in helping intern teachers to develop expertise needed for teaching, the Indian teacher education system adopted an internship model which stressed the need for the school internship design to consider selection subjects to be taught and classroom based projects among others.

Teacher education in Canada differs a bit in structure from that of India. Canada spends about 7% of its GDP on education (Statistics Canada, 2003). According to Chennat (2014), the Canadian education is structured in three parts: Elementary; (Primary and Middle schools), Secondary (High school) and Post secondary (College and University). The main media of instruction is English and French with the academic year between September and June. In that country, unlike India and Ghana, all teacher education programmes are university based under the supervision of Faculty of Education. Internship in Canada is between eight (8) to twenty two (22) weeks where school teachers must be inducted into the internship programme and trained to play the role of host teachers. In the view of the Canadian system, practicum is to serve as connection between theoretical and research based pedagogical concepts in both academic and actual practice for teaching. The key factors to promote deeper learning during their internship are its connectedness between field experience and learning, supervision, feedback and mentoring. In Canada, host teachers are required to support learning by connecting classroom experiences to theory through reflection aimed at assisting interns think about practice through questioning and feedback. Their educational system is generally broken down into pre-service phase (University based course work and School-based practicum) and in-service phase (induction and post induction).

Chennat (2014) noted that the educational system run in Finland was nothing to write home about until 1980 when the country suddenly rose to head of the global class in just a few decades. This transformation to the top flight where Finnish education is described as one of the best in the world is described as the Finnish Miracle. Research and experience suggest that one critical element of the Finnish system trumps all others: excellent teachers and leaders (Sahlberg, 2011). The teacher education in Finland strives on expertise and professional accountability of teachers who are knowledgeable and committed to their students and communities. The performance of their education is not assessed by how many students pass a test or examination as appears the case in Ghana. The performance is anchored on accountability to students and community. With this responsibility, it takes a masters degree to qualify to teach at the primary level or higher while graduate qualification is demanded to teach at the kindergarten and pre-primary levels. Sahlberg (2011) has it that, only about ten to fifteen percent of teachers leave the profession as many stay in it for a life time. The duration for their teacher education is five years broken down into basic teaching practice, advance teaching practice to final teaching practice.

The advantage of the education system in Finland is that schools have more staff with experienced mentors with adequate expertise in supervision, teacher development and assessment strategies, a situation Ghana may not be able to match up.

2.3 Internship

According to Ruthven (2001), craft knowledge is the professional knowledge teachers' use in their daily classroom teaching. It refers to the knowledge that informs what

teachers do in the classroom. He holds the view that teachers' craft knowledge plays a crucial part in converting scholarly knowledge into action and admits that there is knowledge creation in the course to teaching. It is however worth noting that teachers' knowledge for teaching cannot be disentangled from the classroom environment where such knowledge takes place (Ponte & Chapman, 2006). The significance of internship to the intern teacher cannot be overemphasized. Chennat (2014), for example, views school internship as a platform for interns to practice teaching in a broader context of their total development in becoming full time teachers. In his opinion, the internship programme allows the intern gain a deeper understanding of new perspectives, boost their moral to continue to not only learn, but also reflect on the task of teaching thereby developing their capacities and professional skills. On the other hand, Carl, Maertz, Stoebel and Marks (2014) hold the view that internships serve as transitional experiences from the university to the actual work place where interns are exposed to knowledge and skills related to their professions. They further enumerated that through spending time with mentors, internships do not only present interns with an opportunity to gain deeper knowledge about teaching, but they develop interest in teaching and can transfer that knowledge acquired during internship to take informed decisions on their career development as teachers. Thus, as long as Carl and his colleagues are concerned, internships are geared at helping interns plan well and succeed in their field of work. They added that internship projects make students more marketable and comfortable by helping them develop skills such as critical thinking and written and oral communication skills that many employers seek from new graduates. Cain (2009) identifies an ideal atmosphere for interns' learning during internship period to be one that is welcoming,

accepting and supportive. An internship for me is a period of exchange of ideas between a student and an experienced mentor aimed at testing theories learnt from school and connecting to the realities in the classroom environment. It is through internship that interns put to practice what they learnt from the university and also learn how to actually deliver the knowledge acquired in a manner that is understandable to learners.

The importance of internships cannot be overemphasized. Successful internships facilitate three aspects of a students' development: personal, professional and civic thereby improving their confidence levels and teaches student behavior, and test pedagogical knowledge base of interns (Sweitzer & King, 2009; Wambugu, Barmao & Ng'eno, 2013). An appreciable weave of usefulness of internship was arrived at by Arbaugh, Abell, Lannin, Volkmann and Boone (2007). They sought to understand the views on alternative certification from interns, their mentor teachers and university personnel concerning how various field experience structures could serve as a means to gain a deeper understanding of what it means to be a teacher. Their findings pointed to benefits to all participants of an internship: interns, mentors, heads of partnership schools and the university supervisor. Interns develop relationships with students, experience the scope of what teachers do across the year, see more content taught, and manage logistics with the on-campus programme, jobs and family. Views from mentor teachers were that interns benefit for being in the field on first day of school and during the first week to gain experience on setting the classroom tone for the year, chance to see the long-term organization of teaching over the year, good mentoring relationships with year-long interns, more mentors would be committed if they only had an intern for just one semester, mentors feel it's good to have their classes back for part of the year. The

University personnel held the view that a year-long internship helps interns to observe and understand student learning across the school year, interns would develop relationships within the school system, with principals, guidance counselors and other teachers.

Russell and Russell (2011) opined that the internship experience plays a pivotal role in not only shaping the beliefs of an intern teacher but shapes the knowledge of intern teachers as well. They are of the view that the internship programme gives interns opportunity to collaborate with their mentors in a professional learning atmosphere. Amedeker (2007) saw the internship programme in UEW to have the following implementation challenges: coping with large numbers of mentors involved, funding, and updating the supervisory skills of lecturers, strengthening on-campus teaching practice, developing materials such as handbooks for supervisors, mentors and interns, extra workload for mentors. He reiterated in that study that the spread of the internship through one academic year period gave lecturers ample time to plan their supervisions. His study however, did not state the views of interns and mentors about the student internship programme.

The importance of the student internship programme even goes beyond the period of internship. Boyd et al. (2009) observed that new teachers who graduate from internship programmes which employed experienced mentors to observe interns for not less than five times, recorded high student achievement in their first few years of teaching. Tuli and File (2010) observed that through internship experiences, interns understand the socio-cultural, political and economic factors which underpin teacher education. The internship gives firsthand experience to interns, and serves as the most valued component

of teacher education because it prepares interns to be thoughtful, reflective and inquiring.

2.3.1 Duration of internship

Even though many scholars (Carl, Maertz, Stoebel & Marks, 2014; Cain, 2009; Russell & Russell, 2011) see the student internship programme to be a viable medium for preservice teachers to encounter the realities in the classroom, there seem to be varying concerns on an appropriate duration of the internship that support student learning. Arbaugh, Abell, Lannin, Volkmann and Boone (2007) strongly hold the view that if the internship is one full year duration, it would provide interns the perfect chance to develop their pedagogical content knowledge in terms of assessment, content and conceptions about teaching. However, Amedeker (2007) observed that before UEW introduced the student internship programme, student interns embarked on four weeks teaching practice. This teaching practice was usually done in the final year of the students' training. The practice, he observed, however was not only ineffective for knowledge acquisition of the needed teaching skills by the students but was also inadequate. These he justified as part of reasons why the SIP was adopted by UEW. Chennat (2014) also strongly holds the view that for interns to be properly equipped with adequate expertise during the internship, then the internship should at least be of one year duration, interspersed with theory courses to allow for combination of field experience and course work.

2.3.2 Internship models

There are various internship models used by teacher education institutions the world over. Cognizant of the fact that meaningful internship and school experience are very vital in helping intern teachers to develop expertise needed for teaching; the Indian teacher

education system adopted an internship model as follows:

1. School Internship design should include the choice of selecting school subjects to be taught by an intern.
2. Four days a week for a minimum period of 12-20 weeks including one week of classroom observation of a regular teacher.
3. Visit to Innovative Centers of Pedagogy and Learning.
4. Classroom-based Research Projects.

Anamuah-Mensah (2008) observes three internship models in his study of the role of practicum in teacher education in Ghana. These were master-teacher model, the joint problem-solving model and the college or University supervision models respectively. In the master-teacher model, method lecturers and school based mentors with enough professional expertise serve as role models for interns to emulate. Teacher interns are supposed to learn from the attitudes and actions of these model persons. Mentors in partnership schools during internship period are those who model good teaching practices and help the interns to plan, teach and reflect on lessons (du Plessis, 2013; Barry & King, 2007). This modeling enables interns to refine their teaching skills and conceptions about teaching to knowing how to teach. Mentors guide interns to put into practice the principles of teaching which they would have learnt in the course of the internship. However, this model views interns as people without any professional skill at all which could be nurtured. The joint problem-solving model embodies the participation of interns, teacher educators and mentors in solving real life problems in the classroom without each initially knowing the solution to the problem. In the college or university supervision model, only the university or college staff has the sole responsibility to offer professional

guidance to the intern teacher. Even though it employs school environments for interns to practice, teachers in those schools see the presence of the interns as the rest period after all, the interns will be supervised solely by a university or college staff. An example of the university supervision model is the one used by the University of Cape Coast.

In the University of Education, Winneba, the internship programme is based on the Collaborative School Model (CSM) (SIP, 2009). This model is guided by some principles namely:

1. Having interns interact with a cohort of peers,
2. Encouraging professional development opportunities for mentors and
3. Encouraging interns to participate in a whole school experience.

The University of Education, Winneba combines in its CSM, aspects of the joint problem-solving models and the master-teacher models. During the internship period in UEW, interns are assigned to mentors who are expected to guide these interns professional development. University supervisors come mostly once to supervise these interns. Anamuah-Mensah (2008) opined that UEW introduced the IN-IN-IN- OUT programme because of the need for quality education in the schools. Through that programme, interns from the university spent three years on campus and one full year out for internship. The in-in-in-out model extended the 4 week teaching practice to forty weeks with the reason that it was found to be very critical to the development of competent teachers. Unfortunately, the situation in UEW has changed. The much talked about one year internship has been truncated to one semester thus casting doubts in the minds of both interns and partnership schools on the effectiveness of a one semester internship currently practiced by UEW.

2.4 Mentoring

Mentoring has been identified as having an important influence in professional development both at the public and private sector. It has gained attention and popularity as a powerful tool to enable the development of careers of those advancing through the ranks in all types of jobs. Mentoring is viewed as a nurturing relationship which is based on trust thereby promoting the development and professional growth of both the mentor and intern (Halai, 2006). Mentoring is most often defined as a professional relationship in which an experienced person (the mentor) assists another (the mentee) in developing specific skills and knowledge that will enhance the less-experienced person's professional and personal growth. He (2010) holds the view that the most important thing intern teachers need in the mentoring process is pedagogical and content knowledge guidance because mentoring is the main determinant of intern teachers' success in the teaching profession. However, according to Cobbold (2007), Ghana like most developing nations, has yet to establish a formal educational policy on induction and mentoring for beginning teachers. Ambrosetti and Dekkers (2010) observed that even though mentoring in professional work place context exist clarity about what mentoring is, who mentors and how it occurs is scarce (Lai, 2005; Hall, Draper, Smith & Bullough, 2008). To support this assertion is the view of Walkingston (2005) and Hudson (2004) that the implementation of mentoring in pre-service teacher education is illusive.

2.4.1 Effective Mentoring

Mentoring is too important to be left to chance (Ganser, 1996); yet mentoring expertise of teachers varies widely, which may present inequities for developing pre-service teachers'

practices. Additionally, Allen, Eby, O'Brien and Lentz (2007) have concerns about the appropriate mentoring methodology that is most suitable. Mentors are significant in shaping a pre-service teacher's practices. Developing common understandings about effective mentoring practices can assist the mentoring process (Hudson & Hudson, 2010). To ensure effective mentoring, the mentor's experience and pedagogical knowledge come to play. According to Russell and Russell (2011) teacher education institutions are supposed to select very experienced teachers to mentor their interns based on factors such as prior collaboration with partnership schools, the teacher's credentials, the availability and willingness to work with an intern. Also, mentors need to have adequate pedagogical knowledge to facilitate effective mentoring programmes (Zanting, Verloop & Vermunt, 2003).

The mentor's personal attributes for facilitating the mentoring process, mentoring on the essential education system requirements, the mentor's modeling of teaching practices, and the mentor's provision of quality feedback (Hudson & Hudson, 2010) are very crucial for effective mentoring. The mentor's personal attributes can aid towards instilling positive attitudes and confidence in the mentee (Beck & Kosnik, 2000). In addition, mentors' articulation of system requirements provides mentees with departmental directions for teaching (Lenton & Turner, 1999).

2.4.2 Types of Mentoring

Mentoring is often divided into two types, informal mentoring and formal mentoring (Buell, 2004). Informal mentoring relationship develops spontaneously and is not managed specifically as a mentoring relationship within larger organisations. This type of

relationships develops on their own, such as when a person approaches a possible mentor and that person agrees to form a mentoring relationship. This type of relationship might also develop when an established professional needs an early career professional to complete certain tasks within an organisation.

Formal mentoring relationships refer to assigned relationships, in which the organization oversees and guides the mentoring programme in order to promote mentees development. Wanberg, Welsh and Hezlett (2003) identified six primary characteristics of formal mentoring programmes that can directly influence the programme's effectiveness: programme objectives, selection of participants, matching of mentors and mentees, training for mentors and mentees, guidelines for frequency of meeting and a goal setting process. All these characteristics need to be considered to ensure that the ultimate aim of the relationship is achieved.

2.4.3 Stages of Mentoring

According to Manza and Patrick (2014), there are six stages of mentoring. These stages are:

Introductory Stage: during this time, the primary objective is for the mentor and mentee to get to know each other and begin establishing a sense of trust. Two things are especially important during this time. The mentor should let the mentee know that whatever he or she wants to share with the mentor will remain confidential. The mentor should involve the mentee in deciding how they will spend their time together.

Relationship-Building Stage: the primary objective during this time is to solidify a sense of trust and closeness between the mentor and the mentee. The mentor can expand the

mentee's range of experiences by going to museums, for example.

Growth Stage: here the mentor encourage and support the mentee's social, emotional, and cognitive growth. At this stage the mentee may share little problems that he or she is having, which gives the mentor a wonderful opportunity to guide him or her in developing problem-solving skills.

Maturation Stage: at this stage, the mentor knows the mentee quite well, but it is still important for the mentor to let the mentee take the lead in what they talk about or do. Working on life goals can be very productive at this stage.

Transition Stage: transitions happen for many reasons. The mentee may be getting older, his or her family may be moving or there may be nothing left to learn. If the relationship end is not accepted by both parties, this stage can be stressful with one party unwilling to accept the loss.

Termination: the final stage is when the relationship ends. Either the mentor or the mentee may initiate the termination, or life circumstance may lead to it. In many cases, mentors and mentees have worked together for many years and continue to stay in touch.

2.4.5 Benefits of Mentoring

Those with access to mentoring consistently are known to benefit from their involvement in these relationships (Murrell, 2007). Mentoring empowers people especially the youth. The benefits of mentoring are discussed below:

(a) *Talent Discovery*: Mentoring is said to provide mentees with the opportunity to develop their personal and professional selves through reflection (Walkington, 2005). A

good mentor teaches mentees to discover the talent in them. Achieving any goal or attaining any level in life comes with challenges, and these challenges tend to hamper the talents of mentees. A mentee who is brilliant in mathematics may have a challenge of shyness or stage fright, but with the help of a mentor he or she can overcome the challenge through constant practice and reflections. It will also enable the mentee have greater confidence in himself and his wellbeing. When the mentee is trained by the mentor for a period of the time, the gift in them will eventually stand out. This discovered gift may become a source of income for the mentee.

(b) *Skills Acquisition*: In many instances, it is assumed that if a teacher is considered to be an effective practitioner, they can pass on their skills and knowledge to another as a mentor. Mentoring takes into consideration the development of the relationship between the mentor and mentee, which in turn provides the underpinning for the growth of the mentee's skills (Ambrosetti, 2014). These skills help students who are young to excel in their studies or careers more than others. As well as assist them to develop leadership skills. Mentors who are skillful can always assist their mentees in their studies and careers. In general, research suggests that acting as a mentor enhances skill development (Jackling & McDowall, 2008) and that effective mentoring includes knowledge and skills (Bullough & Draper, 2004).

(c) *Crime Limitation*: Mentors empower their mentees to abstain from crime and other illegal activities. Unfortunately, some youth are so devoured by a life of crime, drugs and stubborn misguided mentality that they have absolutely no desire to lead positive or productive lives. When these young ones are mentored very well, it will reduce their rate of involvement in crimes. Through mentoring, people are taught the negative effects of

indulging in crimes. If mentoring is given the needed attention in the world, the rate of crimes in many countries may reduce.

(d*) Employment*: Mentees can get employed in their mentors' organisations. It is very easy for mentors to employ mentees or recommend them for job vacancies because they have known them for quite a period and they may have developed confidence in them. Mentoring can also enhance job creation in many areas and reduce unemployment.

To sum up, Hudson and Hudson (2010) citing Young (1995) stated that mentoring can lead mentees: to recognise their considerable expertise in teaching, to question their existing classroom practice, to attempt new arrangements which foster improved practice, and to acquire a more informed understanding of what they do, as well as the effects their decisions and actions have on pupils' learning.

2.4.6 Challenges of Mentoring

Although mentoring has enormous benefits, it also has some challenges. Below are the setbacks of mentoring.

1. Lack of confidence
2. Mentee too dependent on mentor
3. Resentment and even gossip about relationship from others
4. Lack of time and commitment
5. Mentor not having enough experience or knowledge to give real practical help
6. Mentor instructing and criticising mentee rather than helping them on negotiated basis
7. Mismatching mentors and mentees

2.5 Role of mentors

Jacobi (1991) as cited in Russell and Russell (2011) in his study of mentoring in education identified three main categories of the mentors' role in nurturing intern teachers. These categories included personal support, role modeling and professional development. Halai, (2006) stated that the basic role of the mentor is to provide guidance and emotional support to the novice teacher who is in need of significant support. Furthermore, Wang and Odell (2002), after conducting several review of literature on the role mentors are expected to play with regards to standards-based learning, identified four expectations of mentors notably:

1. Mentors need to guide and support novice teachers to pose questions about current teaching practices to uncover the assumptions underlying curriculum and practices and encourage them to reconstruct curriculum and practices to suit the teaching contexts in which they find themselves.

2. Mentors are encouraged to assist novices in developing mastery of subject matter, and connect subject matter knowledge to meet the needs of diverse linguistic and cultural populations.

3. In the current climate of the standards-based movement, student teaching should not be reduced to the singular focus of developing specific teaching techniques and procedures, but to develop a strong understanding of the relationship between teaching principles and practice

4. Finally, mentors will not simply impart teaching knowledge to novices, but that teaching knowledge would be achieved as a product of inquiry and reflection about

one's own teaching. Novices need to be guided to discover knowledge rather than be imparted with it.

According to He (2010), mentors play multiple roles and are expected to meet certain expectations of interns. So if mentors do not live up to expectations, it affects their relation with intern teachers (Bullough & Draper, 2004). Furthermore, Duah (2011), in his study to fill the gap in mentoring research in England, proposed a five factor model of mentoring as Personal attributes, system requirements (school/national policies, curriculum documents), pedagogical knowledge (focus on planning, timetabling, preparation, implementation, classroom management strategies, teaching strategies), Modeling (display enthusiasm for teaching the subject), and Feedback. They recommended further research on training of mentors' practices in regard to national curriculum and school policies. Weasmer and Woods (2003) shared the view that the likelihood of intern teachers to model their mentors is very high in a mentoring environment. Teachers' expertise is usually considered a function of their experience.

Keengwe and Adjei-Boateng (2012) looked at the experiences of beginning teachers in Ghana with focus on challenges, induction process and support available for them and any need for policy on induction and mentoring. They came out with the following findings: workload heavier and more difficult, new teachers are given classes that experienced teachers refused to pick, classroom management issues; disrespectful students, noisy, less attentive, rude and insubordinate, class size, inadequate furniture, lack of effective assessment due to large class, individual difference among students. They added that there was no formal orientation, no beginning teacher induction programme for schools, nothing like mentorship for beginning teachers in their schools.

Tok and Yilmaz (2011) also found that intern teachers were not pleased with mentors' guidance activities. The interns contended that they wanted their mentors to share their experiences and that they should be understanding and tolerant. Furthermore, Ross, Vescio, Tricario, and Short (2011), identified guidance in good lesson planning, classroom management, making professional decisions, and teaching interns school routine procedures as the best induction interns need from mentors. For effective mentoring to take place, institutions must select mentors who have the time and desire to work with interns, provide opportunities for interns to observe their teaching and vice versa and employ modeling to help intern teachers learn useful teaching skills. The demands of the UEW student Internship programme are therefore not out of place.

Russell and Russell (2011) came to the conclusion that mentors understood their roles in facilitating the internship programme. These roles were to provide guide and support a dependable friend. Their conclusion was in consonance with other studies (Halai, 2006; Iancu-Haddad & Oplatka, 2009). However, Lin (2007) opined that mentors in Taiwan lack the skills to effectively mentor teachers to improve the quality of teaching thereby leading to low student achievement in the country.

Russell and Russell (2011) identified six characteristics of mentors which they described as key traits namely, a) mentors' willingness to share knowledge, (b) competency, (c) willingness to facilitate growth, (d) honesty, (e) willingness to give critical, positive, and constructive feedback, and (f) ability to deal directly with the intern. By combining these characteristics, efforts should be made by the host teacher education programme to make the student internship experience more rewarding and productive for all involved. Again, Cherian (2007) examined the experiences of novice teachers to determine the contextual,

conceptual and relational aspects of student teaching that support their learning. He found that most novice teachers felt that the key to student teaching is a caring associate (open-hearted because they want you to be in their class and open-minded to accepting the kind of person you are and the teacher you want to become). This helped in dealing with classroom management, lesson planning, and the anxieties of being evaluated during the practicum. Olowu (2011) looking at mentoring: a key issue in human resource management identified that, mentors benefited through increased motivation, challenge, new insights, self-development and role modeling. He however observed that mismatch between mentor and mentee, time, unrealistic expectations and communication could be barriers to mentors functioning properly during the internship period. However, Leikin and Zazkis (2007) stated that it is evident that students learn from their practice in general and, in particular, teachers learn from their teaching, what exactly is being learned is often not evident.

2.6 Summary

Teachers are the bedrock of every country's education. Even though there has been several education reforms in Ghana; Colley (2014) observed that there was lack of connection between policy and practice in Ghana. The reforms, informed by the search for quality teachers necessitated the introduction of the student internship programme by Teacher Education Institutions. The internship programme provides a platform for interns to practice teaching in the context of their total professional development. It is a transitional experience between university course work and actual field experience (Carl, Maertz, Stoebel & Marks, 2014). Cain (2009) identifies with welcoming, accepting and supportive characteristics as the best atmosphere during internship for interns to learn.

The literature calls for one full year duration of internship programme. This will provide interns the chance to develop their pedagogical content knowledge in assessment, content and conceptions about teaching (Arbaugh, Abell, Lannin, Volkmann & Boone, 2007).

Mentoring is viewed as a nurturing relationship based on trust, and geared towards promoting the development and professional growth of both mentor and intern (Halai, 2006). The literature has it that the most important thing interns need during mentoring is pedagogical and content knowledge guidance. This is because mentoring is the main determinant of intern teachers' success in the teaching profession. To ensure effective mentoring, mentors' experience and pedagogical knowledge is very important. Two types of mentoring were identified namely: informal and formal mentoring. Six stages of mentoring were also identified by the literature. These included: Introductory, Relationship-Building, Growth, Maturation, Transition and Termination stages respectively. Benefits of mentoring identified include: Talent discovery, Skills acquisition, Crime limitation, and Employment. Some challenges of mentoring which were identified were Lack of confidence, Mentee too dependent on mentor, Resentment and even gossip about relationship from others, Lack of time and commitment, Mentor not having enough experience or knowledge to give real practical help, Mentor instructing and criticizing mentee rather than helping them on negotiated basis and Mismatching mentors and mentees. The literature identified some roles of mentors to include personal support, role modeling and professional development.

CHAPTER 3

METHODOLOGY

3.0 Overview

The study was designed to explore the mentoring activities UEW mathematics interns experienced during their student internship programme. It was also to examine how interns' evaluated their mentors and the interns' views on how their internship experiences shaped their conception and vision of teaching and learning mathematics. The study further sought the views of mathematics interns on how to improve the student internship programme of UEW. This chapter presents the research procedures namely: research design, population, sample and sampling procedures, research instruments, data collection procedure, data analysis procedures and ethical considerations employed in the study.

3.1 Research Design

Exploring the mentoring activities of mentors and students views of their mentoring experiences require the collection of both quantitative and qualitative data. Creswell (2009) presents survey as a research design that collects both data. A survey describes trends, attitudes, or opinions of a population by studying a sample of that population. It can take the form of a short paper-and-pencil feedback or an intensive one-on-one in-depth interview (Trochim, 2006), that yields quantitative and qualitative data. The survey design is useful in describing the characteristics of a large population. According to Wyse (2012), surveys are relatively easy to administer. They can be developed in less time as

compared to other data collection methods, and are capable of collecting data from a large number of respondents. Also, with surveys, numerous questions can be asked about a subject, giving extensive flexibility in data analysis. With the use of survey software, statistical techniques can be utilized to analyze the data to determine validity, reliability, and statistical significance, including the ability to analyze multiple variables. Wyse (2012) however, hints that the reliability of survey results may depend on the respondents' willingness to provide accurate and honest answers, as some may not even feel comfortable providing answers that present themselves in an unfavorable manner. Notwithstanding the weakness of surveys, the survey design was used because its advantages in this study outweigh the disadvantages. It was not only easier to develop and administer but also numerous questions in different dimensions were asked about the mentorship in this study and thereby allowed flexibility in data collection and analysis.

3.2 Population

The study sought to find out the mentoring activities mathematics interns of UEW go through in partnership institutions during the SIP, allow interns to evaluate their mentors and to get firsthand information about mentorship experiences of intern's and its impact on interns' professional development in mathematics education. The population was all interns in the mathematics education department. Data available from the Mathematics Education department, UEW, indicate that there were one hundred and fifty eight (158) interns for the 2014/2015 academic year. This comprised of ten (10) females and One hundred and forty eight (148) males.

3.3 Sample and Sampling Procedures

Sampling is described as the process of selecting a portion of the population to represent the entire population (Alhassan, 2006). In order to get a holistic picture of the interns' experiences in the process of learning how to teach, One hundred and fifty eight (158) interns from the Mathematics Education department were purposively sampled for the study. Out of this sample, five interns (three males and two females) were selected for interview. Purposive sampling is a form of non-probability sampling in which participants are chosen based on their specialist knowledge of the research issue, or capacity and willingness to participate in the research (Oliver, 2006) and allows the researcher the opportunity to reach those participants with very high experiences geared at collecting useful information for a deeper understanding much quickly (Creswell, 2003). Purposive sampling gave the researcher the chance to select participants with the right expertise suitable for the study.

3.4 Research Instruments

Exploring the state of mentoring interns and ascertaining the views of people require both qualitative and quantitative data. This study was conducted on the 2014/2015 academic year mathematics interns group and the researcher wanted to gather opinions of interns who were located in different parts of the country. Questionnaire and interviews with an interview guide were used for data collection. A questionnaire is a written document in survey research that has a set of questions for respondents (Neuman, 2003). Questionnaires are cheap to administer and do not require as much effort from the researcher as compared to other data collection instruments. They often have

standardized answers that make it simple to compile data. Even though questionnaires are limited by the fact that respondents must be able to read the questions and respond to them, the study was conducted on university students who could read and understand. According to Thomas (2003), questionnaires are used to collect data because (1) large quantity of data can be collected in a relatively short period of time, (2) a wide variety of information can be obtained from participants, particularly if the questions are multiple-choice and (3) data can be collected from participants in distant places and in the absence of the researcher.

Creswell (2009) describes an interview as an investigative instrument involving interaction between a researcher and a respondent in which specific answers are sought by verbally questioning the respondent. An interview allows the researcher to learn about the experiences of others and make meaning from those experiences. According to McNamara (2009), the strength of the general interview guide approach is its ability to ensure that the same general areas of information are collected from each interviewee. This provides more focus than the conversational approach, but still allows a degree of freedom and adaptability in getting information from the interview.

3.4.1 The Questionnaire

The questionnaire was made up of two parts: Part I and II. The questionnaire designed to find out from interns, if mentors practiced the mentoring activities as stipulated in the University's Internship Handbook. It also provided space for interns to evaluate their mentors professoal competences and the internship programme in general.

Part I, made up of three (3) items, collected personal information of participants. (Gender,

region of internship, category of partnership school). As the student internship programme is designed to foster the development of a professional learning community where everyone involved can benefit through collaboration, cross fertilization and reflection (SIP, 2009), this information provided a fair idea of the distribution of mathematics interns in the ten regions of Ghana (See Tables 1 and 2).

Part II was further divided into three sections (A, B, C). Section "A" with six items, was structured to gather information on mentoring activities. Data from these items was used to answer research question one (1). Items four (4) to nine (9) explored the mentoring activities UEW mathematics interns went through during the SIP. The items elicited the induction practices including orientation, observation and discussions before and after observation. Section "B", consisting of twelve items, were designed to solicit the views of interns on evaluation of their mentors' characteristics. Items ten (10) to twenty one (21) were actually designed to allow interns to evaluate their mentors during the internship period. Interns' response to mentoring practices provided in-depth information about what really took place in the partnership institutions. The information was used to address the second research question. Section "C", which was made up of twelve items [twenty-two (22) to thirty three (33)], gathered data on interns' mentorship experiences and how it shaped their conception of teaching mathematics. This was used to answer research question three (3) (See appendix A for sample of the questionnaire). The intern's questionnaire was made up of thirty-three (33) closed-ended questions developed from the Student Internship Handbook, 2009 of the University of Education, Winneba and some items adapted from a similar study conducted in South Africa by Ngeope (2014) on mentoring students during field experiences.

3.4.2 Interview

An interview is a conversation between two or more people where questions are asked by the interviewer aimed at eliciting facts from the respondent. Interviews can broadly be qualitative or quantitative in nature. Blackstone (2012) says qualitative interviews, often referred to as intensive or in-depth interviews are semi-structured interviews where questions are open-ended and may not be asked in exactly the same way or in exactly the same order to each and every respondent. The main aim of this type of interview is to hear respondents' thought about a topic in the respondent's own words. She noted that in conducting qualitative interviews, the researcher uses an interview guide which is a list of questions or topics that the interviewer hopes to cover during the course of an interview. This kind of interview does not only allow respondents to share information in their own words but is also useful in gathering detailed information about a topic. However, it could be time consuming and depends on respondents' accuracy in giving information.

Blackstone (2012) further describes quantitative interview as a kind of interview where questions and answers are read to respondents. The questions asked are usually closed-ended. Interview schedules are usually used in quantitative interview which contains a set of questions and answers asked in the same manner to every respondent. In this study, the semi-structured interview (see appendix B) was used. Kusi (2012) describes semi-structured interviews as flexible, and allow interviewees the chance to express their views, feelings and experiences freely and the interviewer has the freedom to divert from the questions set to guide the interview process and seek clarifications using probe. I used a set of questions to guide the interviews. I conducted the interviews personally on one-on-one bases. All interviews were recorded with the consent of the participants for onward

transcription. The interview data was used to mainly answer research question four (4) even though there were some responses which supported the other research questions.

3.5 Validity

According to Awanta and Asiedu-Addo (2008), validity is the ability of a questionnaire to gather information on the concepts it claims to be measuring. Radhakrishna (2007) on the other hand, view validity as the amount of systematic or built-in measurement error and the development of a valid and reliable questionnaire is a must to reduce this measurement error. Awanta and Asiedu-Addo (2008) advised that where quantitative data is collected via questionnaires, great care needs to be taken to make sure the process is free from bias as possible.

Cohen, Manion and Morrison (2007), identified different types of validity to include: construct validity and content validity. They also hold the view that to demonstrate content validity the instrument must show that it fairly and comprehensively covers the domain or items that it purports to cover. The validity of a research instrument is determined by how well it measures the concept(s) it is intended to measure (Awanta & Asiedu-Addo, 2008; Ruland, Bakken & Roislien, 2007). Therefore to ensure content validity, the expertise of my supervisor was sought before the questionnaire was used for the actual data collection.

3.6 Reliability

Reliability concerns the degree to which an experiment, test, or any measuring procedure yields the same results on repeated trials (Ruland, Bakken, & Roislien, 2007). The questionnaire was piloted among some Basic Education department students who taught

mathematics during their internship period. This was to avoid inconsistencies and ambiguities. Some items were removed. For instance, in the original questionnaire, district was an item, but was later removed because the region of internship was found to collect enough useful information on the location of the interns The cronbach alpha coefficient for the questionnaire after pilot testing was calculated as .89 using SPSS version 20. According to Ary, Lucy and Asghar (2002), if the reliability coefficients are to be used for making a decision for research purposes, then scores with modest reliability coefficient in the range of .50 to .60 may be accepted. Therefore the coefficient of .89 was indicative that the questionnaire was reliable.

3.7 Trustworthiness of the interview

Trustworthiness can be thought of as the ways in which qualitative researchers ensure that credibility, transferability, dependability and confirmability are evident in their research (Given & Saumure, 2013).

3.7.1 Credibility

A credible study is a study where the researchers have accurately and richly described the phenomenon in question (Given & Saumure, 2013). With credibility in focus, the qualitative researcher's aim at ensuring that the data collected with the research instrument is accurately represented. Credibility is parallel to internal validity in quantitative study. To ensure credibility of the findings of the study, transcriptions of interviews were given back to interviewees to check if what was transcribed was a true reflection of their responses. They were allowed to offer comments on whether or not they felt the data were interpreted in such a way that reflected what they described in the

interview as their experience during the one semester internship.

3.7.2 Transferability

Transferability reflects the need to be aware of and to describe the scope of one's qualitative study so that its applicability to different contexts (broad or narrow) and can be readily discerned (Given & Saumure, 2013). This implies that for a study to be worthy depends on how well other researchers can determine (through a paper trail) to which alternative context the findings might be applied.

According to Merriam (1998), thick description, which is suitable in ensuring transferability, is a detailed description of a phenomenon which combines the researcher's interpretations with the observed context and processes. Kuzel and Like (1991) describe thick description as the act of providing a vivid explanation of methods and procedures followed during and after data collection. I used thick descriptions to substantiate and illustrate assertions made by individual participants to illuminate the contexts. I discussed thoroughly the research methods and procedures I followed during and after data collection.

3.7.3 Dependability

Dependability refers to the practice where the researcher lays out his or her procedure and research instruments in such a way that others can attempt to collect data in similar conditions. If similar conditions are applied, then similar explanations for a phenomenon should be found (Given & Saumure, 2013). In this study, the research methods and data analysis were thoroughly vetted by my supervisor who has enough expertise in qualitative research. His suggestions guided me in carrying out this study; therefore,

forming the basis for the dependability of the research methods and data analyses procedures respectively.

3.7.4 Confirmability

Confirmability is a measure of ensuring that the interpretations and findings match the data (Given & Saumure, 2013). This implies that no claims or conclusions should be made which is not supported by the data. Confirmability is synonymous to objectivity which is the extent to which a researcher is aware of or accounts for individual bias or subjectivity. In an objective study, the data is considered to be unbiased. To check confirmability in this study, the researcher used interviews to minimize instruments' bias and my research methods were also scrutinized by my supervisor who is an expert in qualitative research.

3.8 Data Collection Procedure

3.8.1 Piloting the questionnaire

Awanta and Asiedu-Addo (2008) advised that, anytime a questionnaire is used for data collection, it runs the risk of bias if care is not taken. Therefore to curtail this bias, the questionnaire should be tested. Based on this advice, the research questionnaire was piloted on twenty five (25) Basic Education interns who taught mathematics during their one semester internship period. The Basic Education students were used because they also taught mathematics during the one semester internship programme and therefore had the relevant experience to respond to the questions on the questionnaire. After the pilot study, some items were changed to reflect the focus of the study while others were removed completely. Again, items eight (8) and nine (9) were originally not put in tabular

form. As a result, some students did not see them to respond to therefore, those two items were put into tabular form which contained items four to nine.

3.8.2 Administration of the questionnaire

During the eighth semester, students returned to campus to take some taught courses and present teaching portfolios among others. The mathematics students were put into four groups with each group having a leader referred to as course representative. I met and explained the purpose of the study to the various course representatives. This was after I had met and explained the purpose of the study and sought permission from the Head of Department for the interns to participate in the study. Subsequently, the questionnaire was administered to the one hundred and fifty eight (158) mathematics interns of 2014/15 year group. The questionnaire was given to them personally by the researcher after their lecture periods. I also solicited the cooperation of interns in the study by informing them about the purpose of the study and assured them of confidentiality. It took a month to administer and retrieve the questionnaires from respondents. Out of the total number 158 questionnaires administered, one hundred and thirty four (134) were retrieved. This represented 84.8 % response rate.

3.8.3 Conducting Interviews

During collection of the questionnaire, interns were asked if they were willing to be interviewed. Five (5) interns were selected at random. Out of this number, three (3) were males and two females (2). In conducting the interviews, I contacted interns personally and arranged with them the venues and times that were suitable for each one of them. The interviews were conducted on different days and venues. The first interview was carried

out at the Amphi Theater. The second interview was conducted in a lecture hall, L1 at a time when there was no lecture. This was to have a serene environment where there would not be any interference of the interview process. The third interview took place inside the Graduate reading room section of the Osagyefo library. This was to control outside interference. The last two interviews took place inside SR 17, a lecture hall but on different days. Each interview lasted between 16 to 25 minutes. The researcher recorded all interviews. The interviews were conducted between March and May 2015.

3.9 Data Analysis Procedures

Both quantitative and qualitative data were collected from the instruments. Consequently, the analysis of the data took two approaches: quantitative and qualitative data analyses.

The responses from the questionnaire items were analyzed using IBM SPSS Statistics software version 20.0. The researcher used SPSS to find frequencies and percentages. The results of the analyses were presented using frequency tables and percentages.

The qualitative data collected through the interviews were transcribed by listening to playback of the recordings and writing down all questions and responses for each of the interviewees. The transcribed text was read several times to gain in-depth understanding of participants' responses. Some themes were identified that were relevant to the focus of the study. These themes guided the analysis of the qualitative data.

3.10 Ethics

Kusi (2012) opines that in educational research, ethics are the issues that are related to how the researchers conduct themselves or their practices and the consequences of these

on the participants in the research. The study was conducted at a time when UEW final year students had returned to campus from various partnership institutions where the interns embarked on the one semester student internship programme. The researcher then obtained permission from the Head of Department of Mathematics Education to conduct the study with the mathematics interns. Permission was also sought from lecturers who taught the interns during the post-internship period. Before I administered the questionnaire, I told the interns the purpose of the study and assured them that it was purely for academic purposes. The interns were further assured of anonymity and confidentiality. Each participant was assured that their participation in this study was purely voluntary and as such had the free will to withdraw without any consequence at any time in the course of the study.

CHAPTER 4

RESULTS

4.0 Overview

The study explored the mentoring activities provided for mathematics interns during their internship programme, interns' evaluation of their mentors' practices and how mentorship experiences shape interns' conceptions and vision of mathematics education as well as how the SIP can be improved.

A total of One hundred and fifty eight (148 males and 10 females) were surveyed through a questionnaire and interviews. Out of the 158 questionnaire administered to the 2014/2015 mathematics interns, 134, representing a response rate of 84.8% were returned. The quantitative data from the questionnaire were analyzed using descriptive statistics while thematic analyses were applied to the qualitative data. This chapter presents the results of the study using tables and thematic analysis.

4.1 The Questionnaire

The results from the questionnaire are presented under the following subheadings:

1. Distribution of interns to partnership schools
2. Distribution of interns at various levels of education
3. Mentoring activities experienced by UEW mathematics interns
4. Interns' evaluation of mentors' professional competences
5. Mentors practices experienced by interns which shape their conception and vision of teaching mathematics

4.1.1 Distribution of interns to partnership schools

The student internship programme of UEW established partnership with institutions across the country thereby giving interns the free will to choose which region to undertake their internship. This gives all regions of this country equal opportunity to benefit from student teachers who will share their knowledge acquired in school with their colleagues in these partnership institutions. Questionnaire item 2 was therefore designed to gather data to understand the distribution of interns across partnership schools in Ghana. Table 1 below gave a fair idea of the regional distribution of mathematics interns.

Table 1: Distribution of interns by Regions

Region	Frequency	Percentage
Upper East	3	2.2
Upper West	4	3.0
Northern	11	8.2
BrongAhafo	20	14.9
Asante	28	20.9
Eastern	4	3.0
Volta	22	16.4
Western	13	9.7
Greater Accra	14	10.4
Central	15	11.2
Total	134	100.0

Table 1 above demonstrates that interns covered all regions in the country and majority of the mathematics interns went to the Asante region 28 (29.9%) for their internship. Quite a number of interns went to the Volta 22(16.4%) with only three (3) interns representing

2.2% going to the Upper East region.

4.1.2 Distribution of interns at various levels of education

Even though UEW prepares students for all levels of schools in this country; much of the content taught and learnt by interns is usually suitable for pre-tertiary level; mostly from SHS and below though some interns find themselves in Colleges of Education or even the Polytechnics. Responses from the questionnaire item (3) indicated that majority of interns went to SHS for their internship. This perhaps is because the content learnt was most suitable for the Senior High school. The distribution of interns across the three possible levels is as in Table 2 below:

Table 2*:* Distribution of interns in various levels of schools

	Frequency	Percentage
JHS	6	4.5
SHS	117	87.3
College of Education	11	8.2
Total	134	100

Table 4.2 above shows that many of the mathematics interns, 117(87.3%) went to various Senior High Schools for their one semester internship programme. An appreciable number 11(8.2%) went to Colleges of Education with only 6(4.5%) going to the JHS.

4.1.3 Mentoring Activities Experienced by UEW mathematics interns

By the provision in UEW Student Internship handbook (2009), the intern is to assume an increasing degree of responsibility in a real classroom under the supervision and guidance

of a qualified mentor. To explore the mentoring activities during the period of internship, interns were asked to respond to a set of Likert-type items that described the kind of mentoring they experienced as compared to what was contained in the university guidelines for mentoring. They were to indicate whether they, strongly Agree (SA), Agree (A), Slightly Disagree (SLD), Disagree (D), or Strongly Disagree (SD) to statements that demanded some attention. The results of their responses are as in Table 3 below:

Table 3: Mentoring Activities Experienced by UEW mathematics interns

Questions	SD N (%)	D N (%)	SLD N (%)	A N (%)	SA N (%)
My mentor gave me an orientation of the essential routines and policies of the school	16(11.9)	6(4.5)	4(3.0)	63(47.0)	45(33.6)
My mentor allowed me to observe his/her lessons for at least two weeks before I started teaching	22(16.4)	19(14.2)	10(7.5)	31(23.1)	52(38.8)
My mentor engaged me in pre-observation discussion to clarify the focus of the lesson, the learning objectives and teaching strategies to be used	17(12.7)	16(11.9)	8(6.0)	59(44.0)	34(25.0)
My mentor engaged me in post-observation discussion to evaluate collaboratively the learning outcomes	7(5.2)	18(13.4)	8(6.0)	57(42.5)	44(32.8)
My mentor vetted my lesson plans before I used them	4(3.0)	3(2.2)	36(26.9)	72(53.7)	19(14.2)
My mentor observed my lessons at least five times during my internship period	34(25.4)	12(9.0)	41(30.6)	36(26.9)	11(8.2)

Table 3 above shows that majority of the mathematics interns held the view that their mentors gave them orientation on the essential routines and policies of the school. This is shown with 63(47.0%) agreeing and 45(33.6%) strongly agreeing to the statement. However, quiet a significant number 16(11.9%) strongly disagreed with the assertion above on orientation. Again, as high as 52(38.8%) of the students strongly agreed that they observed their mentors teach for at least two weeks before they started full teaching themselves. However, 22(16.4%) and 19(14.2%) interns strongly disagreed and disagreed with the statement on observing their mentors for two weeks before starting to teach. In addition, 7.5 percent, which represents 10 of the interns slightly disagreed with the statement. 59(44.0%) interns agreed that mentors engaged them in pre-observation with up to 34 of them representing 25.0% strongly agreeing that mentors carried out that activity. Only a cumulative 41 of the interns slightly disagreed, disagreed or strongly disagreed that the activity was practiced by mentors. This gives a combined percentage of (30.6%).

Another key activity expected of mentors is post-observation discussion. Interns' responses to this activity were quiet revealing. Fifty seven interns representing 42.5 percent agreed that the activity was helpful. An equal high number, 44 and percentage, 32.8, strongly agreed with only eighteen (13.4%) and seven (5.2%) disagreeing and strongly disagreeing respectively.

On the issue of mentors vetting lesson plans before interns used them to teach, 72(53.7%) agreed that their mentors carried out that activity, with 19(14.2%) strongly agreeing to the assertion. However, 36 interns, representing 26.9 percent slightly disagreed with 3(2.2%) and 4(3.0%) disagreeing and strongly disagreeing to the statement. Again, 34 (25.4%) of

the students strongly disagreed with the statement that their mentors observed their lessons at least five times during the internship programme. Furthermore, 41 and 12 of them slightly disagreed and disagreed respectively. These gave 30.6% and 9.0% respectively. Nonetheless, 36 (26.9%) of them agreed that mentors observe their lessons during the period with 11 (8.2%) interns choosing strongly agreed. This is an indication that partnership institutions prepared their mentors to receive interns and induct them into the internship programme (as in the interview.)

To infer, it stands out that majority of the interns agreed that their mentors gave them orientation on essential school routines and policies, they had the opportunity to observe their mentors teach before they (interns) actually started teaching, and that mentors indeed engaged them in both pre-observation and post-observation discussions. Even though it came up that mentors vetted interns' lesson notes regularly, the same cannot be confirmed about mentors observing interns teach. This is manifested in a significant percentage of the interns 34(25.4%) indicating that mentors did not observe their lessons within the internship period.

4.1.4 Interns' evaluation of mentors' professional competences

Cain (2009) identifies an ideal atmosphere for interns' learning during internship period to be one that is welcoming, accepting and supportive. To ascertain the kind of atmosphere interns encountered during the internship period, it is most appropriate to allow the interns' to assess their mentors. Table 4 therefore displays how interns evaluated their mentors during the internship period.

Table 4: Interns' evaluation of mentors' professional competences

Questions	SD N (%)	D N (%)	SLD N (%)	A N (%)	SA N (%)
My mentor was accessible at all times	1(0.7)	7(5.2)	6(4.5)	69(51.5)	51(38.1)
My mentor demonstrated professional integrity	4(3.0)	7(5.2)	8(6.0)	50(37.3)	65(48.5)
My mentor demonstrated content expertise in my area of need	6(4.5)	2(1.5)	10(7.5)	57(42.5)	59(44.0)
My mentor was approachable	2(1.5)	5(3.7)	1(0.7)	33(24.6)	93(69.4)
My mentor was supportive and encouraging	4(3.0)	2(1.5)	5(3.7)	52(38.8)	71(53.0)
My mentor provided constructive and useful critiques of my work.	1(0.7)	5(3.7)	21(15.7)	69(51.5)	38(28.4)
My mentor motivated me to improve my work product	3(2.2)	6(4.5)	16(11.9)	60(44.8)	49(36.6)
My mentor was helpful in providing direction and guidance on professional issues (e.g. dealing with difficult students)	4(3.0)	7(5.2)	6(4.5)	74(55.2)	43(32.1)
My mentor answered my questions satisfactorily (e.g. timely response, clear, comprehensive)	3(2.2)	5(3.7)	4(3.0)	77(57.5)	45(33.6)
My mentor acknowledged my contributions appropriately	3(2.2)	3(2.2)	8(6.0)	58(43.3)	62(46.3)
My mentor suggested appropriate resources (e.g. experts, electronic contacts, source materials)	8(6.0)	24(17.9)	22(16.4)	61(45.5)	19(14.2)
My mentor challenged me to extend my ability	12(9.0)	21(15.7)	20(14.9)	57(42.5)	24(17.9)

When interns were asked to evaluate their mentors' professional competences during the internship period, 69 (51.5%) of them attested to the fact that their mentors were

accessible at all times with 51 (38.1%) strongly agreeing to the statement. Only 6 (4.5%) interns slightly disagreed with 7, representing 5.2% disagreeing with the statement. Again, 65 interns, representing 48.5 percent strongly agreed that mentors demonstrated professional integrity. An equally high number, 50 (37.3%) agreed with the view but only a combined 19 (14.2%) interns either slightly disagreeing, disagree or strongly disagree to the statement. 59 (44.0%) alluded to the fact that mentors demonstrated content expertise in their area of need with 57 (42.5%) of them agreeing to the statement on expertise of mentors. 10 interns slightly disagreed, 2 disagreed and 6 strongly disagreed with the statement. These had percentage recordings of 7.5, 1.5 and 4.5 respectively. As many as 93 interns strongly agreed to the statement "My mentor was approachable". This represented 69.4% of the total number of interns who answered the questionnaire. 33(24.6%) agreed with the statement with only a total of 8(5.9%) interns answering in the negative.

A substantial number 71(53.0%) of interns in evaluating their mentors strongly agreed that mentors were very supportive and encouraging. 52(38.8%) agreed to the statement while 5(3.7%), 2(1.5%) and 4(3.0%) slightly disagreed, disagreed or strongly disagreed with the assertion. This was complimented by 69(51.5%) endorsement to the statement "My mentor provided constructive and useful critique of my work". While 38(28.4%) strongly agreed, 21(15.7%) slightly disagreed and a total of 6(4.4%) disagreeing and strongly disagreeing respectively. Furthermore, interns rated mentors high on motivation to improve on their work product. 60 (44.8%) agreed to being motivated, 49 (36.6%) strongly agreeing to it. However, 16(11.9%) slightly disagreed with the view, with only 6(4.5%) and 3(2.2%) disagreeing and strongly disagreeing to the statement. Interns'

evaluation on mentors' providing direction and guidance on professional issues especially dealing with difficult students" show high positive feeling. As high as 74 representing 55.2 percent and 43 representing 32.1 percent agreed and strongly agreed to the view on guidance. Only 17(12.7%) slightly disagreed, disagreed or strongly disagreed.

Again, interns were full of praise to their mentors on the statement "My mentor answered my questions satisfactorily (eg; timely response, clear, comprehensive)". From Table 4 above, 77(57.5%) agreed while 45(33.6%) strongly agreed to the statement. Only 5(3.7%) disagreed, with 4(3.0%) and 3(2.2%) slightly disagreeing and strongly disagreeing respectively. 62(46.3%) and 58(43.3%) of interns strongly agreed and agreed that mentors acknowledged their contributions appropriately. Eight interns, representing six percent slightly disagreed with the view, three interns disagreed and three interns also strongly disagreed that their mentors acknowledged their contributions appropriately. These represented 2.2 percent each. It was however realized that a substantial number of interns 24(17.9%) disagreed with the statement "My mentor suggested appropriate resources (eg, experts, electronic contacts, source materials)". A further 22(16.4%) slightly disagreed with 8(6.0%) strongly disagreeing. However, 61 of the students, representing 45.5 percent, agreed with the statement while 19(14.2%) strongly agreed with it. A similar mixed reaction can be seen from table 5 above on interns' evaluation of mentors on mentor's challenging them to extend their abilities. While 57(42.5%) agreed to the view and 24(17.9%) even strongly agreeing to it, 21(15.7%) disagreed with it. Also, 20(14.9%) and 12(9.0%) slightly disagreed and strongly disagreed respectively.

Generally, it can be deduced from the analysis above that many interns had positive weightings for their mentors regarding the kind of mentoring that took place within the

one semester internship.

4.1.5 **Mentorship practices experienced by interns' that shape their conceptions and vision of teaching and learning mathematics**

To access the mentoring practices which shaped the conceptions and vision of interns, the researcher asked interns to respond to a few questions. These are contained in Table 5.

Key to Table 5: A= Always (5), O= Often (4), S=Sometimes (3), R=Rarely (2),

N= Never (1)

WM= Weighted Mean, St.D= Standard Deviation, I=Interpretation

Interpretation of weighted means for Table 5: 5 = Always, 4-4.9 = Often,

3-3.9 = Sometimes, 2-2.9 = Rarely, 1-1.9 = Never

Table 5: Mentorship practices and interns' conceptions and vision of teaching and learning mathematics

Questions	N	R	S	O	A	WM	St.D	I
Mentor helped me to plan for the lessons I was asked to teach	24	17	9	57	27	3.34	1.40	S
Mentor helped me to write the learning outcomes for the lesson I taught	24	25	18	49	18	3.09	1.35	S
Mentor helped me to decide on the media that I could use to develop concepts in lessons that I taught	27	34	30	36	7	2.72	1.21	R
Mentor identified some teaching skills for me to implement in a lesson before/during planning	20	22	15	56	21	3.27	1.32	S

Mentor helped to identify some teaching materials	19	24	25	51	15	3.14	1.25	S
Mentor demonstrated some teaching skills before asking me to teach a lesson	18	29	21	50	16	3.13	1.27	S
Mentor coached me how to teach	28	25	21	46	14	2.95	1.34	R
Mentor regularly sat in on lessons that I taught	12	10	32	47	33	3.59	1.20	S
Mentor encouraged me to use group work during the lessons	14	19	27	64	10	3.28	1.13	S
Mentor allowed me to use any teaching method that I thought was useful to develop concepts in lessons I taught	5	11	8	72	38	3.95	1.01	S
Mentor provided me with useful feedback that helped me to develop as an effective teacher after sitting in on lessons that I taught	7	8	13	49	57	4.05	1.1	O
Mentor gave me useful feedback on my questioning Techniques	9	8	20	65	32	3.77	1.09	S
Mean of means= 3.36			Standard deviation= 1.22					

Table 5 indicates that mentors' coaching interns on how to teach and assisting interns decide on the appropriate media to use to develop concepts rarely occurred during the internship period. Mentors assistance in lesson planning, writing learning outcomes for lessons interns taught, identifying teaching skills for interns to implement in a lesson both before and during planning, identifying teaching materials occurred sometimes during the internship period. Furthermore, mentors did not only regularly sit in lessons interns taught, or encouraged interns to use group work during lessons, but also allowed interns

to use teaching methods the interns thought to be useful to develop concepts during lessons. The interns indicated as shown in Table 5 that mentors gave feedback on their questioning techniques and rated these as practices which often occurred. However, the most outstanding practice was that mentors always provided interns with useful feedback that helped them to develop as effective teachers.

4.2 Results from interviews

In order to gain a deeper understanding of the mentoring experiences of mathematics interns and to compare with their responses to the questionnaire, the researcher conducted some interviews. The interviews were transcribed into text. After reading through the text several times to make sense of participants' responses, some themes were identified. These were: How schools received interns, preparing interns for action, mentee-mentor relationships, learning through internship and improving the internship programme. Five interns were interviewed. Pseudonyms are used throughout this study.

4.2.1 How schools received interns

When I asked participants how they were received in their schools, and oriented towards practice in their classroom, their responses revealed marking disparities. In her response to the question, *Anita said: Oh I was welcomed very nicely and friendly, by the headmaster. I had an interaction with him. I had one-on-one chat with the headmaster. He was very appreciative saying that he was glad to see a female mathematician coming there to do internship. The student saw her one on one interaction with the headmaster a s a privilege saying: I was really in a high privilege to even talk to the headmaster in person*.

In a sharp contrast to Anita's experience however, Sando had this to say:

Yeh, in the first instance it was not easy, for example when the headmistress saw us the first time, she said ah, where are you people coming from?, then we said we are coming for internship go gogogogo we don't need any internship people here, we don't need any interns !go go back. The student expressed his frustration at the initial welcome reactions of the headmistress saying*: oh so it was like we were frustrated so me kroaa I said eeh if I knew I didn't choose this place at the first place. So I was like a little bit frustrated…*

This is a worrying development because it is an indication that some partnership institutions are beginning to lose interest in supporting UEW to train her products to really turn out with enough expertise to teach.

When Rosario was asked if he was taken through any induction activities before he actually started classroom teaching in his partnership school, he said:

Yes, there was an orientation for newly recruited teachers, interns and national service personnel, so the headmaster, with the assistant head of academics, did that thing for us.

Eric also indicated that his first contact with the school was when there was a department al meeting which he was told to attend as he says: *So I attended the staff meeting and that was my first introduction.* Eric also indicated that he had the choice of deciding whether to teach core mathematics or Elective mathematics saying:

they welcomed us and we shared the subject areas. That is Elective maths and core maths. We did that with our HOD so some of us opted to teach elective maths then others too opted to teach core maths so with that we were given mentors that we were supposed to

work under or work with in the course of the teaching.

While responses of Anita, Eric and Rosario were favourable the same cannot be said of the experience of Sando. However, the views expressed above by interns indicate that they were taken through mentoring activities as stated in the Student internship handbook of UEW. It further reveals that some interns were even given the choice to choose between core mathematics and elective mathematics to teach.

4.2.2 Preparing interns for action

The student internship programme is designed to benefit partnership schools through the special skills, new ideas and expertise of interns among others. In so doing, the schools are required to prepare interns adequately for a smooth take off. These preparatory practices include assigning mentors to interns, giving interns the opportunity to observe their mentors' teaching for at least two weeks before they start actual teaching among others. Each partnership school had its own unique way of preparing interns for action.

When I asked Anita how she was assigned to her mentor and what activities she was engaged in before actual classroom interactions begun, she said:

Ok the way I was assigned to my class and my mentor; with my mentor, we had a departmental meeting so they asked, we were four who went to……, so they asked those who were trained teachers and those who weren't trained teachers so that they could assign us to our mentors, so those with the trained teachers, they assigned them to particular people and those that we weren't under any training as in who have not gone to any training college before coming to the institution.

When I asked her if she observed her mentor teach before she actually started teaching, she answered in the affirmative saying:

I observed my mentor, three consecutive weeks. Yes, yes, closer to a month. After the three weeks, I was being assigned to a class.

Anita stated that she had mock lesson presentation with her mentor saying:

As a mentor he was guiding me in the process of teaching. But before that he will sit me down and he will be like a student then I will be the teacher. Then the way I will go and deliver in class, I will do to him. Are you getting the scenario? so you being the student so if I'm going to teach let's say addition and subtraction then how I'll introduce the lesson and that I'll practice with him first before I go to the class so if there's a flap or there's a mistake, he'll correct me before I get to the class. The student also indicated that her mentor offered professional guidance even during her lesson delivery without embarrassing her to the students as she explains:

Whiles in the class, even if there is something I omit or I didn't add or I'm supposed to add, he'll prompt me from behind that oh you have to do this and I'll continue from there

When I asked if her mentor sits in her class to observe her teaching and if there is any evaluation between them, she said:

He sits in the class. Yeah, yes please. Yes, after the class then I sit him down then I ask him, that was when he was there in the process of my teaching, so I ask him how did it go then he'll tell me my errors then my good things, my eerr....my strengths and my weakness, so he'll tell me my strengths and my weakness then tell me to enlighten on my weakness.

This is an indication that schools segregate interns into those with professionally trained teacher backgrounds and those who came into the university straight from the senior high school. It's perhaps because those without any prior teaching experience may need more attention from mentors than those who taught at various levels of education before coming into the university.

When I asked Sando for his comments on his first encounter with his mentor, he lamented

Actually, my mentor herself, the first time she told me lessons will begin, she didn't come to the school so the HOD called me that I should go with him so that I'll go and observe his teaching, and I observed the HOD for about let's say one hour. Sando was however full of praise to the HOD for acting professionally in introducing him to the students as he said:

he introduced me to the class that this is your new teacher you've got recently, but he didn't say I was an intern.

The account of Sando indicated that school authorities were very professional in introducing interns to students in the various partnership schools. Some interns hinted that they were given to co-mentors. They explained that even though the substantive mentor is in the school, they were assigned to a co-mentor who was in-charge of their daily professional needs and guidance. For instance, explaining how he was assigned to a mentor, Eric stated:

I had a specific mentor but he was not in charge of vetting my lesson note, filling my yellow book and observing my teaching and marking. For him, when I'm going to teach a

topic, he gives me the topic that I'm supposed to teach, how some of them I should go about them, how I should teach the topic or how I should teach the students if I finish, sometimes he comes around to observe then I will ask him did I do well? Then he will say for this you did well, but for this place you next time do like this, next time do it like that.

Yet when Rosario was asked if he also had another mentor, he said:

Actually, yes I observed my mentor in the first week, my assigned mentor. Apart from the HOD who is supposed to supervise you for your, will I say your real work when you are doing your real work. It's the HOD that vets the notes, that does the vetting. Rosario describes the role of his co-mentor as: My mentor was just like eeeeer, will I say a figure, eeeer an assistant who they said I should observe him for that week so I observed him for two, three days then I started picking up from the same class that he had to go in that few days....that week. Or else he started teaching directly from some of the classes so I observed him then he wasn't around the next time so I went and started teaching those topics just like that! just like that……He doesn't normally have pre discussion with me before the lesson but we'll read through the post, the post lesson discussion.

The discussion above indicates that interns were subjected to mentoring activities of varying degrees as stipulated in the SIP handbook. As mentioned, schools received interns relatively well, mentors did not only assign interns to classes but allowed interns to observe their teaching and vice versa and protected the dignity of interns.

4.2.3 Mentor-mentee relationship

The relationship that exist between a mentor and a mentee is very crucial in the latter's professional development. Mentors need to create conducive atmosphere for interns to be

able to learn in the classroom environment. Interviewing interns revealed that some mentors were very supportive to mentees;

When I asked both Anita and Sando to describe their relation with their mentors, they said:

Anita: *it was so cordial.*

Sando: Oh yeah she was very very good. Sando adimitted that his mentor was very sincere in pointing out his weaknesses to him which he also accepted in good fate as he explains: If it comes to her being sincere to me maybe if something that I did not do well, she'll be frank and tell me after the lesson that with this, this and this you did not do good, this is how you should have done it. So I also accept it in good fate. He explained further that his mentor will always expect to see him implement the post lesson discussions in his next lesson as he adds: so she will always want to see that what she told me I've applied it in my next maybe lesson I'll hold so I'll do exactly and when after the lesson she'll say at least what you have done now is to my satisfaction. It's better than what you did for the previous lesson. Sando admitted learning greatly from his mentor: I learnt a lot from her, I learnt a lot from her.

Rosario was not too enthused with the kind of relationship that existed between him and the mentor: *I'll give him average, not above average because at a point in time when you need his services before the lesson, you might not get him, he's always busy eeeeer he's always busy but after the lesson then you'll get him when he wants to teach but he has not supervised me more than eeeer four (4) times, the HOD. He lamented how the class was handed over to him by his mentor saying: My mentor himself, to be frank, the class was*

given to me to handle because he took up, he was doing another course, so my coming was a halleluiah to him and I was given 25 periods, I was handling 25 periods. Like seriously, like seriously. I was teaching like a full teacher.

Interns therefore had mixed feeling about the relationship that existed between them and their mentors during the student internship programme. Rosario perhaps, did not experience the best of relations, though, Anita and Sando had very exciting and insightful relationship with their mentors.

4.2.4 Learning through internship

The student internship experience is an opportunity for intern teachers to be schooled into the realities and responsibilities of becoming teachers. Many interns agreed that they learnt through the internship programme as it shaped their perception of teaching mathematics. In response to the question; has your experience with your mentor shaped your perception about teaching and learning mathematics, Nilla said:

Yes, it has helped me so much. In fact I have enjoyed it, yeah it's a very nice experience, she continued*: The greatest thing I'll say doesn't pertain his teaching though when we talk about teaching I've learnt something better, the one that I like was his relationship with people.* The student explained further that: *He makes the work easy.* Nilla was full of praise for her mentor's choice of words in correcting her saying*: If you don't do well, the way he even say it, you will like it. He doesn't make it too difficult, when he's talking to you, he doesn't use words that will scare you and he'll always bring you closer to himself and he was that kind of free type, easy to approach eheee let me use that one. He doesn't, he's not arrogant. So I've learnt that thing; if one day me too I'll be assigned eeereeh I'll*

be leading some people, I have to know how to... because in that case we were the subordinates and he was the head so, oh I don't know the term to give, and on our level and everything was just moving smoothly.

She indicated that he was also very approachable and was someone she could confide in as she says*: If you want to consult him for anything, you don't panic because you know he will warmly receive you and give you guidelines ahaaa, so that's what I like*. When I asked her specifically what she learnt from her mentor which shaped her perception and vision of teaching and learning mathematics, her response was:

for academics, one day he was teaching elective maths and I sat at the back to observe him, he's very good. What I learnt was that as a teacher, you must have the stuff, when you go to the board, you will not be fumbling or you will not be found wanting, you won't disgrace yourself mmhmmm. He was just delivering the content one after the other ahaaa.

Sando, responding to the same question of how his mentoring encounter shaped his perception and vision of teaching and learning mathematics said:

Yeah, yeah, , through her advises and sometimes she observing me and giving me what I should have done, both she and the HOD, what I should have done to suit the children better, yeah, that was the most important thing I learnt from her.

They admitted that the student internship programme shaped their conception and vision of teaching mathematics.

In responding to the same question, Anita said:

Yes. Ok, he has shaped my perception of being a maths teacher the way he interacts with

me and I get it when I'm about to go to class. YES, I really enjoyed; he sat me down like a father, he didn't see me like someone coming there to do his or her own thing but he sit s me down then talk to me and guide me in all that way. So I felt like I was part of the students.

Responding to the same question, Rosario said:

Yes, yes especially the HOD. During observing his lesson and sometimes coming to my class even as I teach, he brings the real world into the classroom. The intern indicated that his mentor's ability to bring the real life situations into his teaching made the most impact in shaping his perception and vision of teaching mathematics saying*: for example, I was teaching angles, then he gave the class a scenario like, they should look around and see where eeeem: definition of angle, where they can get two lines meet and this kind of thing then you see that the corner of the building, the corner of the chair, the corner of the table then he asked them, so they should look in their kitchen. They told him the corner of their kitchen cabinet forms an angle there. One girl even said the frying pan, it forms a circle and the circle alone is an angle of 360, so he gave examples and said in their dormitories or their bedroom. They said the leg of the bed between the bed and the ground.* Rosario admitted that he was amazed at the responses and participation of the students as he says: *They were giving a lot of scenarios of angles from their rooms then I was like wow! This man, he can teach. It looks like he brings the real lesson into the students' environment. Most of the lessons that I observed the whole lesson that, I were seeing difficulty to eeereeer this angles at point, vertically opposite angles. Then he eve n came to demonstrate to us saying; like you see that he made like this and told one stude nt that the student should come and put his buttocks in the same way; that this and this fo*

rm an angle at the top there...and he was so funny and it made the class was so lively. He doesn't make the lesson like chinchinaaa a must, naaa.....but I've learnt from him from this kind of person, maths is not always like on the board, on the board; bring it to the real environment and then see its relation there.

When I asked Eric if his mentoring experiences improved his perception and vision of teaching mathematics, he had this to say:

It helped me because we had a mentor, a HOD who was mentoring us. He was that kind of serious person. His perception about mathematics and his perception about teaching mathematics to students; that was his philosophy.

Continuing, Eric said:

Immediately we came, he gave us an insight into if you are a mathematics teacher, what you are supposed to do so that students will understand or students will not fear mathematics. So all that he always give us advice about how to go about it or how to behave in the class such as the sense of humour that the teacher possess, how the teacher will present the lesson.

These sentiments expressed by the interns compliment responses on questionnaire items 22 to 33. There were indications of mentors giving useful feedback to interns to help the m improve and taught interns how to bring the real world into their lesson delivery.

4.2.5 Improving the student internship programme

Interviewing five of the mathematics interns about their views on how to improve the student internship programme revealed that many of them advocate for the programme to

be extended to one full year. Their reasons among others were that the short duration did not allow them to gain enough experience from mentors. They argued that after the period of observing their mentors and actual teaching, they need time to build on their confidence and to confront varied challenges that may occur. However, many of them leave at a time that they are just beginning to settle properly.

Anita was asked that in her opinion, was the internship programme effective and how can it be improved? In responding, she said:

It's very good but what I have to say about it is that, the period for the internship need to be extended, it should go back to the olden time it used to be one year not just a semester. When I asked for her reasons why she is calling for the programme to be one year duration, she explains: Because you wouldn't learn much. You would just learn a few and we are there to learn…….You see here, we are doing the theoretical aspect so when you go there, that is the practical aspect. So learning the practical aspect, you wouldn't learn much there and so many things and places that you couldn't reach, are you getting what I'm saying? Yes, so I think the one year would have been beneficial than the short period.

Commenting on how the student internship programme could be improved, Rosario added his voice to call for an extension of duration. He said: The duration wasn't enough!

He had concerns about the availability of mentors during the programme and wishes that mentors visited their lessons more frequently as he says: *So I think if they should give us daily assistance; not always when it's time for marks, to give marks in our yellow book that they should come and sit in, they should be coming frequently…., Sometimes you might need the help of the mentor at that point in but he or she might not be there to*

assist you but he'll make himself available after you have self-improvised for the lesson but before the lesson, you will not get him.

On his part, when Eric was asked for his comments on how the programme could be improved, he says: *Some of the teachers who are supposed to mentor us see it as a burden to them.* He explains further that mentors feel reluctant to assess them because they are not paid their allowances promptly:

They say the school gives them some token; the internship programme the school gives the mentors something. So as that token is not given, they feel like it's not important so some teachers decided that they won't fill the books of other students. The intern states clearly*: so if they are to improve it, the time that they will use to train the mentors, they should train them early so that those teachers they will train as mentors, they'll send students to them.* It was also his opinion that for the internship programme to be improve dstudents should be sensitized on exactly what is expected of them during the field experience even before they start the programme. He explains: *Also, the students should be sensitized. So if we were sensitized specifically, on some of the things that you are supposed to do when you go there and what you are supposed to bring, I think that one will improve the student and also improve the internship programme.*

Yet, some interns held the view that for the internship programme to be improved, university supervisors should come more than once to supervise them during the period. This Sando explains:

I think if the supervisors themselves should come not just once, they should come more than once it will be of help; it will be of help if they come more than once.

When asked for her views on how to improve the student internship programme, Nilla said:

Yes, even though the period was limited, it was so helpful because I've developed...I've gained experience and I think right now if I should be posted to any school to go and teach, the standard of the school where I'll be posted wouldn't be too different from the one I've been to.

4.3 Summary of results

The results indicate that mathematics interns of UEW went through various kinds of mentoring activities. These activities, some of which included orientation given to interns on school routine practices and policies, vetting interns' lesson notes, engaging in pre and post lesson discussions among others, were in consonance with the provision of the student internship handbook (2009) of UEW. The results also showed positive ratings of mentors by interns. As many as 51(38.4%) did not only agree that mentors were accessible, but even 93(69.4%) strongly agreed that mentors were approachable. This is very important in building confidence of interns in becoming professional teachers. Mentors demonstrated professional integrity, supported and encouraged interns to extend their knowledge and even provided constructive and useful critique of interns' work.

Furthermore, the results revealed that mentors' actions and inactions shaped intern's perception of teaching and learning mathematics. Even though mentors coaching interns on how to teach and assisting them choose appropriate media to use to develop concepts were least frequent, their assistance in lesson planning, writing lesson outcomes, identifying teaching skills for interns to implement in a lesson were very phenomenal.

Again, mentors did not only give interns feedback on questioning techniques but also provided interns with very useful feedback which helped them develop as effective teachers.

The interviews conducted confirmed most of what was contained in the questionnaire. The interview results revealed that interns were taken through mentoring activities as stated in the questionnaire. The interviews further confirmed interns' evaluation of their mentors and how their experiences with their mentors shaped their conception of teaching mathematics. Interview results also identified new developments in the field. Even though the issue of extension in the duration of the SIP to one full year instead of the one semester as practiced now, was common to all interns interviewed, it was realized some schools do not receive interns well which is a worrying development because it is an indication that some partnership institutions are beginning to lose interest in supporting UEW to train its products to really turn out with enough expertise to teach. In addition to the new revelations, some schools also had co-mentors who mentor interns. Generally, it was the view of interns who were interviewed that for the SIP to improve, an extension of duration is very key.

CHAPTER 5

DISCUSSIONS, SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Overview

The aim of this study was to explore the mentoring activities UEW mathematics interns experienced during the one semester internship to establish if the activities are in consonance or at variance with the provision in the Student Internship handbook. It further sought interns to evaluate their mentors over the internship period and to establish if the mentoring they received had any impact on their perception of teaching and learning mathematics. This study sought views on how the SIP can be improved from interns' perspective.

The study included one hundred and thirty four mathematics interns who were purposively sampled. The survey design was used. A self-administered questionnaire, with an 84.8% return rate and a semi-structured interview were the research instruments used to collect data. The quantitative data collected was analyzed using IBM SPSS Statistics while the qualitative data was analyzed thematically. This chapter presents discussions, summary of findings, conclusions and recommendations.

5.1 Discussions

A country's development and prosperity depends on quality and competent teaching force (Jahin & Alexander, 2006). Cognizant of this quest for quality and competent teaching force, Teacher Education Institutions (TEI) such as UEW, introduced the student

internship programme. This programme was designed to equip intern teachers with the necessary expertise under the careful guidance of mentors.

This study therefore set out to explore the mentoring activities mathematics interns experience during the one semester SIP. The study examined interns' evaluation of their mentors and their views on how their mentoring experiences shaped their conception and vision of teaching and learning mathematics. The study further sought interns' views on how the SIP could be improved to meet the professional development of the mathematics teacher.

The results from questionnaire, which were complimented by interview responses, indicated that mentoring activities were in consonance with the provision of UEW student internship demands. Some of the activities included mentors giving orientation to interns on school routine practices and policies, engaging interns in pre and post lesson discussions, as well as vetting interns' lesson plans. It came up however that some mentors did not observe interns' lessons adequately during the internship period.

Furthermore, interns' evaluation of their mentors was quiet re-assuring. Majority of interns rated mentors' practices during the internship period as satisfactory. These rating spans from mentors being accessible, demonstrating professional integrity, mentors being approachable, support and encouraged interns, motivated interns to improve on their work product, to mentors assistance in providing direction and guidance on professional issues, providing constructive and useful critique of interns, acknowledged interns contributions, suggested appropriate resources for interns and challenged interns to extend their abilities. These practices demonstrate that mentors exhibited Subject

Matter Content Knowledge, Pedagogical Content Knowledge and Curricular Knowledge as espoused by Shulman (1986), during the internship period. These practices disagree with the view of Mavhunga (2004) who claim the mentors lack the knowledge needed to mentor interns. The findings however are in consonance with the various stages of mentoring which include introductory, relationship-building, growth, maturation, transition and termination stages as espoused by Manza and Patrick (2014).

In this study, interns were asked if their mentoring experiences shaped their conception and vision of teaching and learning mathematics. The study results point out that interns felt the mentoring experienced had a positive impact on their perception of becoming mathematics teachers. Apart from the fact that mentors did not coach interns on how to teach and assisting interns to choose the appropriate media to develop concepts, they scored high on assisting interns in lesson planning, identifying teaching materials and teaching skills and even sat in to observe and guide interns' teaching. These the interns said were remarkable in shaping their thinking in becoming competent mathematics teachers. These views held by the interns are in line with the benefits of mentoring identified by Murrell (2007).

The interviews were generally conducted to compare with the questionnaire responses and to solicit interns' views on how the SIP could be improved. It came up that apart from few partnership schools which were not welcoming enough in receiving interns, majority of the schools adequately prepared and received interns very well. There were orientation sessions, observation by interns, and as indicated above, mentors gave interns all the necessary support as far as the UEW guidelines for mentors were concerned. However, interns complained about the duration of the programme. They were of the view that the

one semester does not allow them to fully implement the skills they acquired from their mentors. The short duration too does not allow them to gain confidence enough and to experience different challenges that may occur within the course of the full year. Their concerns are backed by Arbaugh, Abell, Lannin, Volkmann and Boone (2007) who strongly stressed that if the internship is one full year duration, it would provide interns the perfect chance to develop their pedagogical content knowledge in terms of assessment, content and conceptions about teaching.

The interns also had a word of advice for faculty personnel. According to them, to help improve the SIP, supervision from university staff should be more than once.

5.2 Findings

This study was to explore the mentoring activities mathematics interns were exposed to during the one semester student internship programme and to see if the activities were in line with the requirement of UEW guidelines for the programme. It further examined interns' evaluation of their mentors and how mentoring experiences shaped their conception of teaching and learning mathematics. The study sought views of mathematics interns on how the SIP could be improved. The main findings of this study are as below.

1. Mentoring activities experienced by UEW mathematics interns included orientation, observation, vetting lesson notes, pre observation and post observation discussions, and mentors allowed interns to observe their lessons. These are in consonance with the provision of the student internship programme (SIP, 2009).

2. Interns' evaluation of mentors revealed that mentors' mentoring practices were generally satisfactory.

3. Mentors' mentoring practices during the internship programme shaped interns conception and vision of teaching and learning mathematics. This is because the kind of attitude put up by mentors taught interns what it is to be a mathematics teacher.

4. From interns' perspective, an extension of duration of the student internship programme to at least one full year is critical in the professional development needs of the graduate mathematics teacher.

5.3 Conclusions

Mentoring activities currently practiced in UEW partnership schools is in line with the guidelines of the programme as designed by the University of Education, Winneba.

Interns also view mentors as very instrumental in their quest to learn to teach. The interns' evaluation of their mentors was positive.

Mentors in partnership schools shape interns' conception of teaching through their mentoring practices. These included mentors exhibiting professional competence, giving interns guidance and support needed to extend their knowledge of teaching.

In order to give interns ample time to build confidence in the teaching profession under the guidance of their mentors, interns strongly advocate a one full year duration student internship programme.

5.4 Recommendations

The findings of this study indicate that mentoring activities experienced by interns in part nership schools are in line with UEW guidelines for internship programme. Based on the findings, the researcher recommends that:

1. The student internship programme should be extended to one full year. This will give interns adequate exposure to deepen their subject matter content knowledge (SMCK), their pedagogical content knowledge (PCK) and curricular knowledge (CK) through their interactions with their mentors.
2. The University of Education, Winneba should identify co-mentors who are assigned to mentor interns and immediately give them training. This is because, in some partnership schools, the experienced mentors only mentor interns who do not have previous teaching experience prior to coming to the university.
3. Supervision by university staff should be more frequent.
4. UEW should assess partnership schools to exclude schools who do not believe in partnering the university in training its products.

5.5 Suggestions for further research

There should be further study on the views of mentors on how the student internship programme contributes to their schools performance.

A study which sought the views of mentors on how the student internship programme should be designed for mutual benefit of UEW and partnership institutions will be ideal to guarantee continuous partnership cooperation between UEW and its partnership schools.

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APPENDICES

APPENDIX A

QUESTIONNAIRE

UNIVERSITY OF EDUCATION, WINNEBA

FACULTY OF SCIENCE EDUCATION

MATHEMATICS DEPARTMENT

QUESTIONNAIRE ON MENTORSHIP OF UEW INTERNS IN THE 2014/2015 ACADEMIC YEAR

This research is aimed at investigating the effectiveness of mentoring UEW interns during the one semester internship period and its impact on the professional development of intern.

Respondents to this questionnaire are assured of confidentiality of any information given. The information supplied is strictly for academic and research purposes.

PART I

Personal Information

1. Sex : a Male[ ] b. Female[ ]
2. Region of internship ……..
3. Category of partnership school: a. JHS [ ] B. SHS [ ] c. College of Education [ ]

PART II

Section A

Please tick [√] where appropriate

1=Strongly Disagree (SD), 2=Disagree (D), 3=Slightly Disagree (SLD), 4=Agree (A) and 5=Strongly Agree (SA)

Mentoring Activities interns experience during the internship period

	Strongly Disagree (SD)	Disagree (D)	Slightly Disagree (SLD)	Agree (A)	Strongly Agree (SA)
4.My mentor gave me an orientation of the essential routines and policies of the school					
5. My mentor allowed me to observe his/her lessons for at least two weeks before I started teaching					
6. My mentor engaged me in pre-observation discussion to clarify the focus of the lesson, the learning objectives and teaching strategies to be used					
7.My mentor engaged me in post-observation discussion to evaluate collaboratively the learning outcomes					
8.My mentor vetted my lesson plans before I used them					
9.My mentor observed my lessons at least five times during my internship period					

Section B

The following section allows you to evaluate your mentor's professional competences during the internship period. **Please tick [√] where appropriate to you**.

	Strongly Disagree (SD)	Disagree (D)	Slightly Disagree (SLD)	Agree (A)	Strongly Agree (SA)
10.My mentor was accessible at all times					
11.My mentor demonstrated professional integrity					
12. My mentor demonstrated content expertise in my area of need					
13. My mentor was approachable					
14. My mentor was supportive and encouraging					
15. My mentor provided constructive and useful critiques of my work.					
16. My mentor motivated me to improve my work product					
17. My mentor was helpful in providing direction and guidance on professional issues (e.g. dealing with difficult students)					
18. My mentor answered my questions satisfactorily (e.g. timely response, clear, comprehensive)					
19. My mentor acknowledged my contributions appropriately					
20. My mentor suggested appropriate resources (e.g. experts, electronic contacts, source materials)					
21. My mentor challenged me to extend my ability					

Section C

The following section allows you to comment on mentors' practices that shape your conception and vision of teaching mathematics. **Please tick [√] where appropriate**

1=Never (N), 2=Rarely (R), 3=Sometimes (S), 4=Often (O) 5=Always (A)

	N	R	S	O	A
22. Mentor helped me to plan for the lessons I was asked to teach					
23.Mentor helped me to write the learning outcomes for the lesson I taught					
24.Mentor helped me to decide on the media that I could use to develop concepts in lessons that I taught					
25. Mentor identified some teaching skills for me to implement in a lesson before/during planning					
26. Mentor teacher helped to identify some teaching materials.					
27.Mentor teacher demonstrated some teaching skills before asking me to teach a lesson					
28.Mentor teacher coached me how to teach					
29.Mentor teacher regularly sat in on lessons that I taught					
30.Mentor encouraged me to use group work during the lessons					
31. Mentor teacher allowed me to use any teaching method that Ithought was useful to develop concepts in lessons I taught.					
32. Mentor teacher provided me with useful feedback that helped me to develop as an effective teacher after sitting in on lessons that I taught.					
33. My mentor teacher gave me useful feedback on my questioning techniques					

APPENDIX B

INTERVIEW GUIDE

1. Which institution did you have your internship?
2. How were you inducted into the school? Any orientation organized for you and by who?
3. Kindly describe what processes you were taken through before you actually started teaching.
4. How do you describe the support given by your mentor during your internship period? Did it meet your expectation?
5. In your opinion, did your experience with your mentor shape your conception and vision of teaching mathematics?
6. Do you think the Student Internship Programme as you have recently experienced, was effective? How?
7. Kindly suggest ways you think the programme can be improved

APPENDIX C

SAMPLE OF TRANSCRIBED INTERVIEWS

Transcription of Interviewee #1 (Sando)

Date: Monday, 30/03/2015

Q: Which institution did you go for your internship and why?

School A SHS. Ok, in the first place, emmm I know that the ladies they have a little bit of problem so far as mathematics is concerned, yeah so emm I'm somebody I like to teach basics. I like the basic I like to teach the basics of mathematics, I try to bring people from nowhere to somewhere ahaa so I consider ladies in that situation I just wanted to go and teach them from the basics and build them to some standard so that was my main reason why I chose to go there.

Q: How were you received?

Yeh, in the first instance it was not easy, for example when the headmistress saw us the first time, we were about three, two from UCC and there was another guy who came to do his national service there so we all went together to see the headmistress and the first time she saw us she said ah, where are you people coming from?, then we said we are coming for internship go gogogogo we don't need any internship people here, we don't need any interns !go go back oh so it was like we were frustrated so me kroaa I said eeh if I knew I didn't choose this place at the first place so I was like a little bit frustrated so later on we went to her again and she came down to talk with us that they can't get accommodation for the interns but for the National Service people they can get accommodation for them so we should try and find a place where we will lodge and we

should come back to her so that she will take us to the HOD and then we will start our work.

Was it the first time that school was getting an intern from this University?(Probe)

No, for my knowledge they said most of the time she doesn't request it so she will pretend like like they don't need intern and later on she'll by pass and go and bring her own people so at this time, the school just made a way then they just made that letter through the Head of Academics then they showed it to her then they sent it immediately like she was not in known of those movements immediately but it was ok after some time.

Q: How were you received?

Yeah, actually she said she had her other assistants... so they were assistant administration and assistant academic so she took us to the assistant administration for us to see our letters that we submitted to them and put down our names and our numbers and took us to the academics and then she also, took us to the HOD, the various department heads and then,..it was like we were going and coming, the system took for about one week. When we went there it was one week for us to go through that process, we went through that process for about one week, going and coming, go and come.....even it was, the second day we went they had a meeting ahaaaa and like, staff meeting, staff meeting and those interns and the national service were all there and she sacked us and said they should leave. If you are an intern, you are national service personnel, leave our meeting; don't stay here, so like we all left and the next day, go and come the next day. We went and came, you see, so we are going to show you your departmental heads. that time she had given us to the head of academics, the emm....,they showed us our departmental heads

then I was working with him all the time for about two days then he told me that he'll give me a number then I'll call my mentor so he gave me the number, I called the mentor and the mentor asked me to meet her. In fact the mentor was a house mistress and I went to meet her at her house, she sat me down and told me what I brought then we discussed and I told her that I'm from Winneba I'm coming to do my internship here so she told me her likes and dislikes and gave me an advice to what I will do and when we will start work. So I also responded then she told me the day I should report and she showed me to the classes that I'll be going to.....

When you reported to her, what did she do before you started teaching? (Probe)

Yeah, actually, actually it was like the, my mentor herself, she didn't, the first time she told me lessons will begin, she didn't come to the school so the HOD called me that I should go with him to so that I'll go and observe his teaching, the HOD ahaaaa, that time about two weeks had passed reopening, it was like the third week, so I went with the HOD and I observed the HOD for about let's say one hour and he introduced me to the class that this is your new teacher you've got recently, but he didn't say I was an intern and so, they monitored me for some time and later on when the lesson closed they went to the biometric department for verification so she also told me that the next time she'll be going to class so that I'll go and monitor her for some time and if I'm ok I'll also start work.

Q: How many times did you observe your mentor?

For my mentor, I didn't observe her even once only the HOD did once that one kroaa he was not teaching,he was just revising the questions the children did the previous term.

That's what they were doing which he worked with them ahaaaa! that was what they were doing so at the time we went there ahaa so it was just some revision on the questions that they did but for my mentor,she didn't teach even once for me to see,all the time I was.... she just went and introduced me to the the class that these are your classes you are coming to teach so, she introduced me to the class so, the next time,I started and she came and started monitoring me so sometimes the two of them will come,she and the HOD, will come and monitor me sometimes she alone then she'll ..... We will be having the pre-observation conference and co.

Yeah, yeah oh that one diieee yeah yeah yeah. But for her teaching for me to see diiieeeenone!, there was none.

Q: How do you describe your relation with your mentor? Did you learn anything?

Oh yeah she was very very good. If it comes to her being sincere to me maybe if something that I do not do well, she'll be frank and tell me that this, after the lesson with this, this and this you did not do good, this is how you should have done it. So I also accept it in good fate, so I'll say ok ,so she will always want to see that what she told me I've applied it in my next maybe lesson I'll hold so I'll do exactly and when after the lesson she'll say at least what you have done now is to my satisfaction. It's better than what you did for the previous lesson, so like I learnt a lot from her, I learnt a lot from her.

Q: Though you did not have the advantage to observe her teach, did you learn anything?

Yeah, yeah, yeah, through her advises and sometimes she observing me and giving me what I should have done, both she and the HOD, what I should have done to suit the

children better, yeah, that was the most important thing I learnt from her.

Q: In your opinion do you think the internship was helpful in shaping your perception of teaching mathematics?

Yeah,....yeah for me I think it is good, I think it is good but emmmm its good in a sense that if our mentors are more effective. Our mentors should be more effective. In what sense? (Probe). Yes, in a sense that, lets take for my case where I could not see my mentor teach for me to see. Although she was monitoring me from here and there but for my knowledge or what we were told before we went for the programme, we were told that our mentors will take us through their own personal teaching for us to observe them from behind, that's what I know and that's what I heard so that at least we will gain one or two things since we are inexperience and we are new to the system and we are able to gain a little bit knowledge from them so, yeah so that we can look at and do ours but here is the case there's nothing like that. But I think the internship programme is good but if our mentors will be more effective and try and shape us well and try to also do their part well in terms of maybe teaching for us to observe them and helping us especially when it comes to our lesson note planning. This kind of thing too, yeah i think it will help us. Apart from that, I think the internship programme is very good.

Q: How can the internship programme be improved?

Yeah, for the internship programme, yeah I think it can be improved if eeerr like eeemm,when the mentors before they come,I think they have been having some programmes where they take them through some eeeerrrr,..the mentors,u sually the

university has some programme for them.Yeah,some some training for them before they come to the school to come and mentor us.I think through that,the training,I think the university should hammer on the fact that they should do their part especially when it comes to their part of doing the teaching for the intern to see for some period before the intern also starts work. If they emphasize on that, it will help.

And I also.....for my experience and from my conversation with my friends, most of them, their yellow books, for my case, my mentor was helping me but for most of them, the yellow book, their mentors don't mind them. After the lesson, they oh just write something in it and bring it for me to sign, just write something in it and bring it for me to sign.

Is it the interns who fill the Internship book for their mentors to sign? (Probe)

Yes! yes, the mentors don't just...they don't just do anything. Just oh just bring it and let me oh just write something in it. Like for example, where you are supposed to enter our grades ahaaa enter our grades for that, there's a green part where you are supposed to enter, maybe whether the person did good, you enter it with 1 mark or 0 mark and add the total and give the person ahaa, most of our friends, they did it themselves, it was not the mentors who filled it. You will fill it then they say just fill it and look at how you want to do it then you fill it. So the mentors, I think they are not helping if it comes to them filling the yellow book and teaching for us to see and I think the rest also should also should try and do their part when it comes to satisfying the mentors because some of them are not having time to do those things because they think the universities are cheating them because they will do their work, they will mentor the child/the student and

at the end of the day, they will not give anything to them, their monies are just in the lost, so those who don't have time for us to do those kind of things, so they just come and they make us to put anything, so I think if there's improvement, the university too has a part to play, they should try and satisfy the mentors at the right time and when the mentors to come for that training, they should try and impact like on the fact that they should try and teach for some time for the interns to see and they should concentrate much in helping the intern to do the yellow book.

Transcription of Interviewee # 2 (Anita)

Date : Tuesday, 14/04/2015

Which institution did you go for your internship programme?

I had my internship at School B

Any special reasons for your choice of school?

Because of the closeness to my institution, I decided to choose that place so that in a case, if I need to make a research on anything that I'm thinking eeemm I have the library at my access then I can go there.

Q: How were you received?

Oh I was welcomed very nicely and friendly, the headmaster I had the interaction with the headmaster, but the HOD of my department I had a one to one chat with the headmaster, he saying that he was so glad to see a female mathematician coming there to do internship. I was really in a high privilege to even talk to the headmaster in person.

How were you assigned to your class and to your mentor? (Probe)

Ok eeer, the way I was assigned to my class and my mentor, that with my mentor interaction, we had a departmental meeting so they asked ,we were four who went there, so they asked those who were trained teachers and those who weren't trained teachers so that they could assign us to our mentors, so those with the trained teachers, they assigned them to particular people and those that we weren't eeerrr under any training as in who have not gone to any training college before coming to the institution.

You didn't go to any training college? (Probe)

No I didn't go to any training college. We were under the mentor, that is our HOD and at the same time given eeereeer, a sub-mentor..... yeah, because we had to go to those that we eeer.. they have not had any training apart from the one at the university, they were be en under the care of the HOD for that department then later, they will assign you to your personal mentor.

Q: Did you observe your mentor before you started teaching?

Yes, please, for three consecutive weeks. Yes, yes,yes please, closer to a month. After the three weeks, I was being assigned to a class.

Were you teaching core Maths or Elective Maths? (Probe)

I was teaching core maths. As a mentor he was guiding me in the process of teaching. But before that he will sit me down and he will be like a student then I will be the teacher. Then the way I will go and deliver in class, I will do to him. Are u getting the scenario, so you being the student so if I'm going to teach let's say addition and subtraction then how

I'll introduce the lesson and that I'll practice with him first before I go to the class so if there's a flap or there's a mistake, he'll correct me before I get to the class. Whiles in the class and even if there is something I omit or I didn't add or I'm supposed to add, he'll prompt me from behind that oh you have to do this and I'll continue from there.

Did he do that continuously throughout your internship period? (Probe)

No please, he did that on two consecutive weeks. We have five periods in a week so within every class, he gave me one to he...he... assigned me to only one class so that one class I go there on Friday and Thursday so he goes there...he comes along with me on that two consecutive weeks, are you getting me?

Does he sit in the class to observe you teach? (Probe)

He sits in the class. Yeah, yeah, yes please. Yeah then later he stopped.

Do you have any post lesson discussion with your mentor?

Yes, after the class then I sit him down then I ask him, that was when he was there in the process of my teaching, so I ask him how did it go then he'll tell me my errors then my good things, my eerr....my strengths and my weakness, so he'll tell me my strengths and my weakness then tell me to enlighten on my weakness.

Q: How will you describe your relation with your mentor? It was so cordial.

Q: Has it helped you in your vision to become a good mathematics teacher?

Yes. Ok, he has shaped my perception of being a maths teacher the way he interacts with me and I get it when I'm about to go to class. YES, I really enjoyed; he sat me down like

a father, he didn't see me like eeer…eeerr someone coming there to do his or her own thing but he sits me down then talk to me and guide me in all that way. So I felt like I was part of the students.

Q: What is your view about the internship programme itself?

It's very good but what I have to say about it is that, the moment for ...the period for the internship need to be extended, it should go back to the olden time it used to be one year not just a semester. Why? (Probe)

Because you wouldn't learn much. You would just learn a few and we are there to learn.

Of as in how you would become a potential teacher. You see here, we are doing the theoretical aspect so when you go there, that is the practical aspect. So learning the practical aspect, you wouldn't learn much there and so many things and places that you couldn't reach, are you getting what I'm saying? Yes, so I think the one year would have been beneficial than the short period.

Q: What will you miss most about your mentor?

My mentor, oh when it comes to social life, he always, sometimes he sits me down then he talks about social life, you see you are a young and a beautiful lady so you should be very careful when it comes to dealing with guys. He makes....that's the only thing that i love about my mentor. The way he ..... he sat me down and talked to me as a father so he always makes me feel at home.

So are you fully charged to go out and teach maths? YES.

Transcription of interviewee # 3 (Eric)

Date: Wednesday, 15/04/2015

I went to school B. Ok I don't have any particular reason for choosing that school but before we went out for the programme, I thought of my accommodation, how after the internship how I could easily be on campus, move around with my academic work without thinking of how I will get accommodation after I come from wherever I will come from, the lights bill, the water bills so I decided that people who go to school B, for their this thing have the opportunity of staying on campus then the school bus comes everyday to pick them to school then they come back so I decided that it was near. I also didn't want to go outside the school, go rent a room, then later when we are to come back to campus, rooms on campus will not be available and I have to go outside to look for rooms and stuff so I decided that I will choose School B so that I will have the opportunity to stay on campus then go do that exercise. After that I will already be on campus so I wouldn't have the headache of moving in to go and seek for accommodation. Basically that was the first thing that I thought of. The second thing is that it is also a good Ahamadiya school that I could go and help and with respect to my prayers and my normal life, going to there will not be of a problem to me. And what will be happening on campus too, I will have first hand information about it before we come back for the second semester programme.

Ok, when we got there, some of us we have already sent letters there. Ok when we officially got to the school, we were introduced to the HODs of the subject areas that we decided to go and teach so for us Maths students, we were introduced to the HOD by the

headmaster. When their school reopened, our had now reopened so we didn't know the actual date that we were supposed to officially report so we heard report that those students who have chosen to be in School B, the next day that was on Tuesday, that's 15th September was going to the staff meeting so we were supposed to be present but then some of us didn't have that information, so we were not able to attend the first meeting. So the next day, we reported and that day was the departmental meeting. So we were supposed to be present at the departmental meeting so we went and saw the Headmaster, the Assistant HM saw us and said this is the HOD for mathematics and you have a departmental staff meeting and you need to be present. So we attended the staff meeting and that was our first introduction. So our first introduction was with the HOD we told them our mission in the school and they welcomed us and we shared the subject areas. That is Elective maths and core maths. We did that with our HOD so some of us opted to do elective maths to teach elective maths then others too opted to teach core maths so with that we were given mentors that we were supposed to work under or work with in the course of the teaching.

Q: Who assigned the mentors to you?

The HOD and the maths department staff but ooo it was a departmental meeting so the HOD in agreement with the regular teachers in the school assigned us to the various maths teachers that they think that we should go to or we should work under so basically, the HOD did it. We were four, yes in the school yes.

Q: Were you all under one mentor?

Ok, one, the HOD takes responsibility of supervising the work that we do, vetting lesson

note, coming to observe us in the classroom he takes that responsibility because I learnt he is the recognized person or the experienced person who has been trained by the university about mentoring and taking care of this kind of internship programme so he mentors us in terms of observing and vetting the lesson note but he gave us to…..I had specific mentor but he was not in charge of vetting my lesson note, filling my yellow book and observing my teaching and marking.

Q: What was the role of the specific mentor?

For him, when I'm going to teach a topic, he gives me the topic that I'm supposed to teach, how some of them I should go about them, how I should teach the topic or how I should teach the students if I finish, sometimes he comes around to observe then I will ask him did I do well? The he will say for this you did well, but for this place you next time do like this, next time do it like that. So for him, he has given me the topics, I teach, where I think I have a problem, I will consult him, where he thinks I'm moving slowly, I remember the first two or three weeks that the topics were shared, I was teaching in a way like trying to develop formulas and do that kind of proving to let them understand the concepts but he was like for this place when you're teaching formulas it's like you are wasting time and time is also limited so go in this particular line you have to move a little fast; you explain, you give them example then you move forward. So he was telling me certain things, how I should go about it with the kind of topics given us and looking at the time limit for the term. So he was trying to encourage me and making me move forward with respect to the topics given. But when it comes that somebody must observe, and mark with respect to the school or the university requirement, it's the HOD who does.

He tells me what I did or what I should have done, but that one wasn't regular. Because he won't mark anything in my yellow book, he won't do anything so he knows he doesn't have any specific input to make. What he'll do is as I've already said, I've thought a topic, maybe he was around, no this thing; let me give you specific example: I was teaching the equation of a circle, was it equation of a circle; deriving the length of a line; how to find the length of a line given two point coordinates. So I went by using the radius, that kind of equation of a circle using the radius to find then later, you know the radius you get so I used the coordinate system then I get like, then his said that one was good but recently when you draw the circle then you want to use the radius and the two coordinates for the centre and a point on the circle, you also have to project it to find, to be like the Pythagoras theorem put it like right-angled triangle then you use the Pythagoras theorem so that naturally when they find that from the Pythagoras theorem, this one minus this then this one minus this is equal to this one square, then they will project it that = to the coordinate so that was what he said. That was the input he was making because I used the coordinates without going by or extending a vertical line to use the idea of the Pythagoras theorem but he said next time that is what is in renown books so next time I have to go by the Pythagoras theorem of finding the length of a line given two points on a plane so he made that recommendation.

Q: Where you given chance to observe?

Ok that one was not strict but when the mentor was going to teach at a particular time when we had not started teaching he once called us that oh I'm going to teach so come and see how I deliver. It was about once or twice. I think somebody went with him once. Ok I went with him once, then others went with him once. The HOD. But for our

specific mentor you know for these secondary schools some of them when we come it's like some sort of relieve so it was not strictly like they'll teach for some time and observe then you teach the way they teach. They have given us the topics when the time is due, oh I have to teach this three, ok then we started teaching. It wasn't like you observe them teach specifically; Ok if other departments did, that one I can't talk about it but for us, we didn't actually observe strictly our mentors teach for some period lets say two weeks, three weeks period then we were to go and do what they did. We were given the topics then the time table was also given. So those specific times, we went to the class and we started teaching. They came to observe. When the HOD is to observe the lesson and record in the yellow book, he sits for the period that you'll teach. He came twice and marked in the yellow book. But after that one, we didn't have that kind of thing.

Q: Has the mentoring shaped your vision of teaching mathematics?

Not really, but the only thing is, ok in a way it helped us because we had a mentor, a HOD who was mentoring us. He was that kind of serious person. His perception about mathematics and his perception about teaching mathematics to students; that was his philosophy. So, if him, immediately we came, he gave us an insight into if you are a mathematics teacher, what you are supposed to do so that students will understand or students will not fear mathematics. So all that he always give us advice about how to go about it or how to behave in the class such as the sense of humour that the teacher possess, how the teacher will present the lesson. Ok let me give you example with respect to him. When he goes to the class, and he wants us to observe the way he teaches, he teaches Home Econs class because he believes that those people are not mathematically inclined and in the school, he believes he's the only person that he thinks can handle them. So he

goes then tries to give some funny comment like in this class, there are two brains; the worried brain and the unworried brain. The worried brain is thinking about this is thinking about that and is disturbed about so many things. So those people are here. The unworried brain are those people whose fathers have paid their school fees, then they give them money and they don't have any problem and they are in the class. So he tries to synsethise the students that if you're here and you're not concentrating and you're not trying to concentrate and think straight then you're a worried brain and that you shouldn't worry you should try to concentrate on what he is doing. Then after that as he is teaching the concept, he tries to crack some jokes to entertain them so that as he moves along, students will not feel like they are doing something strange. But they all move along. So for him, his sense of humour is the tool that he uses to teach. He teaches the class to be happy appreciate mathematics. So that what he advice us to do. We should create an environment which students will feel free to learn. That is his philosophy. So that is what he always advice us to do.

Q: Where there any similarities between your HOD and co mentor?

My HOD is the more experienced type and as I said, he is the serious type and he doesn't joke with the job. For him that's what he tells us. When you are given the opportunity to teach students, don't joke with it. Do give out your best; do this do that. So the same things that he tells us that is what he tells the regular teachers that he handles. So talking about similarities, my HOD was more the serious one. He takes everything serious. He doesn't joke with anything. But for our mentors, we were like friends though if there are concepts that you don't understand, then he'll teach you that go by this one go by this one. In terms of trying to mentor me to be a good teacher, to deliver; no and but those mentors

also people who actually didn't do education. That's what I… is the one who I was assigned to; he was a UCC student, he did mathematics and that he was teaching mathematics. But I didn't see him as a pure mathematics education student or teacher so that aspect of how to teach, classroom this thing is not something that they think of or is not something which is with them. All they know is you are to teach concept for them to understand. There's formula, if it is suppose to be prove, you prove but if it is suppose to be example, that what you go by. But we don't deal with the methods but classroom activities or management, he is not that nature but our mentor is like that.

Q: Did the internship meet your expectation?

Personally I didn't have specific kind of expectation. I'm coming from that background that I've being a teacher before; I've gone to training college. So I didn't have that kind of specific expectation in terms of what the perception that most of us had is that oh it's a requirement that we have to fulfill in the first semester of the fourth year of the programme so we have to go teach for marks. You understand; and we also had the perception that we're going to get experience on how to teach at the secondary school level. That is the perception most of us had and as we were going, the other thing too was; ok personally, I also think; if other people had that one, I don't know. That we were going to find a problem and when we are able to identify a solution to the problem, we will use it as a project so we'll use that one as our project work. We will find a problem there then write something on it and present it as a project work to the school and also, we are teaching for marks, so we go there and practice the sort of methods that we were taught here, we go and practice for them to come and observe and give us marks. So I didn't have some specific expectation that I should get. Thought when we went, other

experiences cropped up; how to deal with the secondary school students, how they behave, how we have to teach them. That's what I was saying, because I taught JHS students before, the way I used to teach them, that's was how I started with and it was wasting time to them and actually wasting because we were not moving. The students too sometimes they couldn't help so we were not moving so they told us for this place, you have to do it like this. Students are like this. So that one too was a kind of experiences that we were having but to have a specific expectation that I'm going to be trained as somebody different, professional teacher, then I will come out and do this, ok some of us we have experiences.

Q: In your opinion was the student internship effective?

I will say yes, and I will say no. I will say yes, the yes depends on the student. Ok for our batch most of us who went have taught before, so we know how to teach or not that they know how to teach, they have experienced teaching before. So going to class to teach students was not much of a problem. So the mentors were not about you don't know how to teach, so I have to teach you. These are the principles, this how you have to go about things. No, you are given the topic; you went to the class and started teaching. If the person comes there and sees content problems and stuff, then the will correct it. I remember one time I was teaching tangent and normal and as I was trying to introduce the normal, you know the normal will combine with the radius to be extended. So I said this radius, this tangent, I did not mention normal. So my mentor came in and said tangent and normal when the tangent comes, the radius ceases to be radius but it is a normal. That was after the lesson. I was going and I was chatting with him in one of the lessons that he came to observe. So we were chatting about some of the stuff that I should

have done and those I shouldn't have done. He made that comment I said oh, I thought because the normal would be. So I learnt certain thing from him. So about they sitting you down and cooking you with the things that will make you a full flesh mathematics teacher, I will say no. but it is with respect to the students, we had one person who was not a teacher from SHS who is now to go and teach. For her, the mentor said that you haven't taught before so I will teach you. But he didn't have enough time to mentor her, let her observe him and also for her to teach like the way he wants. So she went to the class and taught the way she thinks she's supposed to teach them. So for her, to say that though she has gotten the experience of teaching SHS students, but for her to be equipped with the necessary tools that you were talking about to be a fully flesh mathematics teacher, she can teach in SHS now but not with respect to the aspect you're asking me about. She has go through teaching. But not going through teaching and applying stuff.

Q: How can the student internship programme be improved?

Some of the teachers who are supposed to mentor us see it as a burden to them. Though everybody may have his own perception about it. They say the school gives them some token; the internship programme the school gives the mentors something. So some of them as those things are not given, they feel like it's not important so some teachers decided that they won't fill the books of other students so if they are to improve it, the time that they will use to train the mentors, they should train them early so that those teachers they will train as mentors, they'll send students to them. Give them the specific tasks as to what they should do for the students. If I'm coming to…..for example, I know…..is there, they should pin point some specific people; like …..you are four so lets say we have four interns and lets say we have about four qualified teachers that Winneba

has trained that you people your job is to take care of our students. Give them the required thing that I have trained you to do. So I think that if that is done, it will improve in a way. Also, the students should be sensitized. You know before we go out for the internship programme, no much is known by many of us. We did pre-internship programme and the pre-internship programme, some benefited some did not benefit. How? For me, I was in Osofo's group. Osofo took time to go through the internship book; some of the specific stuffs you're supposed to go and do for example, the reflective practice, your portfolio, then some specific ones. He took time to explain and he talked about some of the expectations that you're supposed to do at the internship and some of the things that you're supposed to do and some of the things that you're not supposed to do. What will happen when your mentor is about to visit you. He gave us videos of people who have taught and observed their lessons to reflect on some of those things. But some of the groups who did some the pre-internship seminar didn't do that, some of the groups didn't have the internship book so they didn't know what was in it. We only go to class and prepare, today is our meeting next week you start teaching. Prepare your lesson notes, next week you start teaching, meanwhile there are some within us who don't know how to prepare lesson notes so we have to copy some others who know how to, we didn't know how to write reflective practice too. So we have to look at how other people have prepared their own then you also go by it. Before you go for the internship programme, like we taught that the pre-internship was going to be like sensitizing you for the programme so that when you go there, you know exactly some of the stuff that you do so immediately you are assigned, you know that my aim is to achieve this; I have to be able to reflect on the lesson then I can write reflection and you have to know how to develop

your portfolio so that you can actually as you are going by the stuff you are supposed to do. Even how to prepare marking scheme, how to; those ones, many of us didn't know so after the internship programme that we are doing post-internship that is when those things are explained and we have already finished, we don't know what to do. We are only presenting what we think we have seen or we have been told and those ones there are comments and the stuff. So if students are sensitized before we go for the internship programme and what they are expected because what I said, I didn't have some kind of expectation. What I know is we are going to experience teaching in the real classroom situation and after that we have to write, even reflective some of us didn't know. We only know that there is reflection in the yellow book. How we were supposed to fill it, some knew some didn't know. So if we were sensitized specifically, on some of the things that you are suppose to do when you go there and what you are supposed to bring, I think that one will improve the student and also improve the internship programme. Other than that, we all have this thing that you are going to teach and when it is time for supervision, they will call and we will prepare for the supervision. The university supervisor called that I will be coming this day to supervise you. So you have to prepare this day to meet me.

Q: Was the duration ok?

One semester duration was that I will say it was ok. For me, I will say it was ok because at a point in time you'll think you are tied. That's when I will say that it was ok for me because you experience one semester or one term teaching in a school; the kind of work you will be doing, I think it was ok for me. for some of us, our issue was what we will be doing in school but not outside the school. You think about your project work, you think about the courses that you will be taking .To some, if we don't go for the internship

programme, they are ok, to some if we go for one year, it's a kind of relaxation thing that we… its not actually work. That's why I said the student should also actually show that; because some of us actually found that noo, if this were one year, I wouldn't have trouble coming when you come, you only come and present a portfolio, you are finished, and you're going. Some also think that going for one semester is not that necessary, lets have the cause on campus, do finish and go because some people don't actually like the idea of going to teach, teach, teach. The duration, it depends. Some want it one year so that if they are graduating they are graduating, some also think that the one term is ok at least you will experience something. And if it is intensive, the one term can actually do something. The other thing is about the time that the internship programme is organized. I think one term, anybody who is serious you can experience something because for one term the other term it is the same things that you will be repeating. The one semester is ok. The only thing is the time. You know we will come and take one course. By the time you go and start learning what you are supposes to teach at the SHS level, at a point in time you forget the kind of things you have learnt here. Although they are linking but these one are a little of basic that when you don't learn, you can't even go and teach them so you become addicted to for a specific four months period, then later, for another four specific four moths you have to tune you mind to the previous ones like the ODE, Calculus that you have done, trying to remember certain things is difficult. So if the first semester, we rather stay on campus, we do the continuous content thing here, then we are properly equipped to go out teach, find a problem, write, prepare a portfolio, bring then after that come and defend it and you're finished.

Transcription of interviewee # 4 (Rosario)

Date: Thursday, 23/04/2015

I settled at school C. Just to explore a new environment and not in this community again, I've been in Winneba for almost four years and initially, those people didn't give me assurance. The two schools didn't give me assurance; in fact the three schools didn't give me assurance. I went to…… and they were saying the university owes them, this their supervisory the mentorship, they have to pay them some money but they have not been paying them, I should even see last year's people, the level 400s who just finished, they have not finished their results for them, they are waiting for their money before they can give them their results so I should leave my letter there, anything they'll call me and if they don't call me, then I should know that I'm not needed there.

Just like that! so I also gave it a try. I left my letter there. I went to ……, they said they were waiting for me and I wasn't coming, they had their people already so they can't do this, so I said ok, u maybe you let me put my letter down in case any of them wouldn't come again, I'll come and take a replacement, they said ok fine then I went school C too; they needed two and the two had already gone, so I became like a bat hanging there. So when the list came my name appeared in all the schools then I said, look at these people, then I said ok, I'll go to …., then these people, there is one disabled guy, he did his internship in the department, so the HOD called me that he wanted the guy to do it at that place so that, I should go and look for another school and I said o.k., fine. So I forgot about the . So later on kroaa the guy didn't even go there he said I should go back to the …….and I said no, I can't go.

Q: How were you received?

Eeeeeer yes, yes, there was an orientation for newly recruited teachers, interns and national service personnel, so the headmaster, the headmaster guided us with the assistant head of academics, o.k. let me say the administration, the top rank they did that thing for us. Then coming back to the department too, our HOD, after the general meeting, departmental meeting, we went for departmental meeting then he gave us what we are to do and what not to do then he even asked us like we should pick a topic and how best we can handle it ahaa so they shared ideas there at the initial and he told us what if we need any assistance, they are always there though they have assigned us to individual teachers around but he is the HOD so he'll come and supervise us for aaaaa the rest of the supervision, anytime we are preparing for a lesson, he'll come and supervise us.

Q: Were you given the chance to observe?

Actually, yes I observed my mentor in the first week. I observed him, in the first week, my assigned mentor.

Assigned mentor, apart from the HOD who is supposed to supervise you for your.. your.... will I say your real work when you are doing your real work. Anytime you want to teach, the....your...he, the HOD will be around before you teach anytime you want to ,if he wants to give you marks ahaaa but sometimes, he comes to observe like for few minutes then he goes ahaaa, that's what he does.

Does your mentor vet your notes? (Probe)

Its the HOD that vets the notes, that does the vetting. My mentor was just like eeeeer, will

I say a figure, eeeer an assistant who they said I should observe him for that week so I observed him for 2, 3 days then I started picking up from the some class that he had to go in that few days....that week. Or else he started teaching directly from some of the classes so I observed him then he wasn't around the next time so I went and started teaching those topics Just like that! just like that.

Q: Do you normally have discussion after observing your lesson?

Yes, he doesn't normally have pre discussion with me before the lesson but we'll read through the post, the post lesson discussion.

Q: How will you describe the support given by your mentor during the internship?

In this case, will I say I had two mentors here? The HOD and initially I've been to his class to observe his lesson before. I'll say he was, he was discouraged it was a semester but I'll give him eemmmm average, not above average because at a point in time when you need his services for before the lesson, you might not get him, he's always busy eeeeer he's always busy but after the lesson then you'll get him when he wants to teach but he has not supervised me more than eeeer four (4) times, the HOD. My mentor himself, to be frank, the class was given to me to handle because he took up eeerr, he was doing another course, so my coming was a halleluiah to him and I was given 25 periods, I was handling 25 periods. Like seriously, like seriously. I was been ……..I was teaching like a full teacher. I was writing lesson notes, preparing my lesson notes. I was teaching, so the first few days, he observed me the next few days, he wasn't there again. That was where the trauma started. The following week there off, everything was handed over to me fully as a teacher. So that first 3 days, if I close from school, the bus brings me home

like 3:30-4:00, if I get to my room then I sleep I wake up around 10:00, in the night! I'll be totally exhausted!!

Q: In your opinion has your experience with your mentor shaped your perception about teaching mathematics?

Yes, yes especially the HOD. I'll speak much and then during observing his lesson and sometimes coming to my class even as I teach, he brings the real world into the classroom. Like for example, I was teaching angles, I was teaching angles then he gave the class a scenario like, they should look around and see where eeeem: definition of angle where they can get like, where two lines meet and this kind of thing then you see that the corner of the building, the corner of the chair, the corner of the table then he asked them, so they should look in their kitchen. They told him the corner of their kitchen cabinet forms an angle there. One even eer one girl even said the frying pan, it forms a circle and the circle alone is an angle of 360, so he gave examples and said in their dormitories or where, their bedroom. They said the leg of the bed between the bed and the ground .They were giving a lot of scenarios of angles from their rooms then I was like wow! This man, he can, he can teach. It looks like he brings the real lesson into the students' environment. Most of the lessons that I observed the whole lesson that, I were seeing difficult to eeereeer this angles at point vertically opposite angles, vertically opposite angles. Then he even came to demonstrate to us saying; like you see that he made like this and one student that the student should come and put his buttocks in the same way; that this and this form an angle at the top there...and he was so funny and he was... It made the class was so lively. He doesn't make the lesson like chinchinaaa a must, naaa but I've learnt from him from this kind of person, maths is not always like on the

board, on the board; bring it to the real environment and then see its relation there.

Q: Do you think the student internship programme was effective?

Yes, yes, yes. It was effective. It made us to be exposed to the things that go on in the real job market. You gain experience here before you even go out there and it even made us to unearth some of the potentials that we have we never knew we had them. Like some maybe you were placed to be in charge of eeer sporting activities. You try to be a coach; you have to read about being a coach. You are teaching how to...it's not like this, you do it this way and this their inter house playing and stuff, you make leaders for the group mmmm, that you'll be exposed to everything in the environment, what goes on practically ahaa. We were given the opportunity to teach, so we'll identify our own strength and weakness.

Q: How can the internship be improved?

O.k. like, some schools they don't have accommodation. Like where I went so we were faced with accommodation challenge, so we travel from one community to the other. We were not staying in the community, so we decided to travel; we didn't get accommodation, so we travel from like say Winneba to that place daily. That time too eerrr they gave assistance by providing a car but when a car is not there, you send more than.....so there's much money involved in it and then eeer not all schools have got the this teaching and learning materials, ehee so sometimes you have to find ways and means of providing your own teaching and learning materials. Sometimes you might need the help of the mentor at that point in but he or she might not be there to assist you but he'll make himself available after you have self improvised for the lesson but before the lesson, you

will not get him ahaa. So I think if they are, they should give us daily assistance; not always when it's time for marks, to give marks in your yellow book that they should come and sit in, they should be coming frequently, and I think if the supervisors themselves should come not just once, they should come more than once it will be of help, it will be of help if they come more than once.

Q: Was the duration ok?

Not really, if you want to go into it, the internship I think three months is not enough because we go to the school the first week, they are not prepare for lessons. They are working around and maybe it starts in the second week; and in the second week too they are now doing revision on what they did in the exams in the previous academic year. So as for those ones, you now be going through. SO as I was saying, they should come frequently. The duration wasn't enough because of the.....then we have lots of sporting activities in it, then lots of sporting activities, you might, we might have a lesson but they'll tell you that this time we are going here especially if the school comply for another zonal competition, you have to quit some classes for them to go, sometimes they will tell you sir, we are going to cheer our people up so we won't come to the class. It affects the whole lesson.

What will you wish your mentor had done more? (Probe)

He should have been there anytime I needed his help. He should have been available every time. I wish to just to get more from him, he should have been there always for us because it's his absence is a little bit disturbing.

The HOD. Ok I'll say the two of them eeeerr not always that they should wait and after

the lesson that they want to do the post eeeer class discussion with you. If you discuss that thing with us how are you going through the lesson? Let's have the; before you go into the lesson itself then after the lesson then we discuss your..... What are your strengths, what are your weaknesses but he does that after the lesson. So I wish he would have been there to just start from ideas from him, like if you want to go and teach this lesson, how do I go about it ahaaa and maybe some books around to help cause sometimes, some of the books, you have to go and get the books yourself ahaaa. Lesson preparation because you are new to the system so maybe they know how the ground is.

If your mentor doesn't engage you in pre-lesson discussion, how do you improve? (Probe)

Yeah, yes. Ahaaa, so let's say maybe after that their eer discuss with you, then that's where you know that oh, I eeheee should have done this at this point in time, I should have done that at the point in time, ahaaaa. That's what eeeer, after the lesson then they'll point out those things to you that you did this right but this, I think you should have used this method when the first method wasn't going through. You should have used the second method to do the approach. Sometimes kroaaa I even came back to campus to solicit ideas to go and teach think I came to Jones kroaaa I taught it in the first class, second class then I came to him then he taught me other methods to go and use in the third class and it helped .Teaching undefined functions, yes. My mentor gave me an idea, the HOD but it's like sometimes the idea is becoming some I taught core maths. Yes, I taught core maths, form two.

Transcription of interviewee # 5 (Nilla)

Date: Wednesday, 13th May, 2015

For me, I have a small girl and she's schooling so I wouldn't change a school within that short period aahaaa so because of that I had to go to school A.

Q: How did it feel like being a maths madam who has just arrived in a school?

O k personally, I taught in a J.H.S, I taught science for almost 6 years before coming here but when we talk about mathematics, I've not handled it before. I've not taught maths before, so prior to the programme, I was contemplating; will I be able to fit into the ahaaa so I was kind of...I wasn't sure and when I got there, I saw that oh what I was afraid of, it' s even; because I thought I may not be able to eeer do well in the field of mathematics but when we went and we started it, I saw that I was far better..far far better and you know, they are girls... ahaaa then they're always... mostly girls do fear maths, so some simple concepts that you expect them to know, they don't know. So I'll say in general, the programme is a very good one to me, I didn't have much challenge as I was perceiving ehee I...like from the start that I won't be able to. It's a very good experience.

How were you received?

That one..... that one, I think school A administration has problems so far as these things are concerned eeee. They know of the fact that most students like to hang around and do it with them due to one or two reasons, like my reason eeheeee, because of that, they are like monopolistic market be eheeee. so they don't handle. They don't handle us well but how I was assigned to a class, that one, w e were we were shown eeeer the maths teachers

so we also at eeer what, eheee keep company with the maths teachers and our mentors too, our assigned mentors; every work was done by the mentor.

Who assigned the mentor to you?

The assistant head, the assistant headmaster. You see, we were 5 so he just told us that this so so and so, what's his name mpo, so 5 we are to see him for anything. So we were seeing him and... he did very well. Yes, and he was our mentor and he was able to mentor the 5 of us and even he told us that he had another student from another eeer school where he was mentoring, without him the headmistress will be there assisting us.

Who assigned you to the classes?

It was Mr…….Yeah, he made us ....he...he had a brief meeting with us and then he tried to see the this thing...the syllabus and the number of classes and the number of mentees around ehee. So he'll just... you, can you take core maths? you, will you take elective maths?, then we those who were handling core maths, he gave us out also to.....i was give n assistant mentor, it means there were two maths teachers there. He's one and the other one is one, so he's handling the elective maths then the other one is handling core maths, ahaa. So that was how we were. We were given the classes.

Were you given the chance to observe?

Yes, we were.... I was given time to observe; though they told us that we should start right away but I was working hand in hand with the assistant mentor. He was handling form threes by then the form ones didn't arrive yet, they delayed, it was a private school, they delayed so eer when he's teaching form three, I'll sit at the back and be watching

while he teach for several times before the form ones finally arrived and he asked me to handle them, myself and one guy ahaa to handle the form ones as their maths teacher.

Yes, but we were two and that one, you see the classes were 6, form one ....6 classes; so, we shared them three three. So I had 3 and he also had 3

My mate mmmm yeah

Does your mentor look at your lesson notes before you use them to teach?

Mmmmmm.Yes, the general mentor,the he, he'll look at the lesson note book, correct mis takes mmmmm then he'll caution you to next time if you're going to write, write this way. Yes, before you use it to teach.

Any post lesson discussion?

Eeeeer after....mmmm, like, we, myself and the mentor? Mmmmm that one will be between me and the....assistant mentor, yeeh because as for him, he's handling ,the mentor is handling elective maths, so if there's anything pertaining to form ones core maths, then it's the assistant mentor that we do discuss with. But sometimes, he'll call all of us then we'll have a group meeting. Yes, we were 5 ehee then we'll have a group meeting , if there's anything that we have....like reshuffling and something then we quickly do but pertaining eeer post teaching discussion, he does but not often; you see, ee er it's between the other one eeeer, the assistant.

Has the internship helped shape your vision about teaching mathematics?

Yes, it has helped me so much. In fact, I have enjoyed it, yeah it's a very nice experience, you see that they are girls and teaching them, you see that I'm a lady too, a lady wants to

teach maths, she wants to understand why this is like that. They don't leave any stone unturned, that's we ladies. So I also go to that lowest level to explain everything from the bases ahaaa, so it was a nice experience. We were...oh they liked me, we were together, they were sharing their problems with me and we were trying to talk.

Yes, yes, yes more or less, I'm a lady teaching maths oh so that one by the Grace of God.

Yes, yes

What is the greatest thing you learnt from your mentor?

The greatest thing I'll say doesn't. emmmm pertain his teaching though when we...we talk about teaching I've learnt something better, the one that I like was his relationship with people. He makes the work easy with.....if you don't do well, because he's this thing..... you should go this way but the way he even says it, you will like it. He doesn't make it to o difficult, he takes, when he's talking to you, he doesn't use words that will scare you and he'll always bring you closer to himself and he was..... that kind of free type....easy to approach eheee let me use that one. He doesn't..he's not arrogant..... so I've learnt that thing; if one day me too I'll be assigned eeereeh I'll be leading some people, I have to know how to... because in that case we were the subordinates and he was the head so oh I don't know the term to give, just give and on our level and everything was just moving smoothly. If you want to consult him for anything, you are not. I mean you don't panic be cause you know he will warmly receive you and give you guidelines ahaaa, so that it is... that's what I like for academics, one day he was teaching elective maths and we sat at the back to observe him, he's very good. What what I learnt was that as a teacher, you must have the stuff when you go to the board, you will not be fumbling or you will not be

found wanting,you won't disgrace yourself mmhmmm. He was just delivering the content one after the other ahaaa.

Was there any topic that touched you so much?

Mmmmmm,which topic. Which topic....., can I remember? One thing is that I'm not..I'm not with him,I'm with the assistant

Sorry, as for the assistant, he's not well vested in teaching, there's difference between kno wing the content and then methodology..... teaching it. So when you see him comparing those things with you, he doesn't teach to my liking, he doesn't he... his. his methodology is very bad....maybe I..I...that he wasn't, maybe... but for the content, he knows it but how to eeeeer unveil it to the students mhmmmm; so he'll teach a topic, it seems few of the students that will perform and he'll be telling you that he'll teach them the base, give them work, they'll all fail potoooo and aaaah he'll put the question, you see that was form 3,so metimes if he didn't come in, I teach, he was teaching this topic eeeeer quadratic expressions not equations, expressions, that's without the equal to sign. He was teaching that topic and the way he was going about the whole thing, I didn't like it. I saw he was fumbling,..... he was jumping aaah then he'll bring question like this one, and give to the students that these are the questions that you are going to solve; so when he comes to class, he'll be mentioning today we are solving question number this, question number that, as if if they go to the exam, they are going to solve those same questions; meaning he was targeting solving questions but how to let the students themselves be self reliant ahaa, I don't think he was doing it and I was...I was, he wasn't there then I started a topic, when he came, he came and whispered into my ears..if you teach it like that then you will

not finish this syllabus.

Mmmmm but he didn't say it loudly If ....if you teach it like that, you'll keep long they're not...they don't understand I have to; he said no nono, don't mind them, as for them, that's what they'll say....that's what they'll say; they'll surely say that but don't mind them, just continue, that's what.....so me too, I've advised myself.

Q: Was the student internship programme effective?

Yes, even though the period was limited, it was so helpful because I've developed...I've gained experience and I think right now if I should be posted to any school to go and teach, the standard of the school where I'll be posted wouldn't be too different from the one I've been to. Probably it will be, it may be mixed school when I was in a single sex school ahaa and then, I don't think emmm there'll be more problems, like they'll be too be tter than this, so at least this has given me the stepping stone. At least this is the background, so I'll build on it.

How can the programme be improved?

Actually, I've not seen anything. How they should improve upon it is that, that one to the various schools and their administration because for this eeeer my school, the administration is poor, the woman is not, You will go to a whole school, no common pure water, everything is dry like that, meanwhile we were billed, this...that particular semester, we paid huge sums of money purposely because of that internship programme.

No, no, we paid to the university; so if there's any preparation, they should have done it without us so that when we go, we'll also have the …..not pure water, ever since I've

been to that school. All of us, interns about, we were all haboured in one room, no one sachet of pure water from administration to us. Nothing and we even do extra classes. That extra classes that we do, they don't pay us. You know, they keep the money. They kept the money aaaaa when we were then they said they were coming to disburse...eeeer....share the money. They cheat us; they gave us Ghc 40 for a whole term that we stayed with them. And as for them, their problem is that they know we...we were learning to teach these so every year more will come, so whether they treat you well, even if there's any information, they don't pass it to us, if there's any announcement, any information....maybe they want the students to come out and weed or something, we'll all be in the room, then you'll see that students are gathered, they're doing something then we'll also have to go to them. No,no,no, their teachers are not keeping with us, their permanent teachers. We the interns were put in one room, i think that was the staff common room and if there's anything.....everybody was complaining about, i think we were not part of the administration, so that one, that is within the school but for the university, the improvement is that the university should have a..... chat with the eeer school the administration. They have to collaborate and see how far they can help so that those that don't provide any at least water ahaaa the least thing is to give the person water. Ever since I went to that school, nobody ever gave me pure water; meanwhile I've been picking taxi...I board taxi in and out Ghc 2, everyday; if I go and I buy anything there ,there're no food around, the one that is the rice at least Ghc 4.Well the whole programme was expensive, yeah, the programme was expensive.

Was the duration ok?

The duration, one semester, you see, it was....the one semester was beneficial to we

students but if it had been prolonged to be let's say one year, it would benefit the students because I suffered building the foundation, they should have allowed me to see the end of that, you see...teaching..... if you are teaching and few minutes you leave for another person to come and.... you see the work cannot be effectively done. So, for me, that half a year benefited me because as I've come back, my project work, I'm writing but if we had been allowed to stay there, I think it will be of more benefit to the students because I was really enjoying the work when it came to a halt. I started enjoying when we had to end.