

**FIDELITY OF IMPLEMENTATION OF THE BACHELOR OF EDUCATION CURRICULUM IN PUBLIC
COLLEGES OF EDUCATION**



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FOREWORD

Over the past three decades Ghana has made great strides in both economic and social development and the country is poised to make even greater progress in the immediate future, so Ghanaians can be proud to be part of an outward-looking, prosperous society whose future is based on internally generated innovation and trade. Education has a key role to play in achieving this progress. Ghana both deserves and needs an education system which promotes and develops an inclusive, creative, critical thinking, problem solving, technologically and communicatively literate society with the 21st Century skills, knowledge and values that are essential pre-requisites if the country is to participate fully in today's world.

Initial teacher education is the foundation upon which the basic education system is constructed. As Ghanaian educators we had a vision for a teacher education system which is practically focused, enabling aspiring teachers to master both the theory and practice of effective education, embracing engaging approaches to teaching, learning and assessment so that outcomes for children and young people improve across all Ghanaian classrooms. The manifestation of this vision for teacher education was the four-year Bachelor of Education Degree (B.Ed.) integrating the key principles and practices of the teacher education reform policies: The National Teachers Standards, The National Teacher Education Curriculum Framework, The National Teacher Education Assessment Policy, and the School Partnership Policy. The B.Ed. was the result of in-depth consultation and extensive collaboration between all stakeholders and the support and participation of the Ministry of Education.

In 2018, the first year of the B.Ed. was implemented in all the newly affiliated CoEs of the five teaching universities: Kwame Nkrumah University of Science and Technology (KNUST), University of Cape Coast (UCC), University of Ghana (UG), University of Education, Winneba (UEW) and University for Development Studies (UDS). It is now time to see how the vision for teacher education is turning into a reality. To this end, Ghana Tertiary Education Commission (GTEC) agreed to lead a Fidelity of Implementation (FOI) evaluation into the extent to which the B.Ed. is being implemented as intended by the curriculum designers and in line with the principles and practices of the reform. This evaluation is also timely as it is 4 years since the Government of Ghana (GoG) regulator (then National Accreditation Board (NAB) now GTEC has visited each of the 46 College.

Members of GTEC have worked with expert colleagues from Conference of Principals of Colleges of Education (PRINCOF) and the five teaching universities to design and undertake a comprehensive and systematic evaluation of the implementation of the B.Ed. in each of the CoE. This report details the outcomes of the FOI evaluation, it:

- provides an understanding of how and why the B.Ed. programmes are working, and the extent to which outcomes (high performing new teachers) can be improved further
- identifies areas of strength and areas required for development locally, for individual university affiliations or CoE, and nationally
- sets out local and sector wide action plans, 'road maps' to strengthen implementation
- provides an evidence base for GTEC's continued work with the universities and CoE to ensure the B.Ed. is implemented effectively.

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ACKNOWLEDGEMENTS

This report on the Fidelity of Implementation (FOI) of the Bachelor of Education (B.Ed.) curriculum reflects the invaluable contributions of many individuals including the assessors, staff of the Ghana Tertiary Education Commission (GTEC), the National Conference of Principals of Colleges of Education (PRINCOF), and other experts.

Special thanks to:

GTEC for the leadership and oversight in conducting this FOI exercise, especially Prof Mohammed Salifu and Dr Ahmed Jinapor.

PRINCOF for the immense support in ensuring that Colleges of Education were available for the visits.

Vice Chancellors of Kwame Nkrumah University of Science and Technology, (KNUST), University of Education Winneba, (UEW), University of Cape Coast, (UCC), University for Development Studies, (UDS), and University of Ghana Legon, (UG), the five public universities implementing the Bachelor of Education in Initial Teacher Education for all the support in ensuring that faculty members were available for the research.

The team of assessors who played a very significant role in travelling several kilometers over the length and breadth of the country, collecting the data for the FOI at all 46 colleges of education, through interviews and classroom observations, school visits and authoring the initial reports for individual colleges of education. Those inputs provided the skeleton that served as the basis for the draft national report. They scanned through all the individual college reports including the interviews and observations, moderated the reports for consistency and identified the strengths and weaknesses as well as the interventions to mitigate the weaknesses.

Then to Robin Todd and all other members of the T-TEL team for contributing in diverse ways to the success of this FOI.

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CHAPTER ONE

INTRODUCTION

Only by understanding and measuring whether an intervention has been implemented with fidelity can researchers and practitioners gain a better understanding of how and why an intervention works, and the extent to which outcomes can be improved. (Carroll et al., 2007, p. 1)

Introduction

The year 2019 saw the introduction of the Four-Year Bachelor of Education Curriculum in the 46 public colleges of education to replace the existing Diploma in Basic Education Curriculum which was found to be inadequate in preparing teachers for the 21st century classroom. The B.Ed. also raises the qualification of all Ghanaian teachers to a degree level. The B.Ed. is practically focused on initial teacher education and is made up of three specialism programmes for training teachers in Early Grade Education, Upper Primary Education, and Junior High School Education. These programmes consist of a diverse array of interventions which can be grouped into four: Teaching and learning of student teachers, Assessment of student teachers, Preparation for, and student teachers' experience of, Supported Teaching in School (STS), and Tutors' professional development. All of these are intended to be implemented in accordance with the teacher education reform policies: The National Teacher Education Assessment Policy (NTEAP), The National Teachers' Standards (NTS), The School Partnership Policy (SSP) and The National Teacher Education Curriculum Framework (NTECF).

Since this intervention three years ago, no comprehensive evaluation has been carried out on how faithfully the Colleges of Education are implementing the curricula although an intervention, the Transition Support Fund assessments (T-TEL 2019), was carried out to incentivize CoEs to implement the B.Ed. curriculum effectively during the early stages of the implementation. Little is therefore known about the integrity of implementation of the intervention by colleges of education and the elements of a curriculum that influence their outcomes (James Bell Associates, 2009). This information however is very much needed to determine the weaknesses (and strengths) of the implementation and make decisions to address them. Programme evaluation is increasingly included in studies of educational interventions (Harn et al., 2013; Webster-Stratton et al., 2011). In the many evaluation studies carried out, researchers often report on how the quality of delivery varies across different implementation institutions, and in our case, the forty-six (46) Colleges of Education in Ghana (Odom et al., 2010; Mowbray et al., 2003; Swanson et al., 2013; Durlak & DuPre, 2008). It was therefore deemed necessary for the Fidelity of Implementation (FoI) evaluation research to be conducted.

Purpose of the Study

The purpose of the study was therefore to help fill gaps in literature, focusing on the implementation fidelity of the B.Ed. in the 46 public colleges of education since implementation commenced.

Through this it was intended to:

- determine the extent of implementation of the curriculum in the colleges of education,

- identify areas of strength and areas for development at the individual college level and nationally,
- identify local and sector wide action plans or 'road maps' to strengthen implementation
- provide an evidence base for GTEC's continued work with the universities and CoE to ensure the B.Ed. is implemented effectively.

These intentions provided the basis for the research questions for the study.

Research questions:

1. To what extent is the B.Ed. curriculum implemented with fidelity by each of the colleges?
2. What is the overall fidelity of implementation of the B.Ed. curriculum for all the colleges?
3. What are the strengths and weaknesses of the CoEs in the implementation of the B.Ed. curriculum?
4. How can the weaknesses be addressed?

In order to answer these research questions, the study collected critical information about the B.Ed. programme in four key areas

- teaching and learning of student teachers
- assessment of student teachers,
- preparation for and student teachers' experience of STS
- tutors' professional development

The information gathered allowed for the assessment of the overall quality of the programmes implemented in the colleges.

The Fidelity of Implementation (FOI) was selected as the tool to provide the conceptual and methodological framework to achieve the purpose of the study. Fidelity of implementation broadly, is the degree to which treatment is delivered as intended by its developers (Dane & Schneider, 1998; Moncher & Prinz, 1991; Orwin, 2000; Yeaton & Sechrest, 1981). Curriculum fidelity specifically refers to "determining how well a program is being implemented in comparison to the original program design" (Mihalic, 2004, p. 2; O'Donnell, 2008, p.33), "a method of determining the alignment between the implementation of an intervention and its original concept" (Furtak et al., 2008, p. 362), or "the degree to which teachers implement an intervention, curriculum, innovation, or program as intended by the developers" (Pence, Justice, & Wiggins, 2008, p. 332). In summary, the fidelity of curriculum implementation can be defined as the degree to which teachers or interested parties adhere to the original design of a curriculum when implementing it. Fidelity of implementation is also referred to as 'integrity' or 'adherence' of implementation, i.e, how well an intervention is put into practice. The study of fidelity would provide substantive assistance to curriculum designers, the mentoring universities, the implementing colleges, and their tutors to see how far they have internalized the required changes (Hill & Erickson 2021). It is therefore a potential moderator of the relationship between curriculum interventions and their intended outcome, in this case, its adoption by participants.

Determining the extent of Fidelity (Adherence)

Researchers have mostly identified five dimensions for evaluating curriculum fidelity: adherence, dose (exposure)/duration, quality of programme delivery, participant responsiveness, and programme differentiation (Dane & Schneider, 1998; Dusenbury et al., 2003; O'Donnell, 2008). However, Carroll, Petterson, Wood, Booth, Rick and Balain (2007) noted deficiencies in measuring fidelity based on the five elements as it does not allow the capture of a comprehensive or more complete picture of the process. They advanced a reconceptualized model that includes two other dimensions, namely facilitation strategies, and intervention complexity. This study therefore utilizes the seven-dimensional FOI framework.

Two broad ways of FOI reporting have been identified: based on Individual FOI dimensions or a composite reporting of all dimensions. The most preferred, however, is the Individual FOI reporting format. It is preferred because it offers explanations for disparities that may be observed through narratives. There are instances however where composite or generalized outcomes are reported but that do not offer explanations for any observed disparities. This report covers both the individual dimensions and generalized outcomes. The threshold for FOI per definition is one hundred percent (100%) and any disparity must be explained. This report is geared to providing such explanations.

CHAPTER TWO

METHODOLOGY

This chapter describes the methodology used in the study. It identifies the context, population, sampling procedure, methodological framework, instruments for the study, data collection, data cleaning, and analysis of data.

The FOI evaluation was carried out in all 46 public Colleges of Education in Ghana. The exercise was designed to evaluate the fidelity of implementation of the B.Ed. programme. The FOI employed a sequential mixed-methods approach where both qualitative and quantitative data were collected to triangulate the data. Interviews were conducted to provide clarification and further information to complement the data gathered from lesson observation or document scrutiny.

Study Context

The 2015 reform of teacher education brought about changes in the structure, content, pedagogy, assessment, and management and leadership in the colleges of education. It placed student teachers' learning, practice, and values, through the National Teachers' Standards, at the centre of the curriculum. It involved the following: a close link between pedagogy and assessment, integration of digital literacy, gender, equality, and social inclusion (GESI); 21st Century skills in teaching and learning; integration of content, pedagogy, and technology to ensure the development of skills in pedagogical content knowledge; and emersion of student teachers in the school system through supported teaching in schools (STS) and supporting this through the continuing professional development of tutors. As mentioned, these interventions were grouped into four key areas in the study, namely teaching and learning of student teachers; assessment of student teachers; preparation for, and student teachers' experience of, STS, and tutors' professional development.

In August 2019, the 46 colleges were affiliated to 5 public teacher education universities, - Kwame Nkrumah University of Science and Technology (KNUST) with 5 colleges, University of Ghana (UG) with 6 colleges, University for Development Studies (UDS) with 6 colleges, University of Cape Coast (UCC) with 14 colleges and University of Education, Winneba (UEW) with 15 colleges. The affiliation agreement required the universities to support the colleges through professional guidance, staff development, assessment, mentor training, supported teaching in school in the implementation of the B.Ed. curriculum. It needs to be noted that there are two curricula in operation in the colleges. While the colleges affiliated to four universities (UEW, UG, KNUST, and UDS) run one curriculum, the 14 colleges affiliated to the University of Cape Coast run a slightly different curriculum. The differences border on assessment and specialization. While UCC colleges start year one with their subject specialization, the rest of the colleges start the specialization from year two. Also, the National Teacher Education Assessment Policy (NTEAP) is the official approved policy for assessment of student teachers; it requires the ratio of continuous assessment to external examination as 60:40. However, UCC colleges assess their student teachers based on 40:60 ratio in favour of external examination.

The two curricula are substantially the same with each consisting of three specialism programmes. These are Early Grade Education, Upper Primary Education, and Junior High School Education, aimed at preparing teachers for the different levels of education. However, although programme differentiation was considered as a dimension of the FOI, in this study, the detail of these differentiated programmes was not the subject of concern in the study; the focus was on the general principles and practices that apply to all the programmes.

The 46 colleges have a total of 2,011 staff with only 49% holding the required minimum qualification to teach in the colleges which is research based masters' degree. A substantial number of staff (91, that is, 4.5%) hold bachelor's degrees and diplomas. There are 29 PhD holders. The gender parity index for teaching staff is 0.32 in favour of males. Bagabaga college of education has the highest number of staff (71) while St. Vincent college of education has the least number (25). At the start of the reforms Colleges were encouraged to embarked on plans to upgrade their staff to enable them to acquire research masters or PhD degrees. However, as at now, thirty colleges still have the majority of staff with Bachelors' degrees, a situation, which does not auger well for effective implementation of the B.Ed. programme.

Methodological and Conceptual Framework

The extended version of the conceptual framework for implementation fidelity Carroll, Petterson, Wood, Booth, Rick and Balain (2007) was used to evaluate the adherence of the colleges in implementing the B.Ed. curriculum and determine the factors influencing its implementation.

The full dimensions of the FOI framework are presented below.

1. Adherence

Is the B.Ed. programme being implemented in the CoEs as intended? Specifically, are the requirements of the National Teachers' Standards, National Teacher Education Curriculum Framework, School Partnership Policy, and National Teacher Education Assessment Policy being adhered to?

2. Dosage/Exposure

Do *all* student teachers receive the required teaching, STS, and assessment to enable progress towards meeting the NTS and preparation to teach the Pre-tertiary Basic School Curriculum? Do tutors receive the expected professional development?

3. Programme Differentiation

Are the programmes differentiated to enable effective preparation of good early years, primary/upper primary and junior high school teachers?

4. Quality of Delivery

Are the inputs and activities sufficient to deliver the B.Ed. programmes effectively? This requires integration of cross cutting issues, GESI, ICT, assessment, STS; fit for purpose infrastructure & resources (library, science labs, science equipment and facilities); appropriate staff qualification and knowledge of B.Ed. requirements.

5. Participant Responsiveness

What is the extent to which participants are engaged and involved in the activities and content of the programme? Are participants, including student teachers, responding to, and engaged with, the B.Ed. in the way intended? What are their views about the impact, outcomes, and relevance of the B.Ed.?

6. Facilitation Strategies

Are manuals, guidelines, handbooks, professional development sessions, training, QA, capacity building and incentives provided sufficient? To what extent is blended learning being employed and what is the impact of the B.Ed. on student engagement and learning?

7. Intervention Complexities

What are the barriers to effective implementation and delivery? How can these be addressed? These include contextual issues such as lack of adequate resources, poor infrastructure, internet access as well as staff motivation, qualifications, and student engagement.

These dimensions are not mutually exclusive but overlap. Thus, for example, Quality of delivery may overlap with Participant responsiveness. According to Carroll, et al, (2007) “The measurement of implementation fidelity is the measurement of Adherence.” In this study, Adherence dimension is therefore seen as the summation of the remaining six dimensions of FOI. Adherence therefore is equated to implementation fidelity. With this as the framework, the critical components of the B.Ed. were formulated. Carroll, et al (2007) notes further that the level of fidelity achieved may be moderated or influenced by the other dimensions, e.g., intervention complexity or facilitation strategies.

Selection of Core Components

The first step in developing a measure for FOI is to identify critical or core components of the intervention. In the study, this was done by involving designers and experts in analysing the B.Ed. curriculum to identify the four critical components or areas. These components were chosen based on the following: their importance in the intervention, their measurability, their feasibility, and meaningfulness (Backer, 2001; Stains & Vickrey, 2017). This ensured the content validity of the components. After settling on the critical components, tools to collect data to characterize the presence of these components during implementation were developed (see Appendix A). A multimethod approach involving lesson observation in schools and CoE, observation of critical facilities, interview of critical participants, document analysis was used. Instruments were developed for all these.

Design of the Study

The fidelity study used a multimethod design (Creswell & Plano Clark, 2011) that utilized a situated life-world approach for the collection and analysis of data required in answering the research questions. It employed what Creswell and Plano-Clark (2011) refer to as a convergent parallel design that brings different types of data on the same research topic to best address

the research questions by maximizing the strengths and minimizing the weaknesses of a single design (Davis, 2014). The quantitative aspect provided objective data, while the qualitative aspect of the study allowed for a deep exploration of the complexities of tutors' experiences when implementing the new B.Ed. curriculum in their colleges (Roman, 2016).

Population

All the 46 public colleges of education in the country constituted the population for the study. The decision to use all colleges was based on the need to identify the strength and pitfalls in each college to give particular attention to each college in their implementation of the curriculum.

Sampling procedure and plan

A multi-stage sampling process was used in the study. The evaluation used both purposeful and convenience sampling procedures to select participants from each of the 46 colleges. A total of 6 tutors lessons were observed in the classroom and during PD/TPL sessions. Sixteen interviews and focus group discussions were carried out in each college and in partner schools. The sample size may look small, but Starks and Trinidad (2007) argued that an appropriate sample size for a qualitative study is dependent upon the study's purpose and goals. Because of the complexity of human activities, the sample size for each college allows for a deeper exploration of the challenges the tutors and other members face in implementing the B.Ed. programme with fidelity.

The criteria for selecting participants were that at the time of the visit, FOI assessors would interview the college management (principal, vice principal, college secretary), tutors whose lesson would be observed, students who were in the class where a tutors was observed teaching, professional development coordinators(PDC)/Tutor professional learning coordinator(TPLC), tutors who attended observed professional development (PD)/Tutors professional learning (TPL) sessions, supported teaching in school (STS) coordinator, student teachers who were on internship visits (to selected partnerships schools) who taught lessons, student teachers who were on internship in partners schools and who observed their mentor teach as well as headteachers and teachers who acted as lead mentors and mentors respectively of the student teachers who participated in the study.

Using the criteria described above and a predetermined sample size and based on similar exercises, specifically, the Transition Support Fund evaluations carried out in the colleges previously (T-TEL 2019), the following numbers of participants (and mode of data collection) in the listed categories were selected to take part in the evaluation in each of the 46 CoEs (Table 1).

Table 1: Number of participants groups selected in each college

Category	Mode of data Collection	Number of interviews
College Management	Focus group discussion	1
Tutors (Teaching)	Lesson observation & interviews	3
PDC/TPLC	Lesson observation & interview	3
Tutor (after PD/TPL)	Focus group discussion	3
STS Coordinator	Interview	1
Quality Assurance Officer	Interview	1
Examination Officer	Interview	1
Student teachers in CoE	Focus group discussion	3
Student teachers in Partner School	Lesson observation & interview	4
Lead mentors	Interview	1
Mentors	Focus group discussion	1
Total		22

Assessors for FOI

The FOI assessors were made up of personnel from the Ghana Tertiary Education Commission, Kwame Nkrumah University of Science and Technology, University of Education Winneba, University of Development Studies, University of Education, Winneba, and University of Ghana. Eight assessors from GTEC, fourteen assessors from the five universities mentioned above were supported by two college principals and nine Education Advisors from T-TEL formed evaluation teams. In all, 24 assessors took part in the exercise.

The FOI team was led by GTEC and members of the Conference of Principals of Colleges of Education (PRINCOF) with assessors from the 5 universities working with the 46 colleges as their mentoring university and T-TEL educational advisors (EA). The universities and T-TEL EAs were involved in the exercise to help strengthen their understanding of what actions might be required to address any identified issues in a collaborative and non-judgemental manner. To avoid conflict of interest no university assessor was allowed to be involved in undertaking the FOI in any of their own affiliated colleges of education.

The assessors were taken through a three-day training to review and familiarize themselves with the instruments for the data collection. The training offered insights and re-enforced the assessors' understanding of the key components of the curriculum, the instruments for data collection and also helped emphasize the type of field data needed for analysis.

In all, 46 different teams were created between the 24 assessors to do the evaluation. The assessors crisscrossed the country and spent one week, five days, visiting each university and their affiliate colleges of education as well as selected partner schools of the college. Two and a half days were spent in college, one half day in the mentoring university and two days in the partner schools. One of the days spent in the college was used for moderation and report

writing. The exercise lasted eight weeks, beginning on Monday 9th May 2022 and ending on Friday 1st July 2022.

Evaluation instruments

As mentioned, qualitative and quantitative methods were used in the study. Qualitative data allowed for a deep exploration of the complexities of the tutors' experiences in implementing the B.Ed. programme. The data were collected through structured interview instruments developed by the designers and reviewed by the FOI assessors. Quantitative data were collected using Likert-like observation scale. The assessment tools were designed to support assessors in collecting data focused on the effectiveness of B.Ed. implementation.

The team collected data using the following instruments (See Appendix A).

1. Observation proforma for
 - a. Tutor Lesson
 - b. PD/TPL Session
 - c. STS Student Lesson (Level 300/400)
 - d. STS Student Teacher reflective session (Level 100/200)
2. Interview schedule for
 - a. Management
 - b. Tutor (post session)
 - c. STS Student Lesson
 - d. PD (post session)
 - e. STS (post observation)
3. Proforma for collecting data on
 - a. Student teacher portfolio
 - b. Student teacher evaluation record
 - c. Course handbooks
 - d. CoE evaluation guidance
 - e. Partnership agreements
 - f. PD/TPL evaluation session
 - g. Quality Assurance policy
 - h. Tutor lesson plan for lesson observed

Data Collection

Data were collected through lesson observation and in-depth, structured interviews. The qualitative approach focused on uncovering meanings behind activities, events, and lesson observations. In the structured interviews, the interviews were considered to be dialogues that redefined the role of assessors and participants as co-creators of meanings associated with the events under study (Leonard, 1994, p.56). The quantitative approach focused on describing and rating the levels of adherence, quality, exposure, responsiveness, differentiation, facilitation strategies, and complexities against college of education members' commitment to using the four critical components or areas mentioned above.

The in-depth structured interviews allowed experiences of the college staff and mentors and lead mentors from the partner schools to be explored since they were the direct implementors of the curriculum. It allowed them to provide untainted views and where further clarification was required, it was easy to be sought. Student teachers were also interviewed as a means of exploring their views as recipients of the B.Ed. The in-depth structured interviews also provided clarification and further information to support the FOI of the CoE following observations and or document scrutiny. The observations and documentary analysis were done with a checklist for data collectors to complete based on evidence observed. For example, course manuals, NTS, student teachers' portfolios were examined. These varied methods allowed for triangulation enhancing overall reliability and validity of the findings. (Copies of data collection tools are available in Appendix A).

The interviews covered student teachers, tutors, mentors, lead mentors, professional development and STS coordinators, assessment officers, quality assurance coordinators and other college leaders including Principals, Vice Principals, Academic affairs officers, and chief Librarian among others. In all, 506 participants were interviewed. The interviews probed the four critical B.Ed. Curriculum components: Teaching and Learning, Assessment, STS, and PD/TPL. Each of the four components were measured against the 6 FOI dimensions.

Assessors provided a 'Yes' response if the description against the dimension is being met, 'No' response if the description against the dimension is not in place and 'IP' response if some, but not all the descriptions against the dimension is in place. The instruments had series of questions support and strengthen content validity. This was further enhanced by the scrutiny of the designers. Again, to strengthen interrater reliability- that is where two field officers observed the same lesson - the extent of agreement or otherwise was compared and agreed. In the 46 colleges and partner schools visited, the following data collection exercise was conducted:

Table 2: An overview of the various data collection methods employed

Interviews	Focus group discussion	observation	Document analysis
Quality assurance	CoE management	Tutor lessons	CoE Policies
Assessment officer	Student teachers who sat in observed lessons	Student teacher Lessons	Staff records
PD coordinator	Student teachers at STS	Infrastructure	Student portfolios
Librarian	Mentors and lead mentors	STS	SRJ
STS coordinator	Tutors at PD session	PD session	Handbooks/manuals
Mathematics, ICT, English, Science and one other Tutor		Library	National policies
		Science Laboratories	Library catalogue

		Halls of residence Washrooms and Classrooms	Infrastructure audit book
		Sporting facilities and Home Economics facilities	

Within the eight-week period, there were a few co-curricular activities in the CoEs such as sporting events and examinations which made it impossible to do all the scheduled lesson observations, albeit the teams were able to complete all the scheduled non-lesson related interviews.

In all, the team observed 184 tutor lessons, 39 TPD sessions and 92 student teacher lessons and observations. As focus group discussions were held after every tutor lesson and every PD/TPL session, the team held 453 focus group interviews. In addition to these focus group discussions, the team conducted 506 interviews using the items listed in Appendix A. The observed lessons took an average of 1 hour and 20 minutes, while the interviews took an average of 50 minutes.

Data Analysis

The unit of analysis for this study is the college of education since we are trying to understand the determinants of any differences in implementation effectiveness at the individual college level Creswell & Plano (2007).

The data analysis was guided by the analytical principles of case study research which involves “a detailed description of the setting or individuals, followed by analysis of the data for themes or issues” (Creswell 2012, p.191). The analysis for themes, codes and categories from both interview and document review data were achieved through the content analysis approach.

The interview data was transcribed, coded, and analysed thematically. The themes for the data analysis were derived from the seven components of the FoI, namely adherence, dosage or exposure, programme differentiation, quality of delivery, participants responsiveness, facilitation strategies and intervention complexities. This practice is in line with Holliday’s (2007) argument that interview data can be organised according to the research questions, theoretical framework, or emerging themes.

To attain the rigour required in ensuring trustworthiness of the data, the latter was subjected to the credibility, transferability, dependability, and confirmability criteria suggested by Cohen, Manion and Morrison (2018) as well as Baxter and Jack (2008). To ensure credibility of the findings, all members of each team moderated the data collected by individual members of the team on the last day of the data collection period in each CoE to rid the data of any inaccuracies. Where it became necessary to seek further clarification from the respondents after the moderation, this was done to ensure the accuracy of the data and make certain that respondents’ views formed part of the thick descriptions of data. In ensuring transferability of the findings, the assessors provided enough contextual and background information about the college in which they worked to enable readers to make comparison with other institutions’ environments to make such a transfer (Maxwell, 2012).

To ensure that the evaluation could be replicated with similar participants in a similar context, by way of dependability, the assessors provided rich and thick description of the methods used for the data collection in each college in order for readers to ascertain the evaluation process followed throughout the exercise (Lincoln & Guba, 1985). Finally, regarding confirmability, to ensure that the results of the exercise in a particular CoE could be confirmed or corroborated by other assessors, multiple data sources were triangulated through the observations, interviews, and document reviews. The assessors also recorded incidents that happened during the fieldwork in a reflective journal as recommended by Bowen, (2009).

Assessing adherence overall for each CoE

To arrive at the adherence or fidelity *score* for a college, their scores (frequencies of 'Yes', 'No', and 'IP') under each of the 6 dimensions of FOI were first determined. Secondly, the frequency scores were computed in each of the key critical areas under the four curriculum components. The "Yesses" for all six dimensions and 4 curriculum components were summed up and this became the FOI *score* for the college. Thirdly, the overall fidelity for all the COEs in terms of 6 FOI dimensions and 4 curriculum components were computed. The scores guided the decisions on the strengths of the college in implementing the curriculum and areas for development or improvement in the college.

The *overall* quality of fidelity of implementation of each CoE was assessed using three categories and arrived at using the number of 'yes' indicators for each of the four curriculum components or 6 FOI dimensions which contributed to overall adherence¹. This was as follows: 'High performing CoE' =70%+ Yes, 'Medium performing CoE' =50-69% Yes, and 'Low performing CoE' = 0-49% Yes.

Analysis of interview data

Transcribed interview sessions were used to generate thematic frequency tables. The raw transcriptions were then migrated into excel format. The data were then separated according to College, Mentoring University, and Regulator (GTEC and MoE) pools. The data were further categorized according to the curriculum component areas of Support Teaching in School (STS), Teaching and Learning (T&L), Professional Development (PD), Infrastructure, Assessment, and General Recommendations under each of the three pools. The data were then imported into a Microsoft Forms platform. The general weight of a thematic phrase was then recorded and populated in the Thematic Frequency Tables.

¹ Researchers set the thresholds or cut points for deciding whether the implementation of the programme met the standard. In this study, achievement of all four programme-specific standards in terms of their adherence to the six implementation fidelity dimensions was the minimum threshold for adequate overall implementation fidelity. Achieving "Yes" in all observational instrument indicates full adherence to the curriculum. Levels of adherence is judged by the number of "YES" obtained.

Ethical considerations

Regarding ethical considerations, the evaluation was conducted using approved ethics procedures. GTEC informed all colleges about the evaluation exercise including those to be involved in the in the qualitative data gathering. All participants were assured that the information obtained from the evaluation would be communicated in summary format without identifying individual participants. All information gathered from individual participants during the evaluation was anonymized by use of coded names such as interviewer, HOD 1,2, 3...; PDC/TPLC 1, 2, 3...; Tutor 1,2. 3... etc.

Table 3: Limiting and delimiting factors associated with the FOI exercise

Limitations	Delimitations
The study had a number of limitations that derive from the instruments, interview responses, lesson observation. Lesson observation-related limitations relate to data quality.	All attempts were made to ensure that the instruments were unambiguous and user friendly. This included involving the FOI team in the review and finalization of the instruments. Doing this also ensured their close familiarity with the instruments Less experienced assessors were paired with senior researchers
To cover the network of 46 CoE across the nation and to support consistency across reporting on each CoE, the FOI teams were not constant. This worked well during the field work but caused challenges during the moderation and data cleansing activity.	Following the initial moderation activity, the reports of all 46 CoEs were further reviewed for both consistency of qualitative and quantitative data within each report and across reports. Where any issues arose, the reports were further discussed with the lead report writers.
The study was restricted to the general B.Ed. and did not cover the granular programmes of early grade teaching, upper primary teaching and JHS teaching. Nor did it focus directly on disability issues in CoEs gender equality and social inclusion (GESI).	To support manageability and keep the focus of the study tight it was aimed at assessing fidelity to the general principles defining the B.Ed. curriculum. This included overall differentiation into the three programmes and observation of GESI at classroom level.
The interview guide used to collect qualitative data was not specifically designed to assess institutional member satisfaction and commitment to the intervention. Nevertheless, there may have been other important institutional variables that might not have been identified (e.g., support of leadership, institutional culture, desire for the intervention, preparedness for change,	The scope of the study was the fidelity of implementation through the adherence to the general principles of the B.Ed. as set out in the reform policy documents. The measurement of these other issues may have to be considered as indicators of institutional context in future fidelity research.

enthusiasm, attitudes to programme, incentives, and rewards).	
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CHAPTER THREE

RESULTS

FOI dimensions against Curriculum components

The results of the study are presented in line with the research questions in the study. The first research question was as follows:

Research Question 1: To what extent is the B.Ed. curriculum implemented with fidelity by each of the colleges?

The Overall Extent of Fidelity Across the CoEs

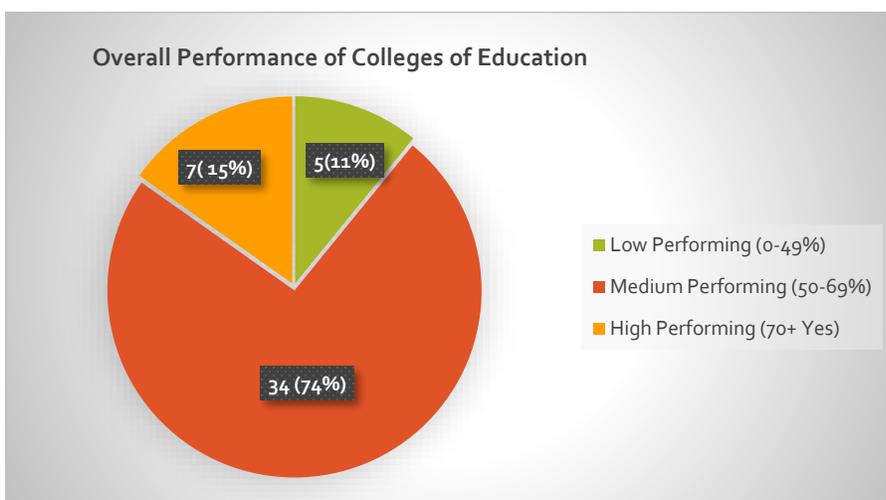
To provide an overall response to this research question the assessors categorized the CoE in terms of the level of adherence, or fidelity, of implementation. Performance was based on the number of ‘yes’ scores across 24 indicators arising from evaluating the four curriculum components against the six dimensions of FOI to give an overall picture of adherence. The colleges of education were categorized into ‘high performing’, ‘medium performing’, and ‘low performing’. This resulted in the following breakdown across the 46 CoE:

Table 4: CoE categorisation in terms of extent of adherence to implementation

High performing	70% + yes	7 CoE (15.22%)
Medium performing	50-69% yes	34 CoE (73.91%)
Low performing	0-49% yes	5 CoE (10.81%)

The pie chart below gives a pictorial representation implementation adherence.

Figure 1: Pie Chart of the Categorization



This shows that by far the majority (74%) of CoE have implemented the B.Ed. to a reasonable level and are categorized as ‘medium performing’. 50% of these are located at the upper end of

that category. Only 5 of the 46 (11%) are categorized as low performing. Fifteen percent (15%) were classified as high performing. This performance should be viewed from the perspective that the B.Ed. curriculum is only three years in its implementation and is yet to cover the 4th year of the programme. Although a substantial proportion of the embodiments of the curriculum have been covered during the implementation to date, not all have been covered, including planning independently for extended teaching, and demonstrating the qualities and attributes of a teacher who fully meets the NTS. In addition, tutors, and other members of CoE community are still in the process of incorporating the knowledge, skills, principles, and practices required by the B.Ed. curriculum in their own practices. This takes time and targeted, needs based PD is required to support tutors. Furthermore, many colleges are grappling with infrastructure and facilities deficits which tend to hamper the implementation.

The overall performance of the colleges is depicted in Figure 1 above. A combination of multiple factors seems to be at play here. These include number of qualified tutors, principals' knowledge, attitude and leadership about the intervention, and length of stay in the college, orientation for newly employed tutors, quality of teaching, intervention complexities, monitoring and feedback, assessment issues, nature of, and attendance at, PD sessions and mentor training, and significant infrastructure and resource issues.

Breakdown of Extent of Fidelity of Adherence in Each CoE

Table 5 shows the performance of each College of Education in terms of **each** of the six (6) FOI dimensions in relation to the four (4) curriculum components. The table presents the percentages of the 'YES', 'IP' and 'NO' responses. In the last column, the percentage of all individual FOI dimensions for each College of Education for the 'YES', 'IP' and 'NO' responses are averaged to obtain the "Overall Adherence", that is, the extent of Adherence to the curriculum design for each College. As indicated earlier, total adherence should be 100% and therefore the reasons for the inability for the Colleges of Education to score 100% are presented in the narratives in the subsequent sections of the report. Again, the Appendix B of the individual College of Education reports provides detailed presentation of the adherence of individual colleges to the intervention.

As seen in the Table 5, the implementation fidelity of the B.Ed. curriculum in the colleges ranged from a low level of 16.7% to high level of 83.3%. No institution achieved 100% fidelity. The table also shows that intervention complexities presented a major problem for all colleges with majority scoring 0%. These complexities constituted barriers to effective implementation. These barriers to successful implementation of the intervention include infrastructural deficits, teaching learning resources, staff motivation, qualifications, monitoring and feedback, non-availability of NTS, STS, PD handbooks and course manuals for mentors and student teachers and lack of understanding of the implications of the reform policies for practice.

The differentiation of the three programmes (early grade, upper primary and JHS) were implemented to a high level, although this was not explored in a granular fashion, while exposure to the curriculum, quality of delivery, participant responsiveness and facilitation strategies were moderately executed. In terms of exposure, less than 40% of student teachers were able to demonstrate knowledge and understanding of the domains of the NTS and did not see how the NTS relates to teaching and assessment (see Appendix C). Student teachers need

to be given greater exposure or dosage to the NTS and its implication for their practice. The quality of delivery was also impacted negatively by lack of exposure to NTS, inadequate infrastructural facilities and appropriate TLMs. In addition, blended learning was not widely used and its impact on student engagement and learning were not evident. Other issues that affected quality of delivery included the following: failure to appoint personal tutors to support student teachers' progress (32.1%); failure of lead mentors and mentors in performing their roles in line with the SPA 44.6%) as well as their inability in ensuring the effectiveness of the reflective sessions with student teachers (14.3%). This last point also impacted negatively on participants' responsiveness – their engagement and active involvement in the activities. Facilitation strategies dimension which is intended to support effective engagement of student teachers was found to be lacking to a large extent (19.6%), for example, adequate and appropriate TLMs, infrastructure, internet access, and laboratories. Other issues included: inadequate supply of STS handbooks for student teachers and STS coordinators (33.9%); and insufficient quantities of PD/TPL handbooks for all tutors.

Appendix D provides adherence of CoEs to the B.Ed. disaggregated by mentoring universities. KNUST, UCC, and UEW had two of their colleges achieving high performing status while UG had one institution identified as high performing, and UDS had none. The overall best performing institution was Enchi College of Education with adherence value of 83.3%. The average adherence of colleges under each of the affiliated universities were found to be medium performing. That said, 50% of the medium performing were in the upper end of that category.

When consideration is given to the progress of CoE since the 2019 TSF it is worth noting that: all those identified as high performing in the FoI appear to have been making continuous progress; the majority who failed the TSF now appear to be making better progress, with 2 making significant strides forward; finally, 4 CoE appear to be regressing and it will be useful to explore the reasons for this more closely.

Table 5: Performance of Each College on the Six FOI Dimensions and Overall Adherence (%)

Note: CoE categorized as ‘high performing’ are highlighted in red and those categorized as ‘low performing’ are highlighted in green.

(See also Appendix D adherence of CoEs to the B.Ed. disaggregated by mentoring universities)

College of Education	Exposure or Dosage (%)			Programme Differentiation (%)			Quality of Delivery (%)			Participant Responsiveness (%)			Facilitation Strategies (%)			Intervention Complexity (%)			Overall Adherence (%)		
	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No
ABETIFI PRESBYTERIAN COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	25.0	75.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	50.0	50.0	0.0
ADA COLLEGE OF EDUCATION	75.0	25.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	66.7	33.3	0.0
AGOGO COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	58.3	41.7	0.0
AKATSI COLLEGE OF EDUCATION	50.0	50.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	0.0	100.0	0.0	62.5	37.5	0.0
1. ATEBUBU COLLEGE OF EDUCATION	25.0	75.0	0.0	50.0	50.0	0.0	25.0	75.0	0.0	25.0	75.0	0.0	50.0	0.0	50.0	0.0	100.0	0.0	29.2	62.5	8.3
BAGABAGA COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	25.0	75.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	0.0	100.0	0.0	66.7	33.3	0.0
BEREKUM COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	66.7	33.3	0.0
E.P.COLLEGE OF EDUCATION, AMEDZOFE	75.0	25.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	54.2	45.8	0.0

College of Education	Exposure or Dosage (%)			Programme Differentiation (%)			Quality of Delivery (%)			Participant Responsiveness (%)			Facilitation Strategies (%)			Intervention Complexity (%)			Overall Adherence (%)		
	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No
1. ENCHI COLLEGE OF EDUCATION	75.0	25.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	83.3	16.7	0.0
2. FOSO COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	0.0	75.0	25.0	75.0	20.8	4.2
GAMBAGA COLLEGE OF EDUCATION	100.0	0.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	0.0	50.0	50.0	62.5	29.2	8.3
GBEWAA COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	62.5	37.5	0.0
JASIKAN COLLEGE OF EDUCATION	25.0	75.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	50.0	50.0	0.0
KIBI COLLEGE OF EDUCATION	50.0	50.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	25.0	75.0	0.0	0.0	100.0	0.0	50.0	50.0	0.0
MAMPONG TECHNICAL COLLEGE OF EDUCATION	75.0	25.0	0.0	100.0	0.0	0.0	25.0	75.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	25.0	75.0	0.0	58.3	41.7	0.0
MCCOY COLLEGE OF EDUCATION	100.0	0.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	50.0	50.0	0.0
3. METHODIST COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	70.8	29.2	0.0
MOUNT MARY COLLEGE OF EDUCATION	75.0	25.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	50.0	50.0	0.0

College of Education	Exposure or Dosage (%)			Programme Differentiation (%)			Quality of Delivery (%)			Participant Responsiveness (%)			Facilitation Strategies (%)			Intervention Complexity (%)			Overall Adherence (%)		
	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No
OFFINSO COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	58.3	41.7	0.0
2. OLA COLLEGE OF EDUCATION	25.0	75.0	0.0	25.0	75.0	0.0	25.0	75.0	0.0	25.0	75.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	25.0	75.0	0.0
PEKI COLLEGE OF EDUCATION	25.0	75.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	50.0	25.0	25.0	66.7	29.2	4.2
PRESBYTERIAN COLLEGE OF EDUCATION, AKROPONG	50.0	50.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	0.0	100.0	0.0	66.7	33.3	0.0
SDA COLLEGE OF EDUCATION, AGONA	75.0	25.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	66.7	33.3	0.0
4. SDA COLLEGE OF EDUCATION, ASOKORE	100.0	0.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	70.8	29.2	0.0
3. ST. AMBROSE COLLEGE OF EDUCATION	50.0	50.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	25.0	75.0	0.0	0.0	100.0	0.0	45.8	54.2	0.0
ST. FRANCIS COLLEGE OF EDUCATION	25.0	75.0	0.0	50.0	50.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	50.0	50.0	0.0
ST. JOHN BOSCO COLLEGE OF EDUCATION	25.0	75.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	50.0	50.0	0.0
5. JOSEPH COLLEGE OF EDUCATION	75.0	25.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	0.0	25.0	75.0	70.8	16.7	12.5

College of Education	Exposure or Dosage (%)			Programme Differentiation (%)			Quality of Delivery (%)			Participant Responsiveness (%)			Facilitation Strategies (%)			Intervention Complexity (%)			Overall Adherence (%)		
	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No
ST. LOUIS COLLEGE OF EDUCATION	75.0	25.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	25.0	75.0	0.0	75.0	25.0	0.0	0.0	100.0	0.0	54.2	45.8	0.0
ST. MONICA COLLEGE OF EDUCATION	75.0	25.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	0.0	100.0	0.0	66.7	33.3	0.0
6.. ST. TERESA COLLEGE OF EDUCATION	100.0	0.0	0.0	50.0	25.0	25.0	75.0	25.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	100.0	0.0	0.0	75.0	20.8	4.2
4. ST. VINCENT COLLEGE OF EDUCATION	50.0	50.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	25.0	75.0	0.0	25.0	75.0	0.0	0.0	25.0	75.0	41.7	45.8	12.5
7. TAMALE COLLEGE OF EDUCATION	75.0	25.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0
5. TUMU COLLEGE OF EDUCATION	0.0	100.0	0.0	50.0	50.0	0.0	25.0	75.0	0.0	25.0	75.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	16.7	83.3	0.0
WESLEY COLLEGE OF EDUCATION	50.0	50.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	75.0	25.0	0.0	50.0	25.0	25.0	0.0	100.0	0.0	54.2	41.7	4.2
ACCRA COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	25.0	50.0	25.0	100.0	0.0	0.0	75.0	25.0	0.0	0.0	25.0	75.0	66.7	16.7	16.7
AKROKERRI COLLEGE OF EDUCATION	25.0	75.0	0.0	100.0	0.0	0.0	25.0	75.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	54.2	45.8	0.0
BIA LAMPLIGHTER	50.0	50.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	0.0	100.0	0.0	62.5	37.5	0.0

College of Education	Exposure or Dosage (%)			Programme Differentiation (%)			Quality of Delivery (%)			Participant Responsiveness (%)			Facilitation Strategies (%)			Intervention Complexity (%)			Overall Adherence (%)			
	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	
COLLEGE OF EDUCATION																						
HOLY CHILD COLLEGE OF EDUCATION	50.0	50.0	0.0	50.0	0.0	50.0	75.0	25.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	62.5	29.2	8.3	
KOMENDA COLLEGE OF EDUCATION	50.0	50.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	66.7	33.3	0.0	
NJA COLLEGE OF EDUCATION	100.0	0.0	0.0	100.0	0.0	0.0	25.0	75.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	0.0	25.0	75.0	66.7	20.8	12.5	
WIAWSO COLLEGE OF EDUCATION	50.0	50.0	0.0	100.0	0.0	0.0	25.0	75.0	0.0	50.0	50.0	0.0	75.0	25.0	0.0	25.0	75.0	0.0	54.2	45.8	0.0	
PRESBYTERIAN WOMEN'S COLLEGE OF EDUCATION, ABURI	75.0	25.0	0.0	100.0	0.0	0.0	25.0	75.0	0.0	50.0	50.0	0.0	25.0	75.0	0.0	25.0	75.0	0.0	50.0	50.0	0.0	
ALFARUQ COLLEGE OF EDUCATION, WENCHI	100.0	0.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	75.0	25.0	0.0	0.0	100.0	0.0	66.7	33.3	0.0	
E.P. COLLEGE OF EDUCATION, BIMBILLA	75.0	25.0	0.0	100.0	0.0	0.0	50.0	50.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	0.0	100.0	0.0	58.3	41.7	0.0	
DAMBAI COLLEGE OF EDUCATION	100.0	0.0	0.0	75.0	25.0	0.0	50.0	50.0	0.0	75.0	25.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	66.7	33.3	0.0	

Breakdown of Adherence of Individual CoE Against the Four Curriculum Components

In Table 6, the percentage Adherence of individual colleges in the four (4) curriculum components for all 46 Colleges is presented. The table includes all the three (3) response types: 'yes', 'IP' and 'no'. The overall fidelity of implementation for each college is the same as those in Table 5 (see also Figure 1). However, in this table, the level of fidelity of implementation of the four curriculum components, namely, teaching and learning of student teachers, assessment of student teachers, preparation for, and student teachers' experience of supported teaching in school (STS) and professional development (PD)/teacher professional learning (TPL) was further examined. The component on 'teaching and learning of student teachers' had medium to high fidelity with only 4 colleges exhibiting fidelity levels below 50%. The 'tutor professional development/teacher professional learning' had a medium to high fidelity with only 6 colleges falling below this mark. Performance in these two curriculum components demonstrate tutors' incorporation of these practices and principles in their teaching in the colleges. However, whilst incorporating interactive approaches there was also a limited knowledge and understanding of the domains of the National Teaching Standards and their implications for practice among some college staff and student teachers.

Assessment of student teachers, and provision of STS experience seemed to present difficulties to high number of colleges (12 in assessment and 23 in STS). This negative STS experience was also reported in the Transition Support Fund assessment (T-TEL 2019). These difficulties may arise from several factors - lack of understanding of, and application of, the assessment policy (NTEAP), inadequate instructional leadership by Principals, poor QA, monitoring, and feedback system built within the implementation, inadequate mentoring by mentoring institutions, inadequate training of mentors and lead mentors, inadequate transport with large number of student teachers requiring busing to partner schools, and poor reflective practices during STS. More details are presented in the chapter on Strengths and Areas for Development.

Table 6: Percentage Adherence of the Four Curriculum Components in the Colleges of Education

COLLEGE OF EDUCATION	Teaching and learning of student teachers			Assessment of Student Teachers			Preparation for, and student teachers experience of, STS			Tutor's Professional Development			Overall Adherence		
	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No
ABETIFI PRESBYTERIAN COLLEGE OF EDUCATION	66.7	33.3	0.0	50.0	50.0	0.0	33.3	66.7	0.0	50.0	50.0	0.0	50.0	50.0	0.0
ADA COLLEGE OF EDUCATION	83.3	16.7	0.0	66.7	33.3	0.0	83.3	16.7	0.0	33.3	66.7	0.0	66.7	33.3	0.0
AGOGO COLLEGE OF EDUCATION	66.7	33.3	0.0	66.7	33.3	0.0	33.3	66.7	0.0	66.7	33.3	0.0	58.3	41.7	0.0
AKATSI COLLEGE OF EDUCATION	83.3	16.7	0.0	83.3	16.7	0.0	16.7	83.3	0.0	66.7	33.3	0.0	62.5	37.5	0.0
ATEBUBU COLLEGE OF EDUCATION	83.3	16.7	0.0	0.0	83.3	16.7	33.3	66.7	0.0	0.0	83.3	16.7	29.2	62.5	8.3
BAGABAGA COLLEGE OF EDUCATION	66.7	33.3	0.0	50.0	50.0	0.0	66.7	33.3	0.0	83.3	16.7	0.0	66.7	33.3	0.0
BEREKUM COLLEGE OF EDUCATION	83.3	16.7	0.0	66.7	33.3	0.0	33.3	66.7	0.0	83.3	16.7	0.0	66.7	33.3	0.0
E.P.COLLEGE OF EDUCATION, AMEDZOFE	83.3	16.7	0.0	66.7	33.3	0.0	16.7	83.3	0.0	50.0	50.0	0.0	54.2	45.8	0.0
ENCHI COLLEGE OF EDUCATION	83.3	16.7	0.0	66.7	33.3	0.0	83.3	16.7	0.0	100.0	0.0	0.0	83.3	16.7	0.0
FOSO COLLEGE OF EDUCATION	83.3	16.7	0.0	83.3	16.7	0.0	66.7	16.7	16.7	66.7	33.3	0.0	75.0	20.8	4.2
GAMBAGA COLLEGE OF EDUCATION	66.7	16.7	16.7	83.3	16.7	0.0	16.7	66.7	16.7	83.3	16.7	0.0	62.5	29.2	8.3
GBEWAA COLLEGE OF EDUCATION	83.3	16.7	0.0	66.7	33.3	0.0	33.3	66.7	0.0	66.7	33.3	0.0	62.5	37.5	0.0
JASIKAN COLLEGE OF EDUCATION	33.3	66.7	0.0	33.3	66.7	0.0	50.0	50.0	0.0	83.3	16.7	0.0	50.0	50.0	0.0
KIBI COLLEGE OF EDUCATION	66.7	33.3	0.0	66.7	33.3	0.0	0.0	100.0	0.0	66.7	33.3	0.0	50.0	50.0	0.0
MAMPONG TECHNICAL COLLEGE OF EDUCATION	66.7	33.3	0.0	33.3	66.7	0.0	33.3	66.7	0.0	100.0	0.0	0.0	58.3	41.7	0.0
MCCOY COLLEGE OF EDUCATION	83.3	16.7	0.0	16.7	83.3	0.0	50.0	50.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0
METHODIST COLLEGE OF EDUCATION	83.3	16.7	0.0	83.3	16.7	0.0	50.0	50.0	0.0	66.7	33.3	0.0	70.8	29.2	0.0
MOUNT MARY COLLEGE OF EDUCATION	50.0	50.0	0.0	33.3	66.7	0.0	66.7	33.3	0.0	50.0	50.0	0.0	50.0	50.0	0.0
OFFINSO COLLEGE OF EDUCATION	50.0	50.0	0.0	83.3	16.7	0.0	66.7	33.3	0.0	33.3	66.7	0.0	58.3	41.7	0.0
OLA COLLEGE OF EDUCATION	83.3	16.7	0.0	0.0	100.0	0.0	16.7	83.3	0.0	0.0	100.0	0.0	25.0	75.0	0.0
PEKI COLLEGE OF EDUCATION	83.3	16.7	0.0	50.0	50.0	0.0	50.0	50.0	0.0	83.3	0.0	16.7	66.7	29.2	4.2
PRESBYTERIAN COLLEGE OF EDUCATION, AKROPONG	66.7	33.3	0.0	83.3	16.7	0.0	33.3	66.7	0.0	83.3	16.7	0.0	66.7	33.3	0.0
SDA COLLEGE OF EDUCATION, AGONA	83.3	16.7	0.0	66.7	33.3	0.0	66.7	33.3	0.0	50.0	50.0	0.0	66.7	33.3	0.0
SDA COLLEGE OF EDUCATION, ASOKORE	50.0	50.0	0.0	83.3	16.7	0.0	66.7	33.3	0.0	83.3	16.7	0.0	70.8	29.2	0.0

ST. AMBROSE COLLEGE OF EDUCATION	50.0	50.0	0.0	33.3	66.7	0.0	50.0	50.0	0.0	50.0	50.0	0.0	45.8	54.2	0.0
ST. FRANCIS COLLEGE OF EDUCATION	66.7	33.3	0.0	83.3	16.7	0.0	16.7	83.3	0.0	33.3	66.7	0.0	50.0	50.0	0.0
ST. JOHN BOSCO COLLEGE OF EDUCATION	50.0	50.0	0.0	66.7	33.3	0.0	33.3	66.7	0.0	50.0	50.0	0.0	50.0	50.0	0.0
ST. JOSEPH COLLEGE OF EDUCATION	83.3	0.0	16.7	33.3	50.0	16.7	83.3	0.0	16.7	83.3	16.7	0.0	70.8	16.7	12.5
ST. LOUIS COLLEGE OF EDUCATION	83.3	16.7	0.0	50.0	50.0	0.0	33.3	66.7	0.0	50.0	50.0	0.0	54.2	45.8	0.0
ST. MONICA COLLEGE OF EDUCATION	66.7	33.3	0.0	33.3	66.7	0.0	83.3	16.7	0.0	83.3	16.7	0.0	66.7	33.3	0.0
ST. TERESA COLLEGE OF EDUCATION	83.3	0.0	16.7	83.3	16.7	0.0	50.0	50.0	0.0	83.3	16.7	0.0	75.0	20.8	4.2
ST. VINCENT COLLEGE OF EDUCATION	33.3	50.0	16.7	33.3	50.0	16.7	33.3	50.0	16.7	66.7	33.3	0.0	41.7	45.8	12.5
TAMALE COLLEGE OF EDUCATION	0.0	100.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0
TUMU COLLEGE OF EDUCATION	50.0	50.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	16.7	83.3	0.0	16.7	83.3	0.0
WESLEY COLLEGE OF EDUCATION	50.0	33.3	16.7	83.3	16.7	0.0	33.3	66.7	0.0	50.0	50.0	0.0	54.2	41.7	4.2
ACCRA COLLEGE OF EDUCATION	83.3	0.0	16.7	50.0	33.3	16.7	66.7	16.7	16.7	66.7	16.7	16.7	66.7	16.7	16.7
AKROKERRI COLLEGE OF EDUCATION	66.7	33.3	0.0	50.0	50.0	0.0	33.3	66.7	0.0	66.7	33.3	0.0	54.2	45.8	0.0
BIA LAMPLIGHTER COLLEGE OF EDUCATION	83.3	16.7	0.0	83.3	16.7	0.0	16.7	83.3	0.0	66.7	33.3	0.0	62.5	37.5	0.0
HOLY CHILD COLLEGE OF EDUCATION	33.3	50.0	16.7	50.0	33.3	16.7	83.3	16.7	0.0	83.3	16.7	0.0	62.5	29.2	8.3
KOMENDA COLLEGE OF EDUCATION	66.7	33.3	0.0	83.3	16.7	0.0	50.0	50.0	0.0	66.7	33.3	0.0	66.7	33.3	0.0
NJA COLLEGE OF EDUCATION	66.7	16.7	16.7	66.7	16.7	16.7	50.0	33.3	16.7	83.3	16.7	0.0	66.7	20.8	12.5
WIAWSO COLLEGE OF EDUCATION	66.7	33.3	0.0	33.3	66.7	0.0	16.7	83.3	0.0	100.0	0.0	0.0	54.2	45.8	0.0
PRESBYTERIAN WOMEN'S COLLEGE OF EDUCATION, ABURI	50.0	50.0	0.0	33.3	66.7	0.0	16.7	83.3	0.0	100.0	0.0	0.0	50.0	50.0	0.0
ALFARUQ COLLEGE OF EDUCATION, WENCHI	83.3	16.7	0.0	83.3	16.7	0.0	16.7	83.3	0.0	83.3	16.7	0.0	66.7	33.3	0.0
E.P. COLLEGE OF EDUCATION, BIMBILLA	50.0	50.0	0.0	50.0	50.0	0.0	50.0	50.0	0.0	83.3	16.7	0.0	58.3	41.7	0.0
DAMBAL COLLEGE OF EDUCATION	66.7	33.3	0.0	83.3	16.7	0.0	66.7	33.3	0.0	50.0	50.0	0.0	66.7	33.3	0.0

Research Question 2: What is the overall fidelity of implementation of the B.Ed. curriculum for all the colleges?

In line with the Individual FOI reporting format, Table 7 shows the six (6) individual FOI dimensions against the four (4) curriculum components. The table offers the opportunity for the performance of each of the curriculum components to be interrogated in terms of the six dimensions. The ‘yes’ response indicated the percentage of adherence, the ‘IP’ response indicated partial adherence while the ‘no’ response indicated non-adherence. Again, the full detail of each College of Education’s performance is presented in Appendix D. The narratives explaining the reason behind each score is provided in the subsequent portions of the report.

Table 7: Six FOI dimensions against the four (4) curriculum components – (%)

Dimensions	Curriculum Components											
	1 Teaching and learning of student teachers			2. Assessment of Student Teachers			3. Preparation for, and student teachers experience of, STS -			4.Tutor’s Professional Development -		
	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No	Yes	In Part	No
Exposure or Dosage	80.4	19.6	0.0	65.2	34.8	0.0	58.7	41.3	0.0	76.1	23.9	0.0
Programme Differentiation	91.3	4.3	4.3	84.8	13.0	2.2	76.1	23.9	0.0	87.0	13.0	0.0
Quality of Delivery	58.7	41.3	0.0	63.0	37.0	0.0	34.8	65.2	0.0	78.3	19.6	2.2
Participant Responsiveness	93.5	6.5	0.0	67.4	32.6	0.0	45.7	54.3	0.0	71.7	28.3	0.0
Facilitation Strategies	71.7	26.1	2.2	63.0	34.8	2.2	43.5	56.5	0.0	67.4	30.4	2.2
Intervention Complexity	6.5	82.6	10.9	4.3	87.0	8.7	8.7	78.3	13.0	13.0	84.8	2.2
Average Scores	67.0	30.1	2.9	58.0	39.9	2.2	44.6	53.3	2.2	65.6	33.3	1.1

Table 7 shows that the overall fidelity for all colleges varied from low to medium performance, ranging from 44.6% to 67.0%. While teaching and learning of student teachers and TPD/TPL were moderately well implemented, assessment and STS were not carried out well. Observation of classroom interaction shows that about half of the tutors demonstrated understanding of the NTS, clear purpose for the lessons (80.9%) and integrated cross cutting issues in lessons (74.5%) (Appendix E). However, it was only a third of the student teachers were observed to integrate cross cutting and transferable skills such as problem solving, communication, and ICT in their activities. In addition, only 26.2% demonstrated understanding of the NTS for their practice (Appendix F).

Table 7 also shows that the necessary complexities of the intervention involved in implementing the B.Ed. curriculum were obstacles to adherence in successfully implementing the 4 curriculum components in all colleges as mentioned earlier. The tabular result is shown in a graphical form below (Figure 2).

Figure 2: Plot of FOI dimensions against 4 curriculum components

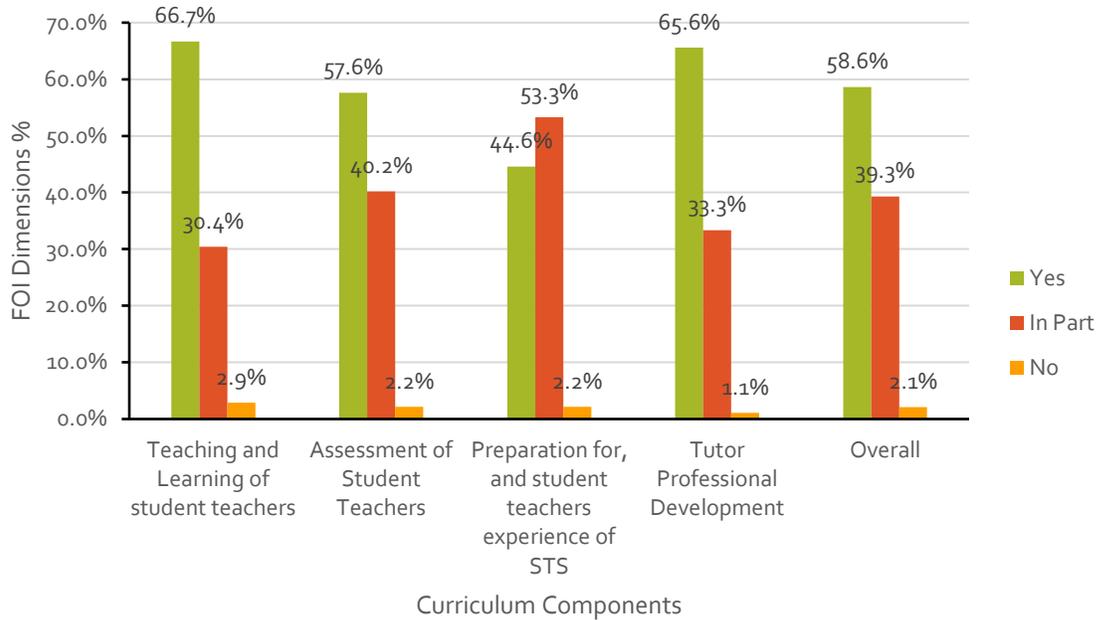


Figure 2 clearly shows that when put together the colleges of education demonstrated moderate adherence to the implementation of the curriculum in all the four components except students STS experience which was low (44.6%). In terms of implementation the level of in part responses indicates significant steps have been made towards implementation. This gives hope of a better performance as tutors are supported to incorporate the curriculum demands in their practices. The nature of the support required is detailed in the recommendations at the end of the report. There were however only in a few situations (less than 3%) that none adherence to implementation fidelity was noted. This needs to be addressed.

CHAPTER FOUR

STRENGTHS AND AREAS FOR DEVELOPMENT FOR B.ED. PROGRAMME

The results of the implementation fidelity of the B.Ed. curriculum by the 46 colleges has revealed that no college was able to implement the curriculum fully. This suggests that there are areas of strength that need to be celebrated and areas of weakness that require development. This chapter therefore responds to the third research question in the study:

Research Question 3: What are the strengths and weaknesses of the CoEs in the implementation of the Bachelor of Education curriculum?

This question seeks to:

- a. determine the key strengths of the 46 Colleges of Education implementing the B.Ed. curriculum,
- b. determine the weaknesses or areas for development.

Strengths identified in implementation of the B.ED. Programme

This section of the report provides a summary of the key strengths identified across the forty-Six (46) Colleges of Education. Even though Table 8 presents the common recurring strengths, each college had their unique strengths that must be appreciated (see individual college reports in the Appendix B and Tables 5 and 6). The strengths are presented in the form of a table under the following broad curricular themes:

- a) Teaching and Learning,
- b) Assessment
- c) Supported Teaching in School (STS)
- d) Tutor Professional Development/Professional Learning Community

Table 8: Summary of areas of strength in the colleges of education

Curriculum Area	Areas of Strength
Teaching and learning	1. On average, all 46 colleges have over 70% staff with the minimum qualification to teach in the college
	2. The majority of tutors use interactive strategies such as group work and presentations in engaging all learners. These facilitation practices promote the attainment of the required learning outcomes and good process flow.
	3. Subject-specific pedagogic knowledge is integrated with subject knowledge in the greater majority of CoE.
	4. Cross-cutting issues such as GESI responsiveness, critical thinking skills, communication skills, and the use of I.C.T. tools are integrated during the majority of lesson preparation and delivery by many tutors.
Assessment	1. Colleges have agreed assessment policy with their mentoring university although not always in line with the NTEAP.
	2. Assessment is based on subject portfolio, subject project, and end-of-semester examination in many CoEs.
	3. End of semester examinations are conducted in line with the mentoring University's academic calendar.
Supported Teaching in School	1. Every College of Education has signed School Partnership Agreements (SPA) with their partner schools
	2. Most colleges run mentor training sessions for their partner schools using the STS handbook, however the quality and consistency of this needs to be improved in a significant number.
	3. The majority of student teachers receive adequate orientation on the STS every semester and a proportion are given copies of the STS Handbooks before they are deployed to the various partner schools.
	4. All colleges have STS coordinators who supervise STS activities between the College and Partner Schools with varying levels of effectiveness.
Tutor Professional Development/Professional Learning Community	1. In the majority of the 46 Colleges of Education, the PD/TPL sessions are organised weekly either on a departmental basis or as at a general level.
	2. Each college has a PD/TPL coordinator who for the most part ensure that PD/TPL sessions are conducted effectively and efficiently in line with the PD handbooks.
	3. Some colleges have implemented motivational programmes like Lunch/refreshments for the

	participants. The records from the colleges show that the overall attendance rate is about 70%.

The table shows that majority of colleges exhibited strong performance in pedagogic approaches, general assessment skills, measures taken to ensure effectiveness of STS, and conduct of PD/TPL as a regular way of sharing ideas among tutors. The identified areas of strength need to be honed in by all colleges in order to ensure their incorporation in the practices of the tutors. This will impact positively on the implementation.

Areas for development

This section of the report presents the summary of identified weaknesses for possible remediation and development by the Colleges of Education which when implemented would improve the implementation of the B.Ed. programme. Even though this section captures the general areas, each college has particular areas that need attention (see individual college reports in Appendix D). The areas identified fall under the following broad themes reflecting each of the four curriculum components:

- a) Teaching and Learning
- b) Assessment
- c) Supported Teaching in Schools (STS)
- d) Teacher Professional Development/ Professional Learning Community.

Table 9: Summary of areas in the colleges of education needing attention

Curriculum Area	Areas for Improvement
Teaching and learning	1. Inadequate classrooms for effective teaching and learning This may result in overcrowded classrooms, a situation that is not conducive for effective enactment of the curriculum.
	2. Inadequate ICT laboratories and internet connection. ICT integration in teaching and learning is one of the key issues espoused by the curriculum. Inadequacy of digital tools has a negative effect on the fidelity of implementation.
	3. Limited knowledge and understanding of the domains of the National Teaching Standards and their implications for practice among college staff and student teachers. Since NTS form the basis for the curriculum, this situation creates a problem for the implementation of the curriculum.
Assessment	1. Availability of two assessment documents – the NTEAP and the UCC Document and the inability of GTEC to enforce its standards is creating a kind of cognitive dissonance among the colleges.
	2. Limited understanding and full operationalization of policy documents such as NTS, GESI, SSP, NTECF and NTEAP creates a

	<p>problem in applying the principles in these documents in teaching, learning and assessment.</p> <p>3. Delays in release of students' examination results and provision of timely feedback do not allow for provision of effective feed forward response.</p>
Supported Teaching in Schools	1. Difficulty in transporting student teachers to and from partner schools for the STS. Large numbers in CoEs prevent effective STS experience.
	1. Ineffective reflective sessions between student teachers and lead mentors, mentors and STS coordinators result in ineffective implementation of the curriculum.
	2. Irregular and insufficient training for lead mentors and mentors in the conduct of STS result in poor preparation of student teachers.
	3. Limited copies of STS handbooks for mentor and lead mentors
Tutor Professional Development	1. Low attendance of tutors at PD sessions in some CoE points to the ineffectiveness of monitoring by QA, and principals which may lead to poor enactment of the teaching learning interaction.
	2. Irregular supply of the PD manuals to tutors. This has a negative impact on the effectiveness of the teacher since this resource provides the support for effective implementation of the curriculum.
	3. Inadequate motivation for PD coordinators and the tutors. PD/PLC has the potential of encouraging tutors to share information among themselves, learn from each other, and prepare to teach. Dissatisfaction by organizers and participants can affect its impact and the ability of tutors to implement the curriculum.

The areas for development or weaknesses cover deficits in infrastructure and resources, insufficient grasp of the NTS, NTEAP, SPP, the operation of two assessment guiding documents that use different standards to judge the effectiveness of student teachers' performance and that can be a source of worry. Other areas include delays in exam results, insufficient preparation of mentors, and inadequate STS handbooks and PD manuals as well as motivation for tutors in these activities. These intervention complexities have serious implications for the effective implementation of the B.Ed. intervention.

CHAPTER FIVE

INTERVENTIONS REQUIRED

This is a follow up to the chapter on strengths and weaknesses or areas for development. It focuses on the mediation strategies that could be used to strengthen the colleges as they continue to implement the B.Ed. curriculum.

Research Question 4: How can these weaknesses be addressed?

To respond to this research question, areas that require some intervention to improve the implementation of the B.Ed. curriculum as well as actions at local and national levels required to address the issues concerned were identified.

The research engaged stakeholders of colleges of education through interviews, observations, and document analysis to determine the state of implementation as well as identify general challenges confronting the implementation of the B.Ed. curriculum. Data gathered shows a number of issues needing attention to assure the smooth implementation of the B.Ed. curriculum. Consequently, the resolution and expectations of these stakeholders were gained through the interviews. The statements in the tables in this chapter are directly attributable to the interview participants and the frequency column denotes the number of times these responses occurred. These issues have been categorized according to the entity (stakeholders) that should take action to address the issues: college, mentoring university and national levels (MoE/GTEC). The recurring themes from the data collected across the colleges are presented for each stakeholder group as follows:

College Level Responses

Table 10 provides a summary of the main themes derived from interviews for each curriculum component. Infrastructure was singled out because of its impact on implementation. The prevailing issues are presented followed by suggested solutions. The frequency of occurrence of the themes in terms of percentages are indicated in the table. This was then followed by a narrative for each component together with its infographics.

Table 10: Analytics Showing components, percentage frequencies and Themes - College Level (%)

Component	Frequencies (%)	Themes
Teaching and Learning	38	<ul style="list-style-type: none"> - Inadequate teaching and learning materials - High staff turnover due to poaching - Poor Internet connectivity - NTS is not embedded into teaching and learning, making its connection in what is taught unclear to student teachers.
Teaching and Learning (Support Needed)	52	<ul style="list-style-type: none"> - Provide sufficient teaching and learning materials for effective delivery. - Provide strong internet connectivity through negotiations with TELCOS - Work with GTEC to obtain clearance for new staff recruitment; appeal and provide rationales to mentoring universities to stop poaching from their CoE. - Workshops to develop tutors understanding of the NTS and how to explicitly apply/embed them in teaching and learning.
Assessment	67	<ul style="list-style-type: none"> - Assessment strategies must avoid delays in providing feedback. - Limited knowledge of tutors and students on the NTEAP, NTS, SSP and NTECF.
Assessment (Support Needed)	44	<ul style="list-style-type: none"> - Workshops to sensitize and guide the understanding of tutors on assessment of B.Ed. curriculum and its related policies such as NTEAP, NTS SSP and the basic school curriculum. - Efforts should be made to submit all assessment results electronically to avoid delays in providing feedback. - There should be greater communication between CoEs and some mentoring universities on issues related to assessment.
STS	66	<ul style="list-style-type: none"> - Mentors are not motivated to undertake for the STS responsibilities - There is no regular monitoring of the STS programme - No busses to transport students and tutors for STS services
STS (Support Needed)	63	<ul style="list-style-type: none"> - Organize regular workshops for mentors and lead mentors for STS activities.

		<ul style="list-style-type: none"> - There should be consistent and regular monitoring of STS activities and the roles of different actors by CoE and mentoring universities. - Provide busses to transport students and tutors for STS services or reduce student intake to reduce distances travelled by them to partner schools. - Offer coaching support to mentors. - Ensure all students and mentors have copies of the STS handbooks for the appropriate year level.
PD	28	<ul style="list-style-type: none"> - Limited exposure of tutors and students to the B.Ed. curriculum and related policies - Make resources, including PD/TPL handbooks, available to tutors
PD (Support Needed)	50	<ul style="list-style-type: none"> - College should organize regular workshops for tutors on all components of the B.Ed. curriculum and its related policies. - Supply PD manuals and handbooks to all tutors. - Tutors and mentors must the statements t to understanding the components of the B.Ed. curriculum and its related policies.
Infrastructure	63	<ul style="list-style-type: none"> - Infrastructure for classrooms and library, internet connectivity, and laboratories.
Infrastructure (Support Needed)	63	<ul style="list-style-type: none"> - College should engage network providers to increase internet bandwidth at prices students can afford. - College Management must allocate financial budget to support infrastructure development. Available infrastructure should be put to full use.
General Recommendations	43	<ul style="list-style-type: none"> - College Tutors must carry out research and produce more publications. - Set up committees and units with oversight responsibility over the B.Ed. curriculum and related policies. -
General Recommendations (Support Needed)	73	<ul style="list-style-type: none"> - Internet services, budget commitment to infrastructure development, workshops for tutors.

Based on the summary in Table 10, the colleges are of the firm belief that the adoption of the outlined steps would enhance the successful implementation of the B.Ed. curriculum in the Colleges of Education in Ghana. The following narrative throw further light on the components.

Teaching and Learning

The need for qualified teaching staff in colleges of education across the country cannot be over emphasized. Only 49% have the required minimum qualification, a situation which can impede implementation of the intervention in the colleges. Additionally, data from Table 10 show that 52% of the colleges indicated how fast they are losing their qualified academic staff for other institutions. This is because the ability of the Colleges to attract qualified tutors is currently unattractive. This is further exacerbated by the *“poaching efforts of universities”*. It is therefore suggested that the conditions of service of the staff of colleges should be improved to assure the retention of qualified staff in the Colleges. There is also the need for the Colleges to seek for financial clearance for the recruitment of qualified personnel. Also, Teaching and Learning Resources (TLRs) and related materials needed to facilitate the demonstration of practical skills to groom the student teachers in the requisite pedagogical skills necessary for their specialisms are woefully inadequate. The tutors and student teachers during the interview believed the allocation of adequate funds by the Colleges for the purchase of enough TLRs, and training of tutors on how to use *“low and no cost materials”* from the environment to develop relevant TLRs could be of great help to the effective delivery of lessons.

Further, the inadequacy of classroom furniture and limited internet access was also noted to be posing challenges to teaching and learning. The furniture situation and unreliability and non-accessibility of the internet facilities in the colleges are affecting students during lessons and the integration of ICT tools and use of smartphones for in-class search for online information during and after lessons. It was therefore suggested that the colleges should work urgently at improving classroom furnishing and the expansion of internet access to enhance current teaching and learning efforts for the development of digital literacy skills. In addition, documents reviewed and interviews with tutors of some colleges during the FOI exercise suggested that institutional policies at some colleges need to ensure that the allocation of courses to tutors is done with regards to the academic strengths and specialties of tutors.

Again, considering that some colleges have the *“old guard”* tutors, there is the need to periodically organize workshops for tutors on how to employ the integration of content and pedagogical skills and to address the core and transferable skills and other B.Ed. curriculum expectations in their delivery of lessons to assure improved performance on the B.Ed. programme. The recurring themes in the data on next steps for teaching and learning are presented in Figure 3.

Assessment

All B.Ed. programmes should incorporate a rigorous but equitable assessment framework based on the NTEAP. This should focus on the assessment for, assessment as and assessment of student teachers' learning and performances. Data from the interviews with college tutors as shown in Table 10 indicate that there was a need to increase tutors' exposure to the NTEAP toolkit and Flexible NTEAP Support Package to facilitate understanding and adoption of its tenets by tutors and student teachers in the assessment practices of the colleges. A

contributory factor to the lack of understanding and application is that in some CoE the NTEAP workshops were delivered online due to Covid and these have not been revisited.

Again, release of final assessment (end of semester) results tends to be delayed from the side of the mentoring universities. This therefore affects the planning and psychological stability of student teachers in the ensuing semester. Colleges believe that mentor universities should work at ensuring the timely release of results to facilitate student teachers' academic planning and psychological stability.

STS mentors and lead mentors are required to assess and score student teachers' STS activities, to supplement the final assessment scores of tutors. The FOI assessors observed that most STS mentors and lead mentors allocate scores without recourse to student teachers' performance in STS. Mentors and lead mentors and other college stakeholders were of the fervent view that periodic workshops and training for mentors and lead mentors is needed to improve STS mentors' and lead mentors' exposure to the scoring rubrics of the STS component of the B. Ed. Programme.

Finally, responses on assessment from the colleges, as shown in Table 10 some colleges are currently not engaging strongly in subject portfolio and subject project components of the NTEAP. The respondents are therefore calling for workshops and training programmes and monitoring by college leadership to expose tutors and students to the contents of the NTEAP toolkit, and using the Flexible NTEAP Support Package, to assure understanding, application, and conformity.

Supported Teaching in Schools (STS)

The prominent issue with mentors and lead mentors in the partner schools was the inadequate capacity to assist the student teachers when they visit the various partner schools for the STS activities. Some of the issues they raised were inadequate training on how to use the STS handbooks, limited knowledge of what is expected of them as mentors and lead mentors when they are assisting the student teachers. Inadequate supply of STS handbooks to mentors and lead mentors and even to some of the student teachers also featured prominently. A contributory factor to this was that student teachers do not return the handbooks and the additional required copies are not being printed. Another issue that came up strongly was the assessment of student teachers on the STS programme. They indicated that they had not been trained well on how to score the activities that are performed by student teachers during the STS visits. Also, college management focus group interviews reported that they find it very difficult to transport student teachers to and from the partner schools for the STS programme due to limited college buses. This made the colleges post a lot of student teachers to nearby partners schools resulting in overcrowding in some of the partner schools and most students reporting in the partner schools very late as the few or single bus had to dispatch them in batches and in turns.

Colleges should therefore endeavour to organize periodic training sessions for mentors and lead mentors to equip them with the necessary skills to enable them to guide the student

teachers for the effective implementation of the supported teaching in school's component. The colleges should liaise with their various mentoring Universities to print enough copies of the STS handbooks to be supplied to the student teachers and various partner schools in time. In situations where hard copies of the STS handbooks are not in adequate supply, colleges can rely on soft copies and send them to the various partner schools' social media platforms to guide them in executing their duties effectively. The colleges should budget to procure additional buses from the internally generated fund to support the smooth implementation of the STS programme. Colleges may also want to consider the idea of reducing the number of student applicants to a level that can provide effective STS experience, especially since there are too many JHS being trained than the space available to them.

Teacher Professional Development

Continuous professional development is an essential component of the teaching profession and a key component of B.Ed. curriculum implementation. The data gathered indicate that some colleges face a lot of challenges in organizing effective PD/TPL sessions. Some of the challenges include low interest of tutors, leading to low attendance at PD /TPL sessions; irregular supply of the PD/TPL manuals to tutors; inadequate motivation of PD/TPL coordinators and the tutors; and unreliable internet connectivity. Tutors also indicated that the PD/TPL sessions have become monotonous.

The college should endeavour to motivate the PD/TPL coordinators and the tutors by paying some monthly allowance from IGF. The college should serve enhanced meals for the tutors during PD/TPL sessions. It was also suggested that the leadership of the colleges should, in collaboration with the Appointment and Promotions committee add the attendance of PD/TPL as one of the criteria for promotion of academic staff. They should also liaise with their mentoring universities to get the PD manuals printed and distributed on time to the tutors to support effective organization of the PD/TPL sessions. The college should include need-driven topics, for example: implementing the NTEAP, applying the NTS in practice, the role of STS, or areas such as action research and publications in their PD/TPL sessions. The college should organize training sessions for newly recruited tutors on issues discussed in previous PD sessions before the tutors are recruited to the college.

Infrastructure

The colleges face a lot of infrastructural challenges, such as inadequate lecture halls, inadequate Halls of residence, and inadequate offices for academic staff. It was found that colleges have challenges with facilities such as science laboratories, ICT laboratories, resource centers, libraries, and internet connectivity. The college should collaborate with GTEC and GETFund to get sponsorship to enable them to put up halls of residence, offices for academic staff and lecture halls for effective teaching and learning. The colleges should also include in their annual budget to procure from their IGF the necessary facilities and services to expand the accessibility of internet connectivity for quality internet access on campus. The colleges should liaise with their mentoring universities to stock their libraries with current and appropriate

books, and e-libraries facilities to support the teaching and learning of the new B.Ed. curriculum.

Steps and Interventions Required at the Mentor University Level

Table 11 provides a summary of the main themes derived from interviews for each curriculum component. The prevailing issues are presented followed by suggested solutions. The frequency of occurrence of the themes are indicated in the table.

Table 11: Concerns and next steps interventions required of the mentor Universities (%)

Component	Frequencies (%)	Themes ²
Teaching and Learning	42	Unavailability of appropriate curriculum materials for both tutors and student teachers Limited e-resources
Teaching and Learning (Support Needed)	56	Train personnel and support college to get new computers with internet links and establish/access e-library Release of course materials on time.
Assessment	45	Poor assessment strategies Limited knowledge on the NTEAP, NTS, and NTECF Assessment policy of the mentoring university not aligned with the NTEAP.
Assessment (Support Needed)	55	The mentoring university should redesign their assessment policy to align with NTEAP requirement. Adherence to the components of the B.Ed. curriculum Workshops to be organised on NTEAP.
STS	33	Motivate mentors and lead mentors for the STS services
STS (Support Needed)	83	Workshops to be organised for mentors for STS activities Award certificates to Mentors and this should be a key requirement for promotion.
PD	35	Tutors lack training on NTEAP, NTS, NTECF toolkits. Tutors lack available resources
PD (Support Needed)	35	Regular workshops should be organized for tutors on components of the B.Ed. curriculum including NTEAP toolkit, NTS. Organize workshops on writing, research, and publication. Provide appropriate TLRs for tutors.

² The *frequencies* as presented reflects the frequency count or references related to the *theme* that occurred in the submissions during the interview. Thus, in relation to university mentor's role in resolving some of the issues observed, the consensus (53%) was that internet services, periodic visits by GTEC, improved funding support from GETFund, the provision and release of relevant materials and improved collaboration between mentor universities and colleges are critical in assuring the success of the B.Ed. Programme.

		Periodical engagement of the tutors to remind them of their expected roles.
Infrastructure	-	Infrastructure for classrooms and library.
Infrastructure (Support Needed)	-	Develop MoU to integrate colleges' libraries into the mentoring universities' e-library systems.
General Recommendations	54	Support for college departmental webinars and seminars Internet connectivity Effective collaboration between mentoring university and college Regular visit to colleges
General Recommendations (Support Needed)	53	Internet Services, visits by GTEC, encouraged collaboration, support from GETFund, immediate release of course materials, support for e-library.

Teaching and Learning

The colleges noted the role of the mentoring universities in their implementation of the B.Ed. programme as very crucial. Data collected across the colleges indicated several areas the mentoring universities would need to consider in supporting their affiliate colleges of education. From Table 11, 56% of the colleges intimated that the mentoring universities should consider supporting their affiliate colleges to acquire information from their libraries for both hard copies and e-library materials relevant to courses in the B.Ed. curriculum. The mentoring universities were called upon to assure the availability of curriculum materials such as course manuals, NTS, NTEAP documents, with periodic training for the tutors on how to use them in assisting the student teachers

Assessment

The place of assessment in the implementation of the B.Ed. programme cannot be over emphasized. Data from college leadership and tutor interviews, as shown on Table 11 indicates that 55% of the colleges are calling on the mentoring universities to consider organising workshops for the colleges to assure the full understanding of tutors and student teachers on the NTEAP (subject project, subject portfolio, end of semester exams and STS). The data also shows that the release of end of semester examination results from most of the mentoring universities is often delayed. This affects the student teachers in their academic planning for proceeding semesters, especially if they must resolve referrals. The mentoring universities are therefore requested to address the situation to facilitate the smooth and timely release of examination results of student teachers. The feedback from this is essential in ensuring the process of feed forward. Figure 9 shows the recurring themes on the kind of support required from the mentoring universities to improve the NTEAP compliance of the colleges

Supported Teaching in Schools

Responses from the mentors, lead mentors and tutors, and Table 11 indicate that as much as 83% of colleges intimated that not all the mentors and lead mentors were trained well to

partner with the colleges to implement STS component of the B.Ed. curriculum effectively. Therefore, there is the need for the mentoring universities to collaborate with their affiliate colleges to organize regular training on STS for tutors, mentors, and lead mentors. Mentoring universities should print enough copies of the STS handbooks to supply to the colleges for distribution to tutors, student teachers, mentors, and lead mentors. The mentoring universities should develop and use rigorous monitoring tools for regular monitoring of college activities, especially in the partner schools, to see how the STS component is being carried out. The mentoring Universities should collaborate with affiliate colleges to ensure the STS placement is being done according to programme specializations of the student teachers.

Professional Development

From the data collected, the colleges are facing several challenges in their quest to implement the B.Ed. curriculum. It is therefore imperative that the mentoring universities support the colleges affiliated to them so that they can implement the curriculum as intended. 35% of the responses from the colleges indicated the following: the mentoring universities should ensure that PD/TPL manuals are printed on time and sent to the colleges for distribution and use. Mentoring universities should liaise with the colleges to organize workshops on essential areas/topics such as NTEAP, applying the NTS in practice, the role of STS, and also on article writing, research and publications during their PD/TPL sessions in the colleges to avoid the monotonous nature of PD/TPL sessions and address areas of need.

The mentoring universities should collaborate with the Colleges Appointment and Promotions Committees to use PD/TPL session attendance as one of the criteria for promotions for tutors so that it will motivate tutors to attend the PD/TPL sessions regularly. Course coordinators in the mentoring universities should occasionally join the PD/TPL sessions in the colleges to serve as a motivation for tutors and also have first-hand information on the challenges or otherwise of the course tutors in the colleges.

Infrastructure

Infrastructure is one of the key facilities needed for the smooth implementation of the B.Ed. curriculum. From Table 11, 53% of the colleges were of the view that mentoring universities should support their affiliate colleges by linking the libraries of the colleges to their e-library facilities. Also, the universities should help the colleges acquire relevant books to stock the libraries of their affiliate colleges. The mentoring universities should assist the affiliate colleges to expand and boost their internet connectivity to facilitate effective teaching and learning.

SUMMARY NEXT STEPS AND INTERVENTIONS REQUIRED AT THE NATIONAL AND REGULATORY LEVEL

The research sought to determine some necessary steps to resolve the challenges hindering the implementation of the B.Ed. curriculum in the Colleges of Education in Ghana.

Table 12 provides a summary of the main themes derived from interviews for each curriculum component. The prevailing issues are presented followed by suggested solutions. The frequency of occurrence of the themes are indicated in the table. This was then followed by a narrative for each component together with its infographics.

Table 12: Analytics of Themes (%)

Component	Frequencies (%)	Themes
Teaching and Learning	39	College Teaching Support Laboratories and related resources. Gender friendly spaces
Teaching and Learning (Support Needed)	44	Appropriate TLRs Projectors and computers, science equipment.
Assessment	17	Monitoring and assessment of NTEAP
Assessment (Support Needed)	17	Implementation of the NTEAP, curriculum, manuals, and handbooks.
STS	52	Means to transport teachers and students
STS (Support Needed)	45	Buses for STS activities
PD	33	Additional staff, motivation of tutors.
PD (Support Needed)	22	Incentives for key officers, recruitment of new staff.
Infrastructure	60	Infrastructure for classrooms, halls, and laboratories.
Infrastructure (Support Needed)	45	Provide infrastructure for classrooms, laboratories. Recourses.
General Recommendations	21	Internet connectivity and access, Quality Assurance tutors
General Recommendations (Support Needed)	53	Internet services, financial clearance, visits by GTEC, collaboration with GETFund.

Based on the summary in Table 12, respondents of the FOI research were of the fervent view that incorporation of the next steps outlined in the subsections below at the national level shall assure an improvement in the implementation levels of the B.Ed. curriculum.

Overall, at a national level it would be useful to agree ways of using the CoE who have come out of this FOI study well as champions to support the development of practice where this is required in other CoE through events and visits.

Teaching and Learning

The findings from Table 12 show that the provision of teaching and learning resources such as projectors, smart boards and computers are critical to the success of the implementation of the B.Ed. curriculum. The research also revealed that the science and computer laboratories need to be equipped with modern tools and equipment's as well as advance computers to support effective teaching and learning activities in the colleges of education, This depends on the regulator, the ministry of education and the Ghana Education Trust Fund providing the requisite logistics such as teaching aid technologies, well stocked libraries, and well-furnished classrooms to enhance the learning experience of student teachers on the B.Ed. curriculum.

Assessment

The Fidelity of Implementation highlighted observations on the assessment of student teachers in relation to National Teacher Education Assessment Policy (NTEAP). Findings from table 12 reveal that both tutors and student teachers need more education on tenets of the NTEAP to be able to implement it as intended. It is therefore recommended that the Ministry of Education should support the mentoring universities by way of providing logistics to enable them to organise regular training on NTEAP for both tutors and student teachers to improve their understanding of the policy and its implications for assessment practice. The findings also showed that assessment for, assessment as, and assessment of learning is not used by tutors as required. However, interviews conducted with tutors and student teachers revealed that the course manuals and other related materials to support teaching and assessment in the colleges are not in adequate supply. It is therefore imperative that Ministry of Education and Ghana Tertiary Education Commission support the mentoring universities to ensure adequate supply of course manuals and other related materials to the colleges to support effective assessment practices. This should be complemented with an improved monitoring system by the regulator to ensure compliance and proper implementation of the B.Ed. curriculum by the mentor universities and the colleges in general.

Supported Teaching in School

Interviews with tutors, mentors, lead mentors and student teachers reveal that colleges are making conscientious efforts to ensure that student teachers are well engaged in executing the STS programme. However, Table 12 shows that 52% of the colleges are facing challenges with transport and other related logistics. This is forcing colleges to exceed the optimal student teacher STS/Mentor ratio. The research shows that, at the national level, the regulator and government need to improve on efforts to provide transport systems (Buses) as well as requisite incentives to mentors (remuneration and certification) to support the STS programme.

Teacher Professional Development/Teacher Professional Learning

Tutors are expected to keep improving their teaching by innovating their pedagogies to assure the gradual attainment of the critical aim of the B.Ed. programme, e.g., training teachers with 21st century skills. As a result, the B.Ed. curriculum has embedded in it periodic and mandatory Professional Development (PD/TPL) sessions. The findings from Table 12 suggest that even though on average 70% of college tutors were participating in the PD/TPL Sessions, they were also confronted with some challenges. Interviews with tutors revealed that the PD/TPL is time consuming and as such tutors should be motivated to attend the PD/TPL sessions. There is also the concern that the PD/TPL content should be varied to cater for other skill areas and for specific areas of need. The MoE and GTEC should collaborate with mentoring universities to use PD/TPL attendance register as one of the criteria for promotion of tutors to motivate them to participate in PD/TPL sessions.

Again, as college tutors need to meet the regulatory research qualification benchmarks, the mentor universities should be supported by GTEC to run periodic workshops to improve on the research output of tutors, which will invariably enhance pedagogic innovations. Further, colleges should be assisted to have rigorous recruitment drives with commensurate remunerations to retain qualified tutors (Ph.D. holders) in the colleges. The Regulator and Government are encouraged to ensure that special attention is granted to colleges with the provisions of financial clearance for recruitment. The regulator is also recommended to roll out policies that facilitate improved research collaboration between colleges and their mentor universities.

Infrastructure

One major concern that requires national intervention as part of implementing the B.Ed. programme is the provision of adequate infrastructure for accommodation (student teachers and tutors), classrooms, and sanitation systems. There is a consensus from most of the colleges visited during the FOI exercise that colleges require these facilities to enhance the learning experiences of the student teacher.

The resolution of the infrastructure challenges is proposed to be, but not limited to

- Proper allocation and release of resources to improve institution level developments by the government of Ghana.
- Conscious efforts to complete all outstanding lecture halls, staff and student accommodations and office infrastructure projects
- Expand existing structures to improve access.
- Provision and or expansion of internet facilities in the colleges.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

Changing the culture of teacher education and not just the system: a revolution

In 2014, it was clear the initial teacher education system was not responding effectively to the need to improve the quality of new teachers and so address children's declining learning outcomes. To tackle this the Transforming Teacher Education and Learning project was launched. The vision was to transform initial teacher education, to provide highly qualified and motivated new teachers who inspire their pupils to achieve better outcomes and to afford greater life chances. There was a radical rethinking and redesign of teacher education, the result of which was the B.Ed.

In its essence effective implementation of the B.Ed. requires that all those engaged in its delivery and management need to continue to refresh their understanding of what the new face of teacher education is, of why it needs to change, and break away from the educational tradition that had produced them.

It must be recognised that the B.Ed., like every curriculum, is predicated on specific theories of learning, pedagogy, and assessment, and that whilst teachers, tutors, are expected to implement this curriculum, they will tend to implement any new curriculum in a diversity of ways, based on their experience and beliefs, some of which may not be in sync with the designers' intention (Songer & Gotwals, 2005). Ultimately, to achieve the vision for the curriculum will require on going and targeted support across the issues and shortfalls identified through this report.

This is the first comprehensive study to assess implementation fidelity of the B.Ed. It has been undertaken at a time that the curriculum is yet to produce its first batch of graduates. A key purpose of this study was to identify areas of strength in the implementation and areas where it could be strengthened further. Alongside this, to use the lessons learnt to set out both the facilitating factors and the pitfalls that need to be avoided in curriculum implementation going forward. In this way, the study can provide an evidence base for GTEC to support the ongoing implementation of the B.Ed., empowering the mentoring universities and CoEs to even greater successes in changing the face of teacher education.

The B.Ed. as an intervention is complex, it requires carefully orchestrated change around all areas of teacher education. In this study, these changes have been characterized under four headings: the teaching and learning of student teachers, the assessment of student teachers, student teachers' preparation for, and experience of, supported teaching in school and tutor professional development. These four areas were evaluated against the six dimensions of FoI to give an overall picture of adherence resulting in 24 indicators. This report has detailed the significant variation across CoEs regarding the effectiveness of the implementation, the overall adherence, and the adherence in each of the four B.Ed. components.

The assessors categorized the CoE in terms of the level of adherence. Performance was based on the number of 'yes' scores across the 24 indicators. The colleges of education were categorized into 'high performing', 'medium performing', and 'low performing'. This resulted in the following breakdown across the 46 CoE:

High performing	70% + yes	7 CoE (15.22%)
Medium performing	50-69% yes	34 CoE (73.91%)
Low performing	0-49% yes	5 CoE (10.81%)

It is worth noting that half of the medium performing, 17 CoEs, were in the 60-69% of 'yes' indicators. This demonstrates significant progress towards implementation and a substantial step change in teacher education based on the B.Ed. That said, there is clearly work to be done to raise the quality of implementation still further.

The variation of performance of the COEs, individually and across the affiliations, suggests a need for support tailored to the different needs of each CoE. The data reveal a tendency for there to be a 'knock on' effect, whereby if a CoE appears to struggle with one of the four curriculum components they, tend to struggle with the other three. This is often compounded by significant infrastructure and resource issues.

It is clear from the outcome of the study that there is a lack of regular monitoring of the implementation of the B.Ed. in a significant number of the CoEs by bodies such as the Quality Assurance Units, the Heads of departments, the Principals, and by the mentoring universities. It may have been taken for granted that the implementation was going on well. That it was not in all cases is typified by issues such as: poor mentor and lead mentor training; lack of STS handbooks for some mentors and student teachers; ineffective reflective sessions between mentor and mentee; inadequate effort in operationalizing the NTEAP; irregularity in PD sessions; failure to institute personal tutors to support student teachers, and delays in the release of examination results.

Other factors include the characteristics of each implementing college community such as inadequate infrastructure (libraries, laboratories. classrooms), the readiness of tutors, the preparedness of principals as leaders (inadequate support by some), and attitudes of other participants; the mentoring institutions; and implementation support systems (i.e., training, monitoring, supervision, and technical assistance). Tutors in particular are a key factor in this implementation; their qualifications, motivation, level of familiarity, insufficient content, and pedagogic knowledge to fully understand the curriculum (for some), competing activities that takes tutors time from concentrating on their primary role, and sometimes leading to lack of preparation before teaching. Some of the issues above have been echoed in other studies by Carroll et al., 2007; Durlak & DuPre, 2008; Gersten et., al., 2010; and Santagata and colleagues, 2011. All these issues contribute to the mixed implementation picture.

It also needs to be noted that although the B.Ed. allows for some flexibility for tutors to be creative in their teaching and assessment, and therefore engender an increase in programme involvement, ownership, and incorporation (integrating new practice into regular practice) which may lead to better implementation, any deviations from nationally approved policy documents such as NTEAP and NTS are problematic. They dilute the opportunity for achieving the essential vision for the curriculum.

Principles about how people and organizations deal with innovation and change are reflected in research on fidelity. Fullan and Pomfret (1977) for instance in their review of several studies contend that:

If there is one finding that stands out in our review, it is that effective implementation of social innovations requires time, personal interaction and contacts, in-service training, and other forms of people-based support. Research has shown time and time again that there is no substitute for the primacy of personal contact among implementers, and between implementers and planners/consultants if the difficult process of unlearning old roles and learning new ones is to occur. Equally clear is the absence of such opportunities on a regular basis during the planning and implementation of most innovations. (p. 391)

Thus, it looks like for the full achievement of fidelity of implementation enough time needs to be given for the tutors to own the curriculum through measures such as regular training, constant interaction with colleagues, monitoring and review by critical friends, quality assurance personnel, and mentoring universities. This calls for a revolutionary change, not only system change but a cultural change that engulfs the entire teacher education ecosystem. Put this in place and surely this will drive the required change to occur in all colleges.

Recommendations

It is realized that FOI is both an important and a complex phenomenon that can be difficult to measure especially as it relates to a multisite study involving the 46 CoE spread nationwide. The results of the analysis lead to the following recommendations:

College level recommendations

1. At individual CoE level, discussions should take place to unpack further the underlying factors which gave rise to inconsistencies in implementation and support measures to address them, accordingly, ensuring manageable next steps and identifying what support is needed
2. COEs should mandate and support the Quality Assurance Units to institute regular monitoring and review of the implementation, use this to support the implementors and report to the Principal and GTEC.

3. Newly recruited tutors in colleges of education should be given intensive orientation on the B.Ed. and specifically the policy requirements and implications for teaching and assessment before they engage in any teaching activity.
4. Colleges of education should adhere to the policy of employing only research master's and PhD degree holders to reduce the large number (91) of non-research master's and Bachelors' degree holders in the colleges. They should support tutors to gain further qualifications as required.
5. Attendance at PD sessions should be enforced to raise attendance rate from an average of 70% to 100%.
6. CoE should use the fidelity tools for classroom observation, PD/TPL, and partner school assessment to monitor their progress and identify parts of the curriculum which require support. The monitoring exercise should take place every three months and should be reported to GTEC, PRINCOF and NIST who will then identify mechanisms for support. This will help create a culture of fidelity, in which the collection and reporting of fidelity are accepted parts of educational practice (Hill& Erickson 2021).

Mentoring university recommendations

1. The mentoring universities should work with GTEC to develop needs-based PD workshops focused on the four B.Ed. components and on quality assurance with the intent of deepening understanding and to support practical application of the principles of the reform. This should include intensive orientation programmes for new tutors
2. Mentoring universities should ensure the availability of NTS, STS and PD manuals for all student teachers, mentors and/ or tutors for every year. In addition, special training sessions should be organised for students and staff to develop deep understanding and application of the NTS.

GTEC/MoE level recommendations

1. GTEC should identify the strategies used by the CoEs who have achieved the highest level of fidelity and draw on their expertise to encourage and support others to follow their example through national or regional events and through local partnerships.
2. GTEC, PRINCOF and NTC should work together to identify ways the proposed national incentivised mentor PD programme can be developed and operationalised.
3. GTEC should work with the mentoring universities and PRINCOF to identify ways to strengthen external QA, the monitoring of, and support for, implementation
4. The MoE needs to address the issue of the infrastructure and resource shortfalls should be explored and viable options for improvements identified immediately.
5. GTEC should extend the affiliation agreement between mentoring universities and their colleges to provide time for a stronger bond of relationships to be formed to support strengthening all aspects of implementation
6. GTEC/MoE need to be aware that Colleges of Education require time to mature and to acquire the necessary infrastructure needed to produce the teachers Ghana's education system requires according to the NTS. Any attempt to rush any of them to become

autonomous will be a disaster. GTEC and MoE should support them to grow through provision of up-to-date infrastructure and carefully targeted professional development.

7. Serious, consideration should be given to developing a work-based, action research Masters' Level Qualifications focused on high quality teacher preparation and embedding the principles and practices of the reform. Support for this qualification should be provided through a hybrid model, with ongoing 'bite sized' support in the form of PD sessions.
8. A coaching and supervision support system should be instituted for all tutors.
9. ***The findings of the FOI indicate there needs to be a national dialogue involving The MoE, GTEC, PRINCOF, NIST and all relevant agencies to secure a consensus over how to further strengthen B.Ed. implementation. To ensure that the momentum of the reform is not lost there needs to be an agreed national, sustainable, implementation plan which includes active involvement and ownership of the B.Ed. by each college of education.***

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APPENDICES

Appendix A: Data collection tools

List of Tools	Link to access the tools
Fol Student Teacher (ST) Lesson Observation Sheet	https://tinyurl.com/9m8uyh75
Fol Tutor Lesson Observation Sheet	https://tinyurl.com/2rjvs46v
Fol Professional Development (PD)/Teacher Professional Learning (TPL) observation sheet	https://tinyurl.com/3y9wykma
Fol CoE Infrastructure Audit Tool	https://tinyurl.com/45nen45s
Document Analysis Tool	https://tinyurl.com/yp7csfvj
Fidelity of Implementation of B.Ed. Interview Proforma	https://tinyurl.com/4p4jmucw
Fol STS reflective session observation sheet	https://tinyurl.com/3ewz92xb

Appendix B - Individual college report

COLLEGE NAME	LINK TO COLLEGE REPORT (please click on link to access the college level report)
ABETIFI PRESBYTERIAN COLLEGE OF EDUCATION	https://tinyurl.com/vrkxzkez
ACCRA COLLEGE OF EDUCATION	https://tinyurl.com/bdfk2chp
ADA COLLEGE OF EDUCATION	https://tinyurl.com/4bnfuybk
AGOGO COLLEGE OF EDUCATION	https://tinyurl.com/4rww6k56
AKATSI COLLEGE OF EDUCATION	https://tinyurl.com/3zyxknb5
AKROKERRI COLLEGE OF EDUCATION	https://tinyurl.com/mrd96b7b
ALFARUQ COLLEGE OF EDUCATION, WENCHI	https://tinyurl.com/3wsz4pb2
ATEBUBU COLLEGE OF EDUCATION	https://tinyurl.com/2ne577uu
BAGABAGA COLLEGE OF EDUCATION	https://tinyurl.com/2bzrtvs2
BEREKUM COLLEGE OF EDUCATION	https://tinyurl.com/2p926xvs
BIA LAMPLIGHTER COLLEGE OF EDUCATION	https://tinyurl.com/bdevy8re
DAMBAI COLLEGE OF EDUCATION	https://tinyurl.com/yw29sd22
E.P. COLLEGE OF EDUCATION, BIMBILLA	https://tinyurl.com/mcbsb6jn
E.P. COLLEGE OF EDUCATION, AMEDZOFE	https://tinyurl.com/2p49cc5n
ENCHI COLLEGE OF EDUCATION	https://tinyurl.com/2jyzz2kc
FOSO COLLEGE OF EDUCATION	https://tinyurl.com/2p8cxtnx
GAMBAGA COLLEGE OF EDUCATION	https://tinyurl.com/29ay9zf2
GBEWAA COLLEGE OF EDUCATION	https://tinyurl.com/42c694xt
HOLY CHILD COLLEGE OF EDUCATION	https://tinyurl.com/3znkw4ha
JASIKAN COLLEGE OF EDUCATION	https://tinyurl.com/4advx4te
KIBI COLLEGE OF EDUCATION	https://tinyurl.com/3s8z2t7c
KOMENDA COLLEGE OF EDUCATION	https://tinyurl.com/y8uuk7bz

MAMPONG TECHNICAL COLLEGE OF EDUCATION	https://tinyurl.com/yjrnxepe
MCCOY COLLEGE OF EDUCATION	https://tinyurl.com/vtbbke32
METHODIST COLLEGE OF EDUCATION	https://tinyurl.com/2hs2j6ef
MOUNT MARY COLLEGE OF EDUCATION	https://tinyurl.com/b2bdxvs2
NJA COLLEGE OF EDUCATION	https://tinyurl.com/yc6t4vfc
OFFINSO COLLEGE OF EDUCATION	https://tinyurl.com/2p8ehh8u
OLA COLLEGE OF EDUCATION	https://tinyurl.com/3tac6wfv
PEKI COLLEGE OF EDUCATION	https://tinyurl.com/mprkm22w
PRESBYTERIAN COLLEGE OF EDUCATION, AKROPONG	https://tinyurl.com/3788a9wu
PRESBYTERIAN WOMEN'S COLLEGE OF EDUCATION, ABURI	https://tinyurl.com/uz83j58e
SDA COLLEGE OF EDUCATION, AGONA	https://tinyurl.com/26bwrrvs
SDA COLLEGE OF EDUCATION, ASOKORE	https://tinyurl.com/596udynr
ST. AMBROSE COLLEGE OF EDUCATION	https://tinyurl.com/5n6erm9s
ST. FRANCIS COLLEGE OF EDUCATION	https://tinyurl.com/2p8km5mp
ST. JOHN BOSCO COLLEGE OF EDUCATION	https://tinyurl.com/2txexfb
ST. JOSEPH COLLEGE OF EDUCATION	https://tinyurl.com/yckme372
ST. LOUIS COLLEGE OF EDUCATION	https://tinyurl.com/4zfv7pzs
ST. MONICA COLLEGE OF EDUCATION	https://tinyurl.com/4xby45nb
ST. TERESA COLLEGE OF EDUCATION	https://tinyurl.com/2p8f72se
ST. VINCENT COLLEGE OF EDUCATION	https://tinyurl.com/2p8ah4a7
TAMALE COLLEGE OF EDUCATION	https://tinyurl.com/murwmhf3
TUMU COLLEGE OF EDUCATION	https://tinyurl.com/yeypurab
WESLEY COLLEGE OF EDUCATION	https://tinyurl.com/ypmknp73
WIAWSO COLLEGE OF EDUCATION	https://tinyurl.com/27wth2c8

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Appendix C: Summary - Reporting proforma

ADHERENCE: IS THE B.ED. PROGRAMME BEING IMPLEMENTED AS INTENDED?			
	Yes ()	No ()	In Part ()
Competencies	Adherence (%)		
Exposure or Dosage			
Are the purposes of lessons clear and focused on all student teachers achieving the course learning outcomes?	69.6	17.9	12.5
Do student teachers demonstrate knowledge and understanding of the domains of the National Teachers' Standards (NTS)?	33.9	25.0	41.1
Are literacy in Ghanaian languages and English taught to all students in the in the B.Ed. Programme?	67.9	19.6	12.5
Does assessment of student teacher's learning include assessment of, for and as learning? E.G., assessment goes beyond recall of knowledge to higher order learning	73.2	7.1	19.6
Are the NTS central to the teaching and assessment of the courses?	35.7	26.8	37.5
Have the CoE run mentor PD sessions using the STS handbooks?	67.9	8.9	23.2
Are the PD/TPL sessions run in line with the PD/TPL Handbooks?	57.1	33.9	8.9
Programme Differentiation			
Is teaching differentiated after year one to prepare EY, UP and JHS teachers?	60.7	33.9	5.4
What support is offered to student teachers who are falling behind?	66.1	16.1	17.9
Does feedback support all student teachers' progress?	75.0	5.4	19.6
Are student teachers' STS placements in the age levels they are training for, after year one?	69.6	12.5	17.9
Do the PD/TPL sessions support effective differentiation across age levels?	53.6	33.9	12.5
Quality of Delivery			

ADHERENCE: IS THE B.ED. PROGRAMME BEING IMPLEMENTED AS INTENDED?			
	Yes ()	No ()	In Part ()
Do the lessons include appropriate interactive and creative approaches e.g., Group work, role play, storytelling etc. to support students achieving the learning outcomes?	69.6	21.4	8.9
Are subject knowledge and subject specific pedagogic knowledge integrated in lessons?	69.6	1.8	28.6
Do all teaching personnel have the requisite minimum academic and professional qualifications to enable them to teach the B.Ed. curriculum?	66.1	8.9	25.0
Do all teaching personnel have the knowledge and understanding of the B.Ed. requirements to enable them to teach it?	62.5	21.4	16.1
Are student teachers being prepared to teach the Basic School Curriculum? Do tutors model techniques appropriate to teaching the content of the Basic School Curriculum?	53.6	17.9	28.6
What is the student - tutor ratio?	60.7	30.4	8.9
Do student teachers demonstrate knowledge and understanding of the domains of the National Teachers' Standards (NTS)?	33.9	25.0	41.1
Is GESI responsiveness evident in lessons?	80.4	8.9	10.7
Are cross cutting issues and core and transferable skills integrated into lessons? e.g., problem-solving, critical thinking, communication, use of ICT as a tool for learning?	64.3	21.4	14.3
Are there appropriate TLMs, resources, infrastructure, and facilities to support student teacher learning? Including: technology, internet access, library, laboratories, science equipment, and sports equipment.	19.6	21.4	58.9
To what extent is blended learning being employed? How effective are these? What is the impact on student engagement and learning?	33.9	28.6	37.5
Do all student teachers receive timely feedback on all assessments?	50.0	10.7	39.3
Are assessments GESI responsive?	62.5	26.8	10.7

ADHERENCE: IS THE B.ED. PROGRAMME BEING IMPLEMENTED AS INTENDED?			
	Yes ()	No ()	In Part ()
Are the roles and responsibilities relating to internal and external assessments set out between CoE and University to ensure consistency, fairness, and accuracy in assessment, being implemented?	69.6	21.4	8.9
Have personal tutors been identified for student teachers and have they assumed their role as defined in NTEAP Toolkit?	32.1	41.1	26.8
How useful have students found the STS handbooks? Why?	64.3	26.8	8.9
How useful have mentors found the STS handbooks? Why?	58.9	23.2	17.9
Are Lead mentors and mentors performing their role in line with the School Partnership Agreement (SPA)?	44.6	16.1	39.3
Are student teachers' reflective sessions with the lead mentors, mentors and STS Coordinators being conducted effectively?	14.3	23.2	62.5
What has been the impact of STS on the quality of student teachers' teaching?	57.1	16.1	26.8
How do tutors rate the quality of the delivery of the PD/TPL sessions?	57.1	32.1	10.7
How do PDC/TPLC rate the quality of their preparation for running the PD/TPL sessions?	55.4	35.7	8.9
Participant Responsiveness			
How do tutors, mentors and lead mentors assess the impact of the B.Ed. on the quality of student teachers' teaching? (5 Participant responsiveness)	58.9	16.1	25.0
Are student teachers engaged with the B.Ed. as intended? For example, can they talk about the kind of teacher they want to become and why? (5 Participant responsiveness)	64.3	8.9	26.8
What proportion of mentors attend(ed) the STS PD sessions?	48.2	25.0	26.8
How useful have students found the STS handbooks? Why?	64.3	26.8	8.9
How useful have mentors found the STS handbooks? Why?	58.9	23.2	17.9

ADHERENCE: IS THE B.ED. PROGRAMME BEING IMPLEMENTED AS INTENDED?			
	Yes ()	No ()	In Part ()
Are student teachers' reflective sessions with the lead mentors, mentors and STS Coordinators being conducted effectively?	14.3	23.2	62.5
What has been the impact of STS on the quality of student teachers' teaching?	57.1	16.1	26.8
What of tutors attend the PD/TPL sessions?	50.0	28.6	21.4
Do tutors find the PD/TPL handbooks useful? Why and why not?	55.4	33.9	10.7
Facilitation Strategies			
Are there appropriate TLMs, resources, infrastructure, and facilities to support student teacher learning? Including: technology, internet access, library, laboratories, science equipment, and sports equipment.	19.6	21.4	58.9
Are Quality Assurance units in place with qualified personnel to ensure application of NTEAP?	50.0	26.8	23.2
Are there effective quality assurance and monitoring of assessment processes, including accuracy and consistency of assessments for continuous assessment components, STS, examination	58.9	12.5	28.6
Do student teachers, STS coordinators and mentors have copies of the STS hand books? (6 Facilitation strategies)	33.9	32.1	33.9
What systems are in place for quality assuring and monitoring STS? (6 Facilitation strategies)	57.1	25.0	17.9
Do tutors have copies of the PD/TPL Handbooks for each year?	48.2	37.5	14.3
Do tutors have copies of the relevant course manuals/ TPL materials?	55.4	30.4	14.3
How do the PD/TPL sessions impact on the lessons taught and on student teacher learning?	55.4	30.4	14.3
Intervention Complexity			
What are the barriers to full implementation of the teaching and learning approaches intended? How can these be addressed?	10.7	1.8	87.5

ADHERENCE: IS THE B.ED. PROGRAMME BEING IMPLEMENTED AS INTENDED?			
	Yes ()	No ()	In Part ()
E.g., Lack of adequate: resources, Internet access, infrastructure, lack of motivation or sufficient numbers of staff			
What are the barriers to full implementation of the intended assessment approaches, set out in the B.Ed. and the NTEAP in the CoE? How can these be addressed?	17.9	8.9	73.2
If any, what are the barriers to effective implementation of STS? How can these be addressed?	1.8	12.5	85.7
If any, what are the barriers to effective implementation of tutors' PD/TPL? And what could make it work better? (7 Intervention complexity)	5.4	28.6	66.1
Are the STS Handbooks delivered promptly and on time?	12.5	30.4	57.1
What is the mentor and student -teachers' ratio?	8.9	25	66.1
What is the link tutor and student teacher's ratio?	8.9	30.4	60.7
Are orientation sessions on STS organised for student-teachers?	5.4	25	69.6
Are the orientation sessions for student teachers informative?	12.5	26.8	60.7

Appendix D – Adherence disaggregated by mentoring universities

Mentoring University	College	Adherence		
		Yes	In Part	No
KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY	ST. JOSEPH COLLEGE OF EDUCATION	70.8%	16.7%	12.5%
	TAMALE COLLEGE OF EDUCATION	75.0%	25.0%	0.0%
	WESLEY COLLEGE OF EDUCATION	54.2%	41.7%	4.2%
	AKROKERRI COLLEGE OF EDUCATION	54.2%	45.8%	0.0%
	E.P. COLLEGE OF EDUCATION, BIMBILLA	58.3%	41.7%	0.0%
Sub total		62.5%	34.2%	3.3%
UNIVERSITY OF CAPE COAST	ABETIFI PRESBYTERIAN COLLEGE OF EDUCATION	50.0%	50.0%	0.0%
	ATEBUBU COLLEGE OF EDUCATION	29.2%	62.5%	8.3%
	BEREKUM COLLEGE OF EDUCATION	66.7%	33.3%	0.0%
	FOSO COLLEGE OF EDUCATION	75.0%	20.8%	4.2%
	JASIKAN COLLEGE OF EDUCATION	50.0%	50.0%	0.0%
	KIBI COLLEGE OF EDUCATION	50.0%	50.0%	0.0%
	OFFINSO COLLEGE OF EDUCATION	58.3%	41.7%	0.0%
	OLA COLLEGE OF EDUCATION	25.0%	75.0%	0.0%
	SDA COLLEGE OF EDUCATION, AGONA	66.7%	33.3%	0.0%
	ST. AMBROSE COLLEGE OF EDUCATION	45.8%	54.2%	0.0%
	ST. FRANCIS COLLEGE OF EDUCATION	50.0%	50.0%	0.0%
	ST. MONICA COLLEGE OF EDUCATION	66.7%	33.3%	0.0%
	ST. TERESA COLLEGE OF EDUCATION	75.0%	20.8%	4.2%
	HOLY CHILD COLLEGE OF EDUCATION	62.5%	29.2%	8.3%
Sub total		55.1%	43.2%	1.8%
UNIVERSITY OF DEVELOPMENT STUDIES	GAMBAGA COLLEGE OF EDUCATION	62.5%	29.2%	8.3%
	MCCOY COLLEGE OF EDUCATION	50.0%	50.0%	0.0%
	ST. VINCENT COLLEGE OF EDUCATION	41.7%	45.8%	12.5%
	TUMU COLLEGE OF EDUCATION	16.7%	83.3%	0.0%
	ALFARUQ COLLEGE OF EDUCATION, WENCHI	66.7%	33.3%	0.0%
	DAMBAI COLLEGE OF EDUCATION	66.7%	33.3%	0.0%
Sub total		50.7%	45.8%	3.5%
UNIVERSITY OF EDUCATION, WINNEBA	ADA COLLEGE OF EDUCATION	66.7%	33.3%	0.0%
	AGOGO COLLEGE OF EDUCATION	58.3%	41.7%	0.0%
	AKATSI COLLEGE OF EDUCATION	62.5%	37.5%	0.0%
	BAGABAGA COLLEGE OF EDUCATION	66.7%	33.3%	0.0%
	MAMPONG TECHNICAL COLLEGE OF EDUCATION	58.3%	41.7%	0.0%
	METHODIST COLLEGE OF EDUCATION	70.8%	29.2%	0.0%
	PRESBYTERIAN COLLEGE OF EDUCATION, AKROPONG	66.7%	33.3%	0.0%
	SDA COLLEGE OF EDUCATION, ASOKORE	70.8%	29.2%	0.0%

	ST. JOHN BOSCO COLLEGE OF EDUCATION	50.0%	50.0%	0.0%
	ST. LOUIS COLLEGE OF EDUCATION	54.2%	45.8%	0.0%
	BIA LAMPLIGHTER COLLEGE OF EDUCATION	62.5%	37.5%	0.0%
	KOMENDA COLLEGE OF EDUCATION	66.7%	33.3%	0.0%
	NJA COLLEGE OF EDUCATION	66.7%	20.8%	12.5%
	WIAWSO COLLEGE OF EDUCATION	54.2%	45.8%	0.0%
	PRESBYTERIAN WOMEN'S COLLEGE OF EDUCATION, ABURI	50.0%	50.0%	0.0%
Sub total		61.7%	37.5%	0.8%
	E.P. COLLEGE OF EDUCATION, AMEDZOFE	54.2%	45.8%	0.0%
	ENCHI COLLEGE OF EDUCATION	83.3%	16.7%	0.0%
	GBEWAA COLLEGE OF EDUCATION	62.5%	37.5%	0.0%
	MOUNT MARY COLLEGE OF EDUCATION	50.0%	50.0%	0.0%
	PEKI COLLEGE OF EDUCATION	66.7%	29.2%	4.2%
UNIVERSITY OF GHANA	ACCRA COLLEGE OF EDUCATION	66.7%	16.7%	16.7%
Sub total		63.9%	32.6%	3.5%

Appendix E– Lesson observation (tutors)

Competencies	Yes (%)	No (%)	In Part (%)
Exposure or Dosage			
Is/Are the purpose(s) of the lesson clear and focused on student teachers achieving the course learning outcomes?	80.9	3.4	15.7
Does the tutor demonstrate knowledge and understanding of the domains of the National Teachers' Standards (NTS)?	52.0	15.7	32.4
Does the tutor link the lesson to the basic school curriculum?	42.6	41.2	16.2
Does assessment of student teacher's learning include assessment of, for and as learning? E.G., assessment goes beyond recall of knowledge to higher order learning	70.6	4.9	24.5
Programme Differentiation			
Is teaching differentiated after year one to prepare Early Grade, Upper Primary and Junior High School teachers?	67.6	25.0	7.4
Is support offered to student teachers who are not meeting the minimum standards for the lesson? If yes, what support is given?	64.2	11.3	24.5
Quality of Delivery			
Does the lesson include appropriate interactive and creative approaches e.g., Group work, role play, storytelling to support students achieving the learning outcomes?	72.1	8.8	19.1
Does the tutor demonstrate knowledge and understanding of the domains of the National Teachers' Standards (NTS)?	52.0	15.7	32.4
Is Gender Equality and Social Inclusion responsiveness evident in the lesson?	71.6	8.3	20.1
Are cross cutting issues integrated in the lesson? e.g., problem-solving, critical thinking, communication, use of ICT as a tool for learning?	74.5	4.4	21.1
Are core and transferable skills integrated in the lesson? e.g., problem-solving, critical thinking, communication, use of ICT as a tool for learning?	76.5	3.4	20.1
Are teaching/learning materials and other resources being used to support learning?	52.5	17.2	30.4
Does the tutor integrate content and pedagogy appropriately in the lesson?	60.3	13.2	26.5
Does the tutor link the lesson to the basic school curriculum?	42.6	41.2	16.2
Intervention Complexity			
Were there any barriers to full implementation of the teaching and learning approaches intended? E.g., Lack of adequate: resources, Internet access, infrastructure, lack of motivation or enough staff.	24.0	10.8	65.2

Appendix F– Lesson observation (student teachers)

Competencies	Yes (%)	No (%)	In Part (%)
Exposure or Dosage			
Is/Are the purpose(s) of the lesson clear and focused on learners achieving the course learning outcomes?	64.3	11.9	23.8
Does the ST demonstrate knowledge and understanding of the domains of the National Teachers' Standards (NTS)?	26.2	16.7	57.1
Does the ST link the lesson to the appropriate level of the basic school curriculum?	57.1	40.5	2.4
Does assessment include assessment of, for and as learning? E.g., assessment goes beyond recall of knowledge to higher order learning	47.6	7.1	45.2
Programme Differentiation			
Is support offered to learners who are not meeting the minimum standards for the lesson? If yes, what support is given?	54.8	16.7	28.6
Quality of Delivery			
Does the lesson include appropriate interactive and creative approaches e.g., Group work, role play, storytelling to support learners achieving the learning outcomes?	42.9	23.8	33.3
Does the ST demonstrate knowledge and understanding of the domains of the National Teachers' Standards (NTS)?	26.2	16.7	57.1
Is Gender Equality and Social Inclusion responsiveness evident in the lesson?	61.9	4.8	33.3
Are cross cutting issues integrated in the lesson? e.g., problem-solving, critical thinking, communication, use of ICT as a tool for learning?	33.3	11.9	54.8
Are core and transferable skills integrated in the lesson? e.g., problem-solving, critical thinking, communication, use of ICT as a tool for learning?	33.3	16.7	50.0
Are teaching/learning materials and other resources being used to support learning?	42.9	23.8	33.3
Does the ST integrate content and pedagogy appropriately in the lesson?	33.3	42.9	23.8
Does the ST link the lesson to the appropriate level of the basic school curriculum?	57.1	40.5	2.4
Were there any barriers to full implementation of the teaching and learning approaches intended? E.g., Lack of adequate: resources, Internet access, infrastructure, lack of motivation or enough staff	64.3	14.3	21.4