

THE NATIONAL TEACHER EDUCATION CURRICULUM FRAMEWORK

THE ESSENTIAL ELEMENTS
OF INITIAL TEACHER EDUCATION



Ministry of Education
REPUBLIC OF GHANA



T-TEL
Transforming Teacher Education and Learning

Foreword

The performance of the education system and its impact on children's learning outcomes has been one of the critical issues of concern to Ghanaian citizens. The objective of the Ministry of Education is to improve the learning outcomes of all learners in our schools through the implementation of appropriate policy measures. This objective necessitates improving the quality of the teaching force through initial continuing teacher development.

The National Teacher Education Curriculum Framework, developed through stakeholder consultations, is the central vehicle for the transformation of Initial Teacher Education in Ghana. The Curriculum Framework has been developed on the premise that a critical step to achieving the quality of education for all is to train increased numbers of effective, engaging and inspirational teachers. Through this, the Framework will provide support for addressing the on-going and systemic problem of underachievement of Ghanaian children. The strength of this framework is that, it:

- specifies the essential elements of what an initial teacher education programme requires to train the teachers needed to deliver inclusive, equitable and high-quality education for all;
- is driven by the National Teachers' Standards as the determiner of who a 'good' teacher is; and
- will support system change in teacher education and ultimately in education in Ghana to secure every child's right to teachers who are able to support learning and progress.

The Framework provides the benchmark against which all Teacher Education Curricula in Ghana will be reviewed and revised. It will allow flexibility and diversity among different teacher training institutions while ensuring consistency and quality in teacher education curriculum through compliance with the defined elements of the Framework.

While the Framework is essential to the transformation of teacher education, the Government is mindful that a number of attendant policy issues will also have to be addressed in order to ensure its implementation.

As a policy document, all stakeholders involved in initial teacher education must ensure that the National Teacher Education Curriculum Framework is employed effectively as the vehicle to transform teacher education and to bring about improved learning outcomes in our education system.



Hon. Dr. Matthew Opoku Prempeh

Minister for Education

Acknowledgement

The development of the National Teacher Education Curriculum Framework (NTECF) was under the guidance of the National Council for Tertiary Education (NCTE) and the National Teaching Council (NTC), and draws on the expertise of Ghanaian curriculum and education experts who worked over many months, drawing on international best practices. The process was interactive and engaged national stakeholders in a series of consultations across the country to draw on both the experiences and aspirations of education stakeholders. The process was supported through the institutional development component of the Transforming Teacher Education and Learning (T-TEL) project as part of the process of transformation of Colleges of Education (CoE) in Ghana into tertiary institutions. Professor Jophus Anamuah-Mensah, the key adviser to T-TEL Institutional Development, spearheaded the technical team supported by Bea Noble Rogers and Dr. Eric Daniel Ananga.

The development of the National Teacher Education Curriculum Framework (NTECF) was done in phases. Each phase drew directly and explicitly on the earlier phase and on the expertise of national strategic stakeholders/partners in teacher education and education more widely, as well as the participation of significant individuals and groups for contributions to

and consultation over the developing framework. We cherish the constructive inputs from key stakeholders such as Principals and Tutors of Colleges of Education, Vice Chancellors of Teacher Education Universities, Parliamentary Select Committee on Education, Regional and District Directors of Education, Teacher Unions, NGOs, and Civil Society who helped to shape the framework. The team is grateful for the invaluable inputs from Akwasi Addae-Boahene the National Programme Manager of T-TEL, who has been very supportive and has shown extraordinary commitment to the development of the National Teacher Education Curriculum Framework. We cannot leave out all the staff and management of T-TEL who have been the backbone during the entire process. Finally, the team is very appreciative of the technical team who authored, responded to the consultation and showed commitment in the development of the National Curriculum Framework.

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Summary: introduction, rationalisation and overview of the Curriculum Framework

1. Rationale for the Curriculum Framework

1. The core rationale for the Curriculum Framework is that it concentrates on the essential elements an Initial Teacher Education (ITE)¹ curriculum needs to focus on, in order to prepare competent teachers, and against which all Teacher Education Curricula², including the 4-year Bachelor of Education (B.Ed), can be reviewed. Any future curriculum must be presented in terms of the four pillars and the cross-cutting issues and should explicitly reflect how they relate to each other to prepare effective engaging inspirational teachers. This framework is for the initial training of all teachers at the pre-tertiary level. All material included in a revised curriculum needs to be justified in terms of how it will support the student in becoming a more effective teacher. Feedback from key stakeholders from the writing of the Teachers' Standards onwards pointed to a number of issues with the existing or current Teacher Education Curricula. Specifically, that it needed revision in order to:
 - 1.1. fully prepare student teachers to teach the School Curriculum, in particular, English, mathematics and science, concentrating on relevant subject and pedagogical knowledge;
 - 1.2. equip student teachers to develop pupils' languages (Ghanaian and English) and literacy so all can access the curriculum;
 - 1.3. give higher status to practical teaching experience through supported and assessed teaching in school;
 - 1.4. widen the focus of assessment to include in-school learning and assignments as well as examinations, with students being assessed against the Teachers' Standards;
 - 1.5. deepen student teachers' curriculum knowledge through introducing level specialisms – KG-P3, P4-P6, JHS and SHS;
 - 1.6. emphasise a more interactive, learner-focused approach to training, modelling good teaching;
 - 1.7. be explicit in addressing vital cross-cutting issues: equity and inclusivity, assessment, core skills, professional values, action research and reflection;
 - 1.8. these essential issues have shaped the Curriculum framework, which is underpinned by the National Teachers' Standards as the determiner of what a 'competent' teacher is, and
 - 1.9. the goal is to ensure that every child's right to competent teachers who are able to support learning and progress is fulfilled.

2. Creating the Framework

1. The Framework has been written by experts in the Teacher Education Community and through a National Consultation with all stakeholder groups. The process has been driven by the idea that fundamental change is most likely when there is a shared imperative for change coupled with the sustained engagement of stakeholders. There have been four cycles of national forum underlying the refining of the framework by the expert group.

¹Pre-service teacher education is synonymous with initial teacher training (ITE)

²The framework covers all the pre-service programmes in the country

2. The Fourth National Forum received overwhelming endorsement for the framework to drive the revision of the Teacher Education Curriculum. Participants were asked: do you endorse the framework overall as the appropriate direction to achieve the vision for education? In written responses, 99.0% gave their endorsement.
3. Who contributed to and endorsed the Framework?
 - The Technical and Expert committees, chaired by Prof. Mohamed Salifu and included experts from: MoE, GES, UCC, UEW, UG, UDS, NTC, NCTE, NAB, NCCA, Colleges of Education, USAID Learning Project, and co-opted Civil Society representatives
 - Through the National Forum, the following were involved: teachers, tutors, student teachers, pupils, district and regional Directors of Education, Development Partners (DP), teacher unions, academics, private universities offering teacher education programmes, NGOs, and colleges of education.

3. Framework at a glance: the keys to success in teacher education

Four Pillars of Teacher Education	The essential knowledge, skills and understanding necessary for effective teaching
1. Subject and curriculum knowledge	Secure content knowledge for specialism and subjects is the key to teaching the school curriculum.
2. Literacy studies (Ghanaian languages and English)	Language is the key to success in education and life. Getting this right is the most critical issue for our children's future and for education in Ghana.
3. Pedagogic knowledge	Knowledge of instructional and assessment strategies is key to supporting the learning and progress of all pupils.
4. Supported teaching in school	Extended, guided and assessed teaching which enables student teachers to apply their knowledge and the key to improving their teaching.
Cross Cutting Issues	These are issues that cut across all the four pillars and are necessary for teachers to ensure learning for all.
Equity and inclusivity	Cultural and social linguistic diversity in Ghana is manifest in all classrooms. Understanding this is key to addressing barriers to learning, and teaching for diversity.
Professional values and attitudes	The key to professionalism, the development of professional identity, social norms, ethics and practices of the school and teaching profession, including reflective practice and a commitment to lifelong learning.
Assessment strategies	Assessment literacy, understanding the principles and practices of assessment and testing, is key to effective planning for differentiation and making provision for all pupils in the ages, subjects and contexts being taught.
Core skills	The competencies and attributes key to being an effective teacher, including: critical thinking, problem solving skills, creative thinking, communication skills, information and communications technology, social skills, and commitment to life-long learning.
ICT	A key to effective communication, teaching and learning in the 21s century.

Other Issues	These are issues that impact on training and professional development of new teachers
Specialism pathways	Key to: depth and breadth of knowledge of what is to be taught; to connecting with the developmental level of children and to consolidating content knowledge.
Assessing student teachers	Assessment of students against the National Teachers' Standards through professional portfolios including evidence from: in-school learning; assignments and examination results, is key to assessment having a positive impact on student teachers' progress to being effective new teachers.
CPD for mentors, CoE leaders, etc.,	Key to effective training and support in school and in college is: a rigorous CPD structure with an award system for the full range of stakeholders involved in teacher preparation.
Quality assurance strategy	Key to making sure the Teacher Education system is working: a robust system of internal and external QA to monitor, evaluate and review the quality and consistency of implementation at each level.

1. Weightings for the four pillars in the Framework in both time and credits are varied for the different specialism pathways

4. Policy issues raised through the Framework

- Demonstration/Partner Schools: All teacher training institutions should have high quality demonstration/partner schools for teacher preparation. Teachers in these schools should receive special training and appropriate incentives.
- Languages: Review and strengthen the policy for teaching and learning in Ghanaian Languages and English. The need to consider how all languages will have trained teachers to teach. There is the need to consider requiring all students to study two Ghanaian languages as was the case in the past.
- Specialism Pathways: Introduce Specialism pathways for: early grades, Primary, JHS and SHS.
- Continuing Professional Development (CPD): Implementing rigorous CPD structure for mentors, tutors and others with appropriate incentives.
- Quality Assurance: institute a system of quality assurance for Teacher Education in schools and training institutions. The role of the National Inspectorate Board, National Teaching Council and NAB will be pertinent here.
- Raising the profile of teaching: implement career structure and associated incentives to bring the right people into teaching, shape them to be the best to fully meet the country's specific needs, and continuously develop them to give their best once they go into the schools. Raise the entry requirements and the condition for entry into teacher education as well as the duration of training at the college of education level. According to Education International (2011, Article XI):

Teachers should be accorded a high professional status in society commensurate with their professional responsibilities, qualifications and skills, and the contributions which their profession makes to the development of society.

Chapter 1

Background, policy context,
concerns and vision for
teacher education

Introduction

This document sets out a Curriculum Framework against which all future teacher education curricula would be assessed. Through a wide consultation, the Curriculum Framework overall has drawn on the expertise of all the key stakeholders and has been written by a group of leading teacher education experts. This chapter sets out the background of and context for the development of the Curriculum Framework.

Ghana's educational system was acclaimed to be one of the best in Sub-Saharan Africa in the 1960s. However, over time the education system declined and many reform efforts were put in place to address this issue. While this was going on, a parallel reform took place in the teacher training institutions to address acute shortages of qualified teachers experienced by the system.

Teacher education and in-service education and training for basic and secondary schools are undertaken by initial teacher education institutions. The Colleges of Education award diploma qualifications, while the universities awards Bachelor of Education degrees and PGDE/certificates in education. Until recently, only the University of Cape Coast and University of Education, Winneba, offered university-level training but now the University for Development Studies (UDS) and the University of Ghana, as well as other private universities have programmes in teacher education.

The present reform in teacher education, especially in the Colleges of Education to prepare more qualified teachers, has been called into play by increased enrolment but without the concomitant increase in the quality of teacher education as a result of the implementation of the constitutional provision (1992) for Free Compulsory Universal Basic Education (FCUBE) for all citizens, the United Nation's Millennium Development Goals (MDGs) and UNESCO's Education for All (EFA) initiatives. These measures were designed to increase access to education. Hence more children are going to school but their performance is low. Faced with the problem of inadequate quality provision in basic schools and senior high schools, and technical/ vocational institutes, coupled with insufficient and poorly equipped teachers, there is a growing need to improve the professional development of teachers at basic and second cycle schools.

Improvement in the quality of education will require competent teachers who are: fully prepared to teach the school curricula when they take up their first post; understand and are able to address the literacy and language needs of their students; use a learner-centred pedagogy and an inclusive approach, sensitive to the needs of vulnerable groups, including girls and those with special educational needs and disabilities; are able to draw on family and community support and create a safe and conducive learning environment. There is a greater demand for increasing the number of qualified teachers required in an expanding school system.

Challenges of the school system that inform teacher education

Although the school education system has achieved a lot, especially in the area of gender parity at the primary level, increasing gross enrolment and completion rates, there are a number of issues that are of concern for the efficiency and effectiveness of the system. These concerns include:

- the increasing burden of the educational system on Ghanaian children due to curricula that are dissociated from the personal and social context of children, and the inadequate preparation of teachers who are not able to connect with children and respond to their individual needs;
- poor development of numeracy and literacy skills among pupils in basic education;
- poor performance in the core subjects especially English, integrated science and mathematics at both the basic and secondary levels;
- poor professional conduct of teachers as seen through teacher absenteeism and loss of time-on-task;

- the current concerns, needs and motivations of the youth today is quite different from those of earlier years, and is not reflected in the teacher education curriculum;
- the national pre-tertiary level education curricula that are currently in use were developed more than five years ago and do not meet the proficiency, literacy, numeracy and life skills, and creative skills expected of adults in a rapidly changing society;
- a persistent presence of untrained teachers in the classroom impacts negatively on learning outcomes;
- there is an overemphasis on covering too many subjects in the basic education curriculum; this does not allow for an in- depth understanding of the content for each age level;
- teachers have very little support and resources to develop the skills required to integrate ICT into teaching and learning;
- there is insufficient support for teachers to integrate critical thinking, creativity, innovation, entrepreneurship, communication, collaboration and problem-solving skills in the school curriculum.

Concerns with initial teacher education Curriculum

The current teacher education curriculum faces a number of challenges including the following:

- in the past twenty years, there have been numerous minor reforms in the teacher education system in Ghana, which have had very little impact on children’s learning outcomes;
- the teacher education curriculum has not adequately responded to the lack of improvement in learning outcomes at the basic school level; this strengthens the need for reforms in the teacher education sector in Ghana³;
- there is a low level of teacher participation in decision-making (e.g. test-item preparation) and inadequate professionalism in curriculum development;
- the current curriculum in teacher education is weighted heavily towards subject-content knowledge to the detriment of curriculum space for developing understanding of pedagogy and practical classroom teaching skills, a situation referred to as ‘academic drift’;
- there is a disconnect between the initial teacher education curriculum and the Primary, JHS and SHS curricula;
- courses in mathematics, English and science focus far more significantly on content that is not required to be taught at primary, JHS and SHS level;
- an overcrowded curriculum does not allow for reflection and cross Curriculum linkages. The curriculum for training basic education teachers prepares teachers to teach a 9-year age range in all foundation subjects; this means that the curriculum space for specialist subject-content knowledge linked to age-appropriate pedagogy is limited;
- the concerns and needs of today, that is, of the 21st century, are not reflected in the teacher education curriculum – it has not moved with the times;
- the current teacher education curriculum does not include clear progression in learning to teach effectively (e.g. according to the competencies set out in the ‘Pre-tertiary Teacher Professional Development and Management Policy in Ghana’ or the National Teachers’ Standards);
- subjects/courses are taught separately with no connection made to other subjects/courses;
- although teacher education provides structures and expectations of mentor support and practicum placement, mentoring, visits by subject specialists, and pre-and post-supervisory conferences rarely occur as intended;

³See Lewin and Stuart 2003, Jane Cullen 2014

- the assessment system in the initial teacher education curriculum is too information-oriented, extremely quantitative and lacks comprehensiveness. It is also summative with 60% assessment by examination and 40% continuous assessment which can consist of a few quizzes and an assignment;
- a student's progression depends on success in the examinations. This makes the curriculum both theory laden and examination focused, thereby preventing students from developing appropriate pedagogical skills;
- teacher education programmes do not develop the attitudes, values, dispositions, habits and interests of teachers. The current assessment system has no place for assessing these aspects;
- student teachers have little or no opportunity to examine their own beliefs and biases and reflect on their own experiences as part of their classroom transaction and enquiry;
- current teacher education programmes do not recognise the centrality of language in the curriculum. As such, preparation to develop children's language and literacy is not prioritised.

Other issues include the following:

- theory courses are taught in isolation and have no clear links with practical work and the realities on the ground;
- there is the assumption that the links between learning theories and pedagogical knowledge are formed automatically in the understanding of the student teacher;
- the practice of teacher education is shaped more by a technical-rationalist approach that requires teachers to implement specific pre-determined rules/actions instead of being shaped by a research-based thinking paradigm;
- each of the universities providing initial teacher education has a different set of standards for assessing who a 'good teacher' is. This tends to prepare teachers with different levels of competence;
- issues of equity, gender and inclusion are not part of the day-to-day discourse in teacher education;
- insufficient space is provided for encouraging the development of transversal skills, of problem solving, critical thinking, creativity, collaboration, communication, innovation, entrepreneurship, digital literacy etc., required for productivity in the twenty-first century;
- distance learning and sandwich programmes do not include supported and assessed student practicums, school observation and on-campus teaching practice (OCTP) and tend to be theory focused; assessment in this mode is also more quantitative and does not encourage critical thinking and higher-order skills.

In addition, two critical policy documents set the stage for the reform of teacher education in the country. These are the National Teachers' Standards (NTS, 2016), and the Pre-tertiary Teacher Development and Management (PTPDM) policy.

The National Teachers' Standards (NTS) set out the minimum levels of practice that all trained teachers must reach by the end of their pre-service teacher education course in order to play a critical role in inspiring and challenging all pupils to achieve their potential. All initial teacher education must explicitly provide the opportunity for student teachers to fully meet all the NTS.

The PTPDM is envisioned to support, develop and nurture teachers in the basic and second cycle schools in Ghana to enable them to function effectively as reflective and proficient practitioners capable of providing quality education for all Ghanaian children.

The above issues and policies underpinned the development of the Curriculum Framework.

Ghana's teacher education philosophy

The philosophy underpinning teacher education in Ghana aims at producing teachers imbued with professional skills, attitudes and values, and depth and breadth of content knowledge as well as the spirit of enquiry, innovation and creativity that will enable them to adapt to changing conditions, use inclusive strategies and engage in life-long learning. The teachers are required to have a passion for teaching and leadership, to reflect on their practice, and engage with members not only in the school community but also in the wider community, and act as potential agents of change.

This is derived from MoE's vision of preparing and equipping all Ghanaians 'with relevant education and productive and adaptive skills to promote the socio-economic development of the country' (ESP 2016-2030) and the adoption of the UN Sustainable Development Goal (SDG) Goal⁴ to: 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all'.

⁴This is the same as student teachers

Chapter 2

Overview of the Curriculum Framework

Introduction

The National Teacher Education Curriculum Framework defines the overarching vision, critical content areas, pedagogy, linkages, and assessment from which Teacher Education curricula will be developed. It is a tool that allows flexibility and diversity among different training institutions while ensuring consistency and quality in teacher education curriculum through compliance with the defined elements of the Curriculum Framework.

The teacher education curriculum envisaged in this framework is one that is both open and eclectic, embracing different schools of thought and ideas that, together, assist in developing the repertoire of knowledge, skills, attitudes and values that a beginning teacher needs if he or she is to meet the challenges in the school system. The intention of all these is to develop a teacher who:

- demonstrates attainment of the minimum levels of practice, as set out in the National Teachers' Standards in order to inspire and challenge learners to achieve their potential;
- has a secure subject matter knowledge at the level he/she is being prepared to teach at, and at the same time has a good understanding of national educational policies;
- demonstrates an ability to integrate his/her curriculum, subject and pedagogical knowledge, and plans for and uses differentiated interactive instructional strategies and resources to improve the learning outcomes of all learners irrespective of gender, disabilities, or geographical location;
- has a good grasp of the content of the textbooks, teachers' guides, syllabi and other resources required by the curriculum at the specific level of training (early childhood, primary, junior secondary school or senior secondary school);
- has a good understanding of the learners, their development, their needs and their socio-cultural and political backgrounds, as well as a respect for their rights as human beings;
- has a good understanding of their own professional identity, beliefs, emotions, strengths and weaknesses;
- views learners as active constructors of knowledge and is therefore able to create learning contexts that are learner- centred and encourages learners to collaborate with others;
- exhibits technology and information literacy and is able to integrate technology, including open education resources in his/ her teaching;
- is an active co-learner with his/her students, a life-long learner, an effective communicator with learners, and is democratic in designing and arranging the learning experiences for learners;
- is competent in the use of different pedagogical strategies including project-based, enquiry-based, and problem-based instructional and learning strategies, to meet the diverse needs and learning styles of learners;
- promotes critical thinking, problem solving, and communication through the learning environment created by the teacher;
- promotes literacy in the English language and at least one Ghanaian language, especially at the early grade level;
- participates in school observational visits, in demonstration school/teaching practice, and a student-supported practicum (internship) experience that encourages continuous reflection by the teacher; the latter can be enhanced through the use of reflective portfolios, diaries and journals;
- exhibits potential attitudes, values and beliefs that are in tune with the code of ethics of the teaching profession;

- integrates informal learning and cultural knowledge in lesson plans to meet the needs of the learners and broaden the curriculum.

This means that the teacher education curriculum should provide opportunities that allow the student teacher⁴ to develop these characteristics. These will include:

- developing disciplinary knowledge in the various core subject areas of the concurrent teacher education curriculum;
- observing and communicating with learners in real classrooms;
- performing critical self-analysis and evaluation of one's assumptions, beliefs and emotions about knowledge, teaching, learner and learning;
- developing professional skills in pedagogy, observation, documentation, analysis and interpretation, drama, craft, story-telling and reflective enquiry;
- developing the capacity for self-directed learning, work collaboratively in groups and spend time to think, reflect, assimilate and articulate new ideas.

The Framework

Figure 1 below shows the shared national vision and policies as the source from which any teacher education programme must be derived. These are the non-negotiables of teacher education. It spells out the need for increased numbers of effective, engaging, inspirational teachers who are fully prepared to teach the Basic or Senior High School curriculum, in particular, English, Mathematics, Science and Information Communication Technology (ICT); and, who are also equipped to develop the languages (Ghanaian and English) of pupils and literacy so they can access the curriculum.

The four integrated pillars or main curriculum and knowledge areas consist of **Subject and Curriculum Knowledge** (which includes subject matter knowledge and curriculum studies), **Literacy Studies in Ghanaian Languages and English**, **Pedagogic Knowledge**, and **Supported Teaching** in School. Literacy Studies in Ghanaian Languages and the English language was the knowledge area of greatest concern for all stakeholders so it is therefore presented as one of the four pillars. These four pillars are the knowledge mix from which potential broad subject areas and courses will be developed. These pillars are intertwined, interactive and interdependent (see Appendix 2 for the expanded version). The second major element of the Curriculum Framework is referred to as the cross-cutting issues. These cut across all the four pillars and are necessary for teachers to ensure learning for all. They consist of Equity and Inclusivity, Core or Transferable Skills, ICT, Assessing Pupils' Learning and Progress, Professional Values and Attitudes, Assessing Student-teachers, and Quality Assurance Strategy. Two other related issues are Specialism Pathways and Continuous Professional Development (CPD) for mentors, CoE leaders, tutors, district directors, etc. The framework provides stakeholders, including employers, with clear expectations of the competencies of graduates from teacher education institutions.

In addition to the above, the curriculum may include co-curriculum activities. These are activities sponsored or approved by the institution but are not part of the academic curriculum although acknowledged to be an essential part of the holistic training of teachers. Co-curriculum activities tend to be organised after school hours and may include games and sports, clubs, debate societies, choral groups, cadet corps, dramatics, cultural groups, and dancing groups. The teacher educator acts as an advisor who encourages all student teachers to participate in co-curriculum activities.

Figure 1. National Teacher Education Curriculum Framework



The following chapters present details of the four pillars and cross-cutting issues. For each, there is a brief statement on the introduction, rationale and curriculum provision for each of the outlined areas for each pillar. For the cross-cutting issues, a brief rationale and curriculum provision is provided.

Appendix 1, Figure 1 presents an expanded Curriculum Framework detailing what each of the pillars entail.

Chapter 3

The four pillars of the Curriculum Framework

Pillar 1: Subject and curriculum knowledge

Secure content knowledge for specialisms and subjects is the key to teaching the school curriculum

Introduction

Subject and curriculum knowledge represent the combination of subject matter or content knowledge and curriculum knowledge into an understanding of how key concepts of the basic academic disciplines (i.e. subject matter) are represented, and organised, and how they are applied in the school curriculum, textbooks and in the design and selection of teaching resources. The kind of teacher and teacher education envisioned in the Curriculum Framework calls on all to perceive teacher education as a holistic enterprise, involving actions of different kinds and from multiple fronts, aimed at the development of the total teacher – a teacher who has developed the appropriate professional values and attitudes, professional knowledge, and professional practice and is therefore knowledgeable and understanding of educational curriculum and frameworks, having a repertoire of skills for teaching, learning and assessment and managing the learning environment, with positive attitudes, habits, and values and the capacity to reflect.

Expectations of subject and curriculum knowledge

According to the National Teachers' Standards, the pre-service teacher education programmes should prepare a teacher who:

1. demonstrates familiarity with the education system and key policies guiding it;
2. has comprehensive knowledge of the official school curriculum including learning outcomes;
3. has secure content knowledge, pedagogical knowledge and pedagogical content knowledge;
4. knows the curriculum for the years appropriate to multi-grade classes;
5. has a good knowledge of how to teach beginning reading and numeracy, and can use at least one Ghanaian language as medium of instruction;
6. understands how children develop and learn in diverse contexts and applies this in their teaching; and
7. takes account of, and respects, learners' cultural, linguistic socio-economic and educational backgrounds in their planning and teaching.

The modules or courses for teaching, learning and assessment in Initial Teacher Education (ITE) institutions should be linked to the above-stated standards in an integrated manner for their attainment. It is important that courses are also structured to integrate elements of the four key Curriculum areas or broad Curriculum pillars of teacher education – Subject and Curriculum Knowledge; Pedagogic Knowledge; Literacy in Ghanaian and English Languages; and Supported School Placement. The Curriculum pillars are not only interconnected but also underpinned by cross-cutting issues (as shown in Figure 1 above), feeding each other towards the total development of the student teacher. This section gives concrete suggestions as to how the curriculum for ITE can be redesigned to focus on development of a knowledgeable and understanding teacher.

Subject and curriculum knowledge

Two key components of the Subject and Curriculum Knowledge pillar of the ITE curriculum are Subject Content Knowledge and Subject Curriculum Knowledge (Figure 1). A major expectation of students in ITE is that they have a secure knowledge of content as well as the curriculum they are going to implement. Some of this knowledge is attained in the students' general education prior to their enrolment into the ITE programme and then built upon in the disciplinary studies courses. For effective curriculum implementation, it is important that the teacher attains a subject knowledge that goes beyond what is contained within the curriculum at the level he/she is specialising. He/she should be able to identify and address gaps in his/ her own subject knowledge through self-study. In addition, he/she should be able to articulate high standards of literacy as well as demonstrate good content knowledge in the core subjects and his/her discipline. What is essential is that student teachers have the subject knowledge required to support children to successful learning outcomes through the School Curriculum.

It is therefore mandatory for ITE programmes to include the study of subjects that provide sufficient disciplinary learning to complement the pedagogical training. The nature of the subject studies however depends on the teacher's level of specialism. The sections that follow provide guidelines on what should go into courses for developing students' understanding of educational foundations, subject content and curriculum knowledge.

In brief, this pillar will address:

- Subject knowledge for teaching content;
- Progress in learning in subjects;
- Common misconceptions in subjects;
- The school curriculum, including learning outcomes;
- The education system and key subject policies guiding it;
- Child development and learning in subjects in diverse contexts / cultures.

Subject content knowledge

Initial Teacher Education (ITE) students are expected to demonstrate a knowledge of subject content that goes beyond the level of the curriculum they will be implementing in their specialisms. The subject content knowledge should encompass the subject's key concepts, substance and structure. A strong content knowledge needs to link to relevant pedagogical knowledge through training. Initial teacher education institutions in Ghana offer the concurrent programme and therefore should ensure their disciplinary studies provide sufficient subject content knowledge for teaching at the basic school level. Therefore, their content knowledge courses should focus on developing a deeper understanding and consolidation of relevant content.

Curriculum provision

Disciplinary studies should comprise the Core Subjects – Literacy (English [L2] & Ghanaian Language [L1] and language proficiency for instruction) (essentially addressed through the Literacy Studies pillar), Mathematics, Science, and ICT. It should also comprise the courses addressing the subjects of the school curriculum. The depth of subject study will vary across different subjects with greater emphasis on: English, mathematics, science and ICT. Helping subjects like Arts, Music, Arts & Craft, Culture, Physical Education, Health and Well-being will be addressed. In addition, institutions specialising at the junior and senior high phases should offer elective courses in Pre-Technical skills; Pre-Vocational skills; and subjects in the students' specialisms. Any institutions offering the consecutive programme must discover whether the underpinning subjects in the prior degree provide sufficient subject content knowledge, and, ensure additional modules or courses are taken either prior to admission or concurrently. That is, it is necessary to allow graduates in the consecutive ITE programmes to complete relevant modules missing from their undergraduate degrees.

Curriculum Studies

The National Teachers' Standards makes curriculum knowledge demands on teachers. The expectation is that prospective teachers have a comprehensive knowledge of the official school curriculum including its learning outcomes, and that they have secure content knowledge and pedagogical content knowledge to implement the curriculum. Teachers are also expected to be able to choose and/or design assessment methods appropriate for instructional decisions. To meet these expectations, it is important that ITE students take courses that will assist them to develop their conceptual understanding of the contents and applications, scope within grade level, and progression across grade levels in the various subjects. Students should have a good understanding of subject-specific pedagogy and assessment strategies. They also need to develop a good understanding of the literacy of the content (i.e. the ability to communicate it using the subject specific 'language register' in the medium of instruction) as well as the psychological factors that underpin the subjects they will be teaching – an understanding of learners' learning and development, and an awareness of learners' potential misconceptions. Students will also be expected to be familiar with the relevant research literature in the teaching and learning areas.

Curriculum provision

Courses in this area should provide opportunities for ITE students to examine the curriculum contents and standards of the core subjects and specialism subjects. Subject curriculum knowledge courses should also provide opportunities for ITE students to develop their pedagogical content knowledge including assessment methods in all the subjects they will be teaching, understand pupils' learning development in the subject(s), create awareness of potential misconceptions in the content, assessment of pupils learning, progress in learning in subjects, child development and learning in diverse contexts, the school curriculum, the education system and subject policies guiding it and expose them to the relevant research literature in their teaching areas.

Assessment of pupils' learning

Assessment cuts across all the pillars. Student teachers need to become assessment literate. This is described under cross-cutting issues (see page 39). Assessment within subjects sits within the context of Subject and Curriculum Studies – in English language, Mathematics, Science, Social Studies and ICT. This includes such things as subject specific assessment strategies, common misconceptions in subjects, and progress in learning in subjects.

Pillar 2: Literacy studies: Ghanaian languages and English

Language is the key to success in education and life. Getting this right is the most critical issue for our children's future and for education in Ghana

Introduction

Language and education are two inseparable concepts because education is disseminated via language, therefore the teachers we train should be very competent in both the L1 and L2 so that they can teach children to speak and read these languages and also use the languages to teach other subjects. The questions we need to address are: (i) how do we train teachers to help children to develop literacy competencies that will make them life-long learners (learning to read and reading to learn in both L1 and L2) and; (ii) how can the (literacy) curriculum be developed to assess the national standards for teacher education to make them competent?

Expectations of student teachers

For the above questions to be addressed, the prospective teacher should have the following competencies as a result of his/ her training:

- communicate in a language that engages learners;
- be fluent in a Ghanaian language and English;
- use the L1 to teach other subjects (as language of instruction) at the early grade level and L2 as language of instruction from primary 4-JHS3 with supported transition in P4 so that pupils can hit the ground running;
- identify children with literacy problems in both Ghanaian language and English, and provide remediation;
- use L1 as springboard for improving L2 learning, especially at the lower primary level;
- teach children to acquire L1 and L2 oral, reading and writing skills and also to help children develop the culture of reading for pleasure and for information;
- understand the specific literacy demands of the subjects they teach and are able to support children in developing the relevant literacy to study each subject effectively;
- use innovative approaches to develop and use appropriate literacy materials in the classroom;
- integrate technology into language teaching in L1 (Ghanaian language) and L2 (English);
- use appropriate and modern approaches to teach and assess the literacy skills of learners (both in L1 and L2);
- conduct (classroom) research in both L1 & L2 teaching and learning.

Rationale

Language cuts across full spectrum of the school curriculum. This implies that language is crucial in teacher training programmes. Whatever the teacher does in the classroom: talking, explaining content, asking questions to find out the level of students' understanding, illustrating issues, translating content for easy understanding, issuing instructions to learners, this all hinges on language. The role of language as a medium of instruction and tool of communication is of great importance and cannot be overestimated. It is a fundamental skill required at all levels of education. It is an every-century skill that must be given the necessary attention in teacher training. This makes the teacher's language proficiency and communication skills a critical factor in school besides content and pedagogical knowledge and many others.

In brief this pillar will address:

- language proficiency and communication;
- communicate fluently engage learners in Ghanaian language/ English;
- use the L1 to teach other subjects KG-P3 and L2 as language of instruction from P4-JHS 3;
- assist transition from L1 as medium of instruction to the use of L2 from P4 onwards;
- identify and support children with literacy problems;
- Early grade literacy.

Literacy studies

The course to be pursued by student teachers should focus on their proficiency level in the L1 (Ghanaian language) and L2 (English). It should make the would-be language teacher proficient in the language they will teach and use as the medium of instruction. In this Curriculum Framework, this component is divided into two sub-groups: Language (Ghanaian language and English) Proficiency and Communication and early grade Literacy (tied to the Ghana Reading Action Plan – GRAP). This has been separated from Language Proficiency and Communication in order to pay sufficient attention to it in pre-service training.

Both parts require college-based study integrated with an application in a range of well supported and extended real school experiences: observing, planning, teaching and assessing their impact on pupils' literacy and learning progress.

Language proficiency and communication component (L1/L2)

This sub-component of the framework should be made up of sub-components or essential themes like: language proficiency and communication skills; meta-linguistic awareness; the skills of speaking, listening, reading and writing in different contexts and content literacy; sociolinguistic competence; grammatical competence/language structure, and literature in language (L1/L2). Others should include: oral literature; effective strategies for teaching reading and developing readers and writers; assessment in language teaching; technology in language teaching; teaching in a multilingual classroom; language research and approaches/methods in language teaching. Additionally, bilingualism and neuroscience and language acquisition/learning should be considered in this subcomponent. Alongside this, strategies for teaching English as a second language can support L2 teaching.

Rationale for Language proficiency and communication

The rationale for the language proficiency and communication component (Ghanaian language and English) in ITE is intended to:

- develop in student teachers the skill to use Ghanaian language as a medium of instruction at the KG–P3 and as subject of study from P1–JHS 3, and English as medium of instruction and subject of study from Primary 4 to JHS 3 and SHS;
- equip student teachers with the skills to use Ghanaian language as the basis for improving literacy in English (L2) – the ability to teach reading, writing, speaking and listening;
- increase the skill of student teachers to teach and use language (Ghanaian language and English) as a subject of study to learners from Primary four to JHS 3;
- help students appreciate their culture and project the image of their ethnic group and that of other cultures;
- increase the skills of pre-service teachers in literacy to develop effective and appropriate Language (Ghanaian language and English) teaching skills;
- equip student teachers with skills to construct effective assessment in the language (Ghanaian language and English) to diagnose students’ language learning problems and their achievement in the language;
- ensure student teachers recognise the specific literacy demands of the subjects they teach;
- assist student teachers with the ability to conduct research in the Language (Ghanaian language and English) to improve Ghanaian language and English learning and teaching in schools;
- equip student teachers with the skills to be able implement the language policy of education in their schools and Districts;
- help student teachers develop appropriate language (Ghanaian language and English) teaching/ learning resources for their learners.

This component of the Curriculum Framework is linked to the following National Standards for Teacher Education – specifically that a student:

- has comprehensive knowledge of the official school curriculum including learning outcomes (in literacy studies);
- has secure content knowledge, pedagogical knowledge and pedagogical content knowledge (in literacy studies);
- (at KG–P3 level), knows the curriculum for the years appropriate to multi-grade classes; has a good knowledge of how to teach beginning reading and (numeracy), and speaking, listening, reading, and writing of at least one Ghanaian language for instruction;
- carries out small-scale action research (in literacy studies) to improve practice.

Curriculum provision

This component of the literacy curriculum will include both theory and practice. The theoretical aspect of the component, which is the coursework, should include courses like bilingual education in Ghana, preparation and use of teaching/learning materials, assessment in language learning and teaching, language teaching skills, using Ghanaian language and English as media of instruction, Language structure (Ghanaian language and English), literature (Ghanaian language and English), Phonetics and Phonology (Ghanaian language and English). Each of the theory courses should have in-built, field-based units of study leading to projects and assignments focusing on the application of what has been learned in a real classroom situation.

The practical aspect deals with the practical application of what is done theoretically in a real classroom context. The aim of this aspect is to provide a hands-on experience in a real context. Student teachers need to be given opportunities to be with children and apply what has been taught theoretically to assess and evaluate their impact on pupils' progress and learning. The practical aspect can be group or individual field-based and hands-on activities. Specific practicum courses should be designed for student teachers to apply the theory and skills acquired in real classroom situations. Such practical activities should include: observing teacher trainers teach language lessons in real demonstration school situations, and writing reports or discussing what the lessons demonstrated; teaching lessons using Ghanaian language and English; preparing teaching/ learning materials and using them to teach a lesson; writing effective test items for a given class in Ghanaian language and English, and trying it out in the classroom. Technology should play a role in this by recording demonstration lessons by both teacher trainers and student teachers. The practical aspect should also involve students' presentations, report writing on practical activities, etc.

Early grade literacy (KG-P3)

Rationale

Reading is the foundation of learning. Ensuring that children can read in early grades determines their future educational success. Children in developing countries including Ghana are struggling to read basic words. Alongside this, children must also develop their writing, speaking, listening and comprehension skills. One person who holds the key to improving children's literacy is the teacher but improving literacy among early graders does not come readily to teachers, especially the new teacher. This implies that student teachers need to be equipped with skills that will help them to improve literacy among early graders. The inclusion of early grade literacy in the teacher training curriculum is to:

- equip student teachers, especially those specialising in early grade teaching with the skill to assist early graders understand printed information; read and write, decode and encode text in the L1 and L2;
- develop in student teachers the skill to develop children's comprehension and the culture of reading a range of texts independently, for pleasure and instruction;
- equip student teachers with phonic skills to enable them to teach early graders phonic knowledge and how to apply this in their reading and writing;
- understand the phonics of L1 and L2 and to know the differences, so as to assist learners overcome problems they may encounter during the dual language learning process;
- engage parents in improving and encouraging their children's literacy.

The Early Grade Literacy component is tied to the following National Teachers' Standards:

- (the new teacher) employs a variety of instructional strategies that encourage learner participation and critical thinking (in Literacy studies);
- (the new teacher) produces and uses a variety of (language) teaching and learning resources that enhance learning, including ICT.

Curriculum provision

Theoretical aspect

The theoretical aspect of this subcomponent should focus on improving literacy among early graders i.e. learners from KG1 to Primary 3. The essential themes or subcomponent of the Early Grade Literacy include: Content of Early Grade Literacy (Phonemic Awareness (PA), Phonics (P), Fluency (F), Vocabulary (V), and Text Comprehension (TC), Oral language (OL), Spelling (S) and Syntax and written Expression (WE)). In addition to these, there should be courses on models and methods of teaching Early Grade literacy, and preparation and use of language teaching learning materials/resource to enhance literacy teaching in the early grade level and assessment and intervention in early grade literacy.

Practical aspect

The practical component of early grade literacy should include the application of theory into practice. This should involve teacher trainers practising the theory of teaching literacy skills in the classroom for students to emulate. Student teachers should be given the opportunity to teach in a real classroom situation based on what they have learned theoretically.

Students should have opportunity to work with struggling children in terms of literacy and provide the appropriate intervention. In addition, students should be given the chance to produce reading materials for appropriate grades in Ghanaian language and English.

Pillar 3: Pedagogic knowledge

Knowledge of instructional and assessment strategies is key to supporting the learning and progress of all pupils.

Introduction

Pedagogic knowledge refers to the specialised cognitive knowledge of teachers for creating effective teaching and learning environments for all learners Guerriero, S. (2017). It is therefore composed of general pedagogical knowledge and pedagogical content knowledge. Pedagogy is described as the instructional techniques and strategies which enable learning to take place. It refers to the interactive process between teacher and learner, and it is also applied to include the provision of some aspects of the learning environment (Siraj-Blatchford et al., 2002:10). The term pedagogic knowledge is used throughout the Framework as one of the pillars of knowledge. Pedagogic knowledge includes all the required cognitive/ pedagogical knowledge for creating effective teaching and learning environments. It is therefore composed of general pedagogical knowledge and pedagogical content knowledge.

Pedagogical knowledge is the broad principles and strategies of classroom management and organisations that go beyond subject matter. Its purpose is to enable student teachers to understand school subjects through linkages among learners, context, subject discipline and pedagogical approach. It draws together teachers' knowledge of the theories of learning and general principles of instruction, their understanding of the various philosophies of education and how they can support effective teaching, general knowledge about learners, and knowledge of the principles and techniques of classroom management (Grossman and Richert, 1988). Teachers therefore need to draw on a range of knowledge and weave it into coherent understanding and skills in order to become competent and to connect content, and teaching and assessment in the classroom. PK does not only depend on the subject matter discipline and methodology used but must take into account the learner and their background and context.

Pedagogic knowledge is most closely aligned to the professional practice domain of the National Teachers' Standards. However, it also reflects how the three domains and aspects of the National Teachers' Standards intersect bringing together what teachers should value, know and be able to do, so there is an overlap to Professional Knowledge and also Professional Values (see pages 17 and 18 of National Teachers' Standards). Cross-cutting issues are introduced through Pedagogic knowledge.

In brief this pillar addresses:

- instructional strategies;
- introduction to cross-cutting issues: inclusivity, professional values etc.;
- assessment to support differentiation and learning, core skills
- barriers to learning
- effective mechanisms for planning
- behaviour management strategies
- preparation for supported teaching in school
- implications of learner backgrounds
- contemporary studies

General pedagogical knowledge

Rationale

General Pedagogical Knowledge refers to the principles and strategies of classroom management and organisation, teaching methods, assessment, learning processes and learner characteristics that are cross-curriculum. The rationale for pedagogical study is to help students understand how to teach and assess the subjects that schools offer and their pedagogical approaches in the context of the school and the learner. Pedagogical study makes teachers see the linkages among learner, context, subject discipline and the pedagogical approach. Courses in General Pedagogical Knowledge (PK) are focused on the learner and his/her context. Teachers' PK is the 'how' of teaching and it includes knowledge of different theories about learning, learning styles, learners' context, planning and management, and evaluation. General Pedagogical Knowledge is acquired through education coursework and developed and embedded through supported teaching in school (personal experiences). The links between subject and curriculum knowledge and Pedagogical Knowledge need to be made explicit to students.

Curriculum provision

Theoretical Aspect

Courses in Pedagogy: these involve courses in pedagogy which include: knowledge as construction through experiences; nature of disciplines; critical understanding of school curriculum, and pedagogy as the integration of knowledge about the learner, the discipline and the context. This would include separate but interrelated courses on: knowledge of classroom management; knowledge of learning processes; knowledge of teaching methods; knowledge of classroom assessment; structure; adaptivity; knowledge of individual student characteristics and behaviour management. A pedagogy course should include the following: i) skills in and knowledge of class management and ii) skills in and knowledge of managing students' learning. The issues of student teachers' engagement with learners' assessment needs to be integrated with courses in pedagogical studies. It should include a rigorous critical reading of perspectives that regard learner assessment. The training should broaden the scope of assessment beyond achievement testing to cover a child's overall development, action research and reflective practice strategies for supported teaching in school.

Practical Aspect

Practical courses should be designed on:

- themes of classroom management;
- teaching/learning materials development;
- action research and;
- supported teaching in Schools.

Student teachers learn to integrate ideas, experiences and professional skills through hands-on experience of developing curriculum and learning materials, designing appropriate activities for children of different age groups and formulating questions to facilitate learning. Also, student teachers need to learn to prompt pupils to ask questions and to learn to collate these to further the processes of learning. For instance, for in a language pedagogy course, student teachers would need to:

- engage with projects involving listening to and developing children's reading;
- observe and analyse reading difficulties;
- observe and identify mismatches between school language and home language;
- analyse textbooks and other materials used in different subjects in terms of presentation, style and language used.

Practical activities should include:

- hands-on learning;
- planning lessons to accommodate learners' interests and adopting creative ways for teaching the basic school curriculum, drawing upon low or no cost teaching and learning resources;
- collection and presentation of specimens of natural resources and indigenous knowledge available in the area using reports, journals, magazines, newspapers, documents, atlas, map drawing and reading in the classroom.

After this exercise, student teachers can be engaged in other activities such as:

- reflective discussion;
- learning how-to-do observations, recording and analysing them.

Supported teaching is one of the ways to ensure that student teachers will have the opportunity to be engaged in school contexts to interact with learners. This will create the opportunity for students to learn how to design projects that are level specific.

Pedagogical content knowledge

Rationale

Pedagogical Content Knowledge is included in subject and curriculum knowledge. The study of subject specific pedagogy, also referred to as Pedagogical Content Knowledge, will equip student teachers to understand school subjects and the pedagogical approaches in the context of the school and the learner. It will help the teacher to establish the links between, and among, learner, context, subject discipline and the pedagogical approach. Teachers' Pedagogical Content Knowledge (PCK) is a key concept in teaching. PCK is the type of knowledge that is unique to teachers and relates to the manner in which teachers relate what they know about teaching (general pedagogical knowledge) to what they know about what they teach (subject matter knowledge). It refers to teachers' knowledge about how to combine pedagogy and content effectively. Teachers' knowledge about the pedagogy of subjects, such as language, sciences, mathematics and social studies, equips them with the skills needed to manage the teaching and learning process in a manner that they will be able to draw upon epistemological insights while teaching any of the key disciplines.

PCK is a form of practical knowledge that entails, among other things: (a) knowledge of how to structure and represent academic content for direct teaching to students; (b) knowledge of the common conceptions, misconceptions, and difficulties that students encounter when learning particular content; and (c) knowledge of the specific teaching strategies that can be used to address students' learning needs in particular classroom circumstances.

The transformation of subject matter for teaching occurs as the teacher critically reflects on and interprets the subject matter; finds multiple ways to represent the information as analogies, metaphors, examples, problems, demonstrations, and classroom activities; adapts the material to students' abilities, gender, prior knowledge, and preconceptions (those pre- instructional informal, or non-traditional ideas students bring to the learning setting); and finally tailors the material to those specific students to whom the information will be taught.

In addition to PCK, technology in pedagogy is important. Technological Pedagogical Content Knowledge (TPCK also called TPACK) entails the existence, components and capabilities of various technologies that can be and are used in the teaching and learning process. Student teachers need to integrate technology into their teaching. This knowledge will build student teachers capacity about how teaching and learning might change depending on the type of technology they employ. Teachers' TPCK will help them understand: the range of tools that exist for doing specific tasks during the teaching learning process; choose tools based on their fitness; find strategies for using the tools; discover knowledge about pedagogical strategies and the ability to apply the strategies for the use of information technologies.

Curriculum provision

Theoretical Aspect

Courses in Pedagogy, Content and Technology: knowledge as construction through experiences, nature of disciplines, critical understanding of school curriculum; and pedagogy as the integration of knowledge about the learner, the discipline and the context. This would include building student teachers' capacity in PCK and TPCK/TPAC in the different subject areas such as literacy, mathematics, and integrated science and citizenship education/social studies at early grade, upper primary, and junior high school/ senior high school levels of education. In particular, student teachers TPCK requires an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content. Subject specialist student teachers will need to engage with deeper epistemological questions of the disciplines they specialise in. Specific tasks related to how learners engage with school subject-content misconceptions need to be addressed through a rigorous study of disciplinary knowledge, besides a specific focus on content area literacy and tasks of writing observations

and analysis for enhancing conceptual understanding. Pedagogy courses will need to be designed to address specific levels of education – early grade (KG to P3), upper primary and secondary.

Practical Aspects

Practical aspects of the PCK should be designed in a manner to facilitate the transfer of knowledge from PK into specific subjects. Also, practical aspects should include the best ways to use technology to teach with the understanding of technological pedagogical content knowledge as well as technological material development/usage in teaching content. Practical activities could be based on the integration of technological content knowledge, general pedagogical knowledge and pedagogical content knowledge in the classroom. These could be followed by reflective discussion, learning how to make observations, record them and analyse them. Such an approach would help forge links between the learner and his/ her context, disciplinary content and the technological pedagogical content knowledge used. A key component of this entails students observing their tutors teach specific subjects in the placement schools, engaging in hands-on learning activities or watching video clips to appreciate how the theory is can be applied in practice.

Education studies

Rationale

Education studies cover aspects of the philosophy of education, history of education, educational psychology, and sociology of education, specifically how they are relevant to, and can support the student in becoming a more effective teacher. It includes the aims, forms, methods and the process of educating; study of learner development and learning, affect, motivation and their applications in instructional design, classroom management, assessment and students' learning in the teaching processes. The purpose of Education Studies is to prepare future teachers who are critical thinkers, well informed about theory and practice, and who possess the knowledge and skills that will enable them to be change agents in economically, socially, culturally, and linguistically diverse communities. The National Teachers' Standards therefore requires teachers to demonstrate familiarity with the education system and key policies guiding it; to understand how children develop and learn in diverse contexts; and respect learners' cultural, linguistic socio-economic and educational backgrounds in their planning and teaching.

Curriculum provision

Courses in this area of the programme should provide: opportunities for student teachers to study learner development and learning; aims, forms, methods and the process of educating; assessing student learning; education and cultural values; school and society, teacher/learner in society, inclusivity and equity; and cross-cutting issues. Thus, the courses should prepare them as teacher leaders.

Pillar 4: Supported teaching in school

Extended, guided and assessed teaching which enables student teachers to apply their knowledge and the key to improving their teaching.

Introduction

The Supported Teaching in School placements are designed to enable student teachers to develop and apply their professional values and attitudes, knowledge and practice so they are competent to teach by the end of their training, and through this, be able to demonstrate they meet the Teachers' Standards in a manner appropriate to a beginning teacher.

The structure of Supported Teaching in School placements, needs to reflect the guidance to the National Teachers' Standards requiring 'School practicum components must provide extended guided periods of teaching'. In addition, the placements need to be designed to reflect how the three domains of the Teachers' Standards intersect with one another bringing together what teachers should know, value and be able to do by the end of training.

The attainment of the Teachers' Standards through Supported Teaching in School placements depends among others, on:

- The availability of well-equipped schools;
- Well prepared mentors;
- Effective links between college or university and the schools.

Ensuring these are appropriately available will raise policy issues and have implications for the development or further development of demonstration schools

All students are expected to provide all learners, irrespective of their social, cultural, linguistic and ethnic background, with the opportunity to acquire knowledge, skills, values and attitudes that would enable them to progress through school and contribute meaningfully to their society.

Expectations from Student teachers

Student teachers who go through the supported teaching are expected to:

- impact on the progress and learning of pupils;
- exhibit sound content, pedagogical and curricula knowledge to be able to teach the school curriculum;
- draw on the social and cultural contexts of the learner to scaffold their learning to make teaching relevant. take decisions in the classroom that are influenced by sound philosophies of teaching and learning;
- have appropriate values and attitudes towards teaching and learning;

By the end of the final assessed and supported placement, students will be able to: teach, assess, motivate, and extend the learning of all children, taking account of and respecting their backgrounds and regardless of age, aptitude, and ability.

These expectations need to be met in order for the student to demonstrate they have met the National Teachers' Standards. Students will build towards meeting the Teachers' Standards through extended Supported Teaching in years one, two and three of their training.

A partnership of the College with local schools, Ghana Education Service (GES) and community is very important for the development and preparation of student teachers and ensuring they achieve the expectations and meet the Teachers' Standards.

In brief, this pillar will address:

- student teachers' application of their learning in a range of supported and extended school experiences;
- observing, planning, teaching and assessing their impact on pupils' learning progress and wellbeing;
- assessment through a portfolio of evidence of quality of teaching against the TS, pillars and CCI.

Initial Teacher Education Institutions Requirements for School partnership and reflective practice

To ensure effective school placements, training institutions should:

- ensure positive relationships with schools of practice, select mentors carefully and ensure they are equipped with the knowledge and skills that will enable them to support the students to achieve the expectations outlined;
- provide CPD for the mentors, lead mentors, link tutors and 'significant' stakeholders such as district education officers regarding roles and responsibilities, new developments etc.;
- ensure that there are sufficient demonstration schools which are equipped to support students and for practical lessons;
- provide adequate Teaching and Learning Materials (TLMs) in the practice schools and expose teacher students to their efficient use;
- support effective assessment of the development of student teacher's teaching against the TS, through their portfolios and according to the stage of training;
- orientate students on their roles and responsibilities within the schools and communities;
- draw up programmes for first and second year student teachers to spend their vacation for observations in the Basic Schools. This should include detailed observation guidelines and a report submission.

Mechanism to support teaching in schools

Support for students

Mentors/Co-operating supervisors should:

knowledge, skills, values and attitudes for the students to observe and emulate;

- be fair and accurate in their assessment of student teachers;
- hold pre-and post-observation discussion of lessons. The discussion should reflect the expectations and the progress and learning of pupils;
- use a variety of approaches – mentors/co-operating supervisors should teach for students to observe, team teach with students (mentor/co-operating supervisor and the student) and the student should teach for the mentor/co-operating supervisor to also observe;
- be encouraged to use multimedia to capture teaching transactions for the purpose of training. This should include teaching transactions from various school contexts (rural/urban, deprived and non-deprived).

Link tutors/supervisors from training institutions

There should be regular collegial interaction with mentors to support mentees by the link tutors/supervisors from training institutions to provide them with the support they need.

District Education Offices

The GES Offices should support the activities of the mentors/cooperate supervisors and the lead mentors/headteachers in order to ensure that they are always at post to offer the needed support to the students.

GES Offices should collaborate with training institutions to train circuit supervisors so that they can support mentors and mentees in improved teaching practices (in the case of basic schools).

Community/opinion leaders (SMCs, assembly members, etc.)

The community should ensure the safety of the students to enable them to go through their supported teaching in a school programme successfully.

Assessment and evaluation of Students

Modern assessment practices that support the assessment of practical skills, such as portfolio assessment and the use of multimedia for assessing students' development of skills and competencies and their impact on pupils' learning and progress, should be adopted. This should include the assessment of the quality of students' teaching and assessment practices to ensure that students have acquired the knowledge and skills required by the Teachers' Standards.

Evidence that a teacher student can meet all of the Standards must be in the form of a professional portfolio organised according to the three domains of the Standards. Evidence from in-school learning will be from lesson plans, study notes, resources, assessment records, learner exercise books, photographs, lesson evaluations from tutors and mentors, testimonials, minutes of meetings and any notes from CPD courses, evidence collected by the teacher student or teacher over time. As a critically reflective practitioner, the professional portfolio provides the starting point for the continued development of the teacher in their induction year and subsequent years.

Guidance to the National Teachers' Standards

Mentoring institutions should partner the Colleges of Education to carry out rigorous quality assurance: monitoring and evaluation, and review of the impact of the supported placement in the school's programme. And through this identify and address areas for development

Curriculum provision

The mode of delivery of the Supported Teaching in School placements should be essentially practically dominated but draw directly on and be supported through each of: subject and curriculum knowledge; pedagogical knowledge and literacy studies. At the post-teaching conference interaction, the theoretical basis for the actions need to be pointed out. The supported school placement should preferably be comprised of 36 weeks of teaching, observation, case studies and the development and use of resources, including open educational resources in the development and delivery of lesson plans.

Classroom based (action) research

Action research is a method of enquiry through which teachers learn to:

- reflect critically on their own practice;
- observe students and their school surroundings more closely;
- become more conscious of their own beliefs and develop the ability to challenge them;
- relate what they are curious about to research written by others about similar or related topics;
- professionally share their educational ideas with other teachers;
- transform selves, others and schools into more inclusive environment (Bilash, 2009), and
- develop their ability to teach effectively and support the learning of the pupils they work with.

Action research is expected to be carried out simultaneously with the teaching practice to enable the students to acquire the research skills to improve their practice by identification of problems in the classroom/school setting and to carry out action research to provide an understanding of the problem and possible solutions. Action research typically involves a four-step cycle of planning, acting, observing and reflecting (Bilash, 2009; McNiff, 1993).

In undertaking action research, the student needs to be prepared to use a range of research techniques drawing from both qualitative and quantitative approaches as appropriate to the particular problem or issue they want to investigate to

improve their practice. This would include: inductive analysis if exploring patterns of behaviour in the classroom and simple experimental research when considering the effectiveness of two different methods of teaching a particular concept. The intention is that students adopt a reflective, analytical and open-minded approach to their work and draw evidence-based conclusions to improve their practice and develop the teaching, assessment and learning environments they create.

Students' preparation to use action research, and indeed other research methods, should be facilitated through research methods training in subject and curriculum knowledge and pedagogical knowledge studies.

Thus, classroom-based studies on pedagogy – teaching and assessment, class management etc. – would be emphasised. Project supervisors are therefore expected to visit/communicate with the mentees to provide them with the support they need to develop the skill of researching their practice.

Establishing demonstration/partner schools

Demonstration schools provide a structural space within the teacher education institution to allow student teachers to have a hands-on engagement with learners, experience with educational resources, observation of teaching transactions, and

an opportunity for self-reflection. Every teacher education institution should have a demonstration school which should be structured to:

- act as a platform for student teachers to develop a repertoire of professional skills such as creative use of language, teaching lessons, and providing opportunities to understand learner's thinking;
- provide a structural space for student teachers to undertake self-directed activities such as analysis of school curricula, and textbooks to assess their suitability for children at different levels;
- serve as a platform for undertaking action research projects that aim to broaden students understanding of learners and prompt them to enhance their knowledge of subject matter;
- engage with student teachers and practising teachers on the issues of developing materials and planning for teaching;
- provide a space for the student teacher to engage in their own personal and psychological development through engagement with their own aspirations in becoming a teacher, their own identity, their philosophy of teaching, and their view on gender and inclusivity

Chapter 4

Cross-Cutting Issues

These are issues that intertwine with all the four pillars and are necessary for providing teacher students with the critical skills required to ensure learning for all.

Introduction

Teacher education systems face challenges in adequately preparing teachers for the current global realities brought about by the rapid pace of economic, social, technological, and environmental challenges. There is a debate on how these challenges can be overcome. Traditional approaches to teaching and learning that put subject content in 'silos' are being challenged by 'modern' approaches that enable the student teachers to create a more holistic and integrative environment, one that aids them to become more productive.

A number of cross-cutting issues have been identified to provide a holistic approach to teacher education and development. These are: equity and inclusivity, professional attitudes and values, core or transversal skills, assessment strategies, action research and reflection. These issues underpin the four pillars – subject and curriculum knowledge, literacy studies in Ghanaian and English languages, pedagogical knowledge, and supported teaching. They are introduced through Pedagogical Knowledge and support the development of understanding in the other pillars where they must be explicitly addressed.

These issues are cross-cutting because they cannot be taught or learned in isolation but must be integrated with each of the four pillars in the teacher education curriculum. A lack of attention to these cross-cutting issues can seriously limit a more holistic understanding of the different components of the teacher education curriculum.

The teacher education curriculum will need to give much emphasis to these cross-cutting issues. For example, student teachers will be expected to learn how to integrate core and transferable skills in teaching the content of the different subjects, in pedagogical approaches used in the classroom and during supported student practicum. The cross-cutting issues in this framework are:

- professional values and attitudes;
- equity and inclusivity;
- assessment strategies;
- core and transferable skills;
- ICT;
- other issues – specialism, assessing student teachers, CPD and quality assurance strategy.

Professional values and attitudes

Professional values and attitudes relate to the development of professional identity, social norms, ethics and practices of the school and the teaching profession.

Introduction

Professional attitudes and values are at the core of the National Teachers' Standards and they help to shape the identity of a professional teacher. They underpin professional knowledge and professional practice in the Standards and the four pillars in the Curriculum Framework. The development of professional attitudes and values and the demonstration of professional behaviour are key factors in the practice of teaching. Professional attitude is defined as a predisposition, feeling, emotion, or thought that upholds the ideals of a profession and serves as the basis for professional behaviour (Hammer, 2000).

Professional values on the other hand are internalised beliefs or generalised principles by which professional teachers judge ideas, actions and events. Professional values and attitudes relate to the development of professional identity, social norms, ethics and practices of the school and the teaching profession.

Expectations

Students have to demonstrate a familiarity with the Ghanaian educational system and key policies guiding it. In addition, they should understand and be guided by the legal and ethical teacher codes of conduct of the Ghana Education Service (GES). The teacher will be expected to:

- critically and collectively reflect to improve teaching and learning;
- improve their personal and professional development through life-long learning and Continuous Professional Development;
- demonstrate effective growing leadership qualities in the classroom and wider school;
- be guided by legal and ethical teacher codes of conduct in his/her development as a professional teacher;
- engage positively with colleagues, learners, parents, School Management Committees, Parent-Teacher Associations and the wider public as part of a community of practice;
- develop a positive teacher identity and act as a good role model for students.
- See their roles as potential agents of change in the school, community and country;
- demonstrate familiarity with the education system and key policies guiding it;
- understand how children develop and learn in diverse contexts and apply these in their teaching;
- take into account, and respect learners' cultural, linguistic, socio-economic and educational backgrounds in their planning and teaching;
- create a safe, encouraging learning environment;
- pay attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.

Values related to promoting harmony, social skills, community spirit, respect for differences of learners and love for the environment, should be integrated into cross-Curriculum learning goals at the Initial Teacher Education stage to help students develop personal and social skills that are necessary for the teaching profession. These should be tied into the reflections that they are encouraged to do on their learning and practicum.

To attract trust and respect from the public, as is accorded other professions such as pharmacy, teachers need to develop appropriate professional attitudes, values and behaviour. These may include:

- accountability – takes responsibility for actions, and accountable to parents, society and the profession;
- excellence – going beyond expectations and engagement in life-long learning;
- diversity – fair treatment of all individuals regardless of demographic characteristics;
- honour and integrity – adhering to personal and professional codes, showing fairness, truthfulness, trustworthiness and meeting commitments, e.g. going to class well-prepared, punctual;

- respect for others – all students, tutors, parents, and colleagues;
- open-mindedness – open to new ideas and ready to seek out new challenges.

Teachers' attitudes and values can have either positive or negative effects on their students. In this vein, the induction courses of teacher training institutions should focus on the ethics of the profession and promote a culture of diversity inside and outside the school. Initial teachers should also be introduced to values of peace, democracy, equality, justice, liberty and social cohesion through the various subject areas and the pedagogical methods they study.

The GES has comprehensive Life Skills-based Health Education and Guidance and Counselling Manuals for teachers. Initial teachers should be familiar with the contents and inherent values and attitudes of these and any other manuals that seek to complement the basic and second-cycle school Curriculum.

In addition, most schools, Colleges of Education and universities have written codes of conduct or ethics, as well as Curriculum outcomes, that may contain language about professional attitudes, values and behaviours. This must be used to develop student teachers' values.

Curriculum provision

Theoretical Aspect

Globally, countries have incorporated values education into their educational systems. Values lay emphasis on qualities which help one to make informed choices and are sanctioned by a given profession, and/or society, based on accepted norms.

Teaching is a profession and there are professional norms that govern the behaviour and practices of teachers in every jurisdiction. Professional values may include different types of values, namely, moral, religious (spiritual), social, technical (subject-based), Values can be taught through varied approaches. Values education can be a learning area within a curriculum, as in the Philippines, or a broad area such as personal, social and moral education as in the UK educational system. Subjects like social studies, environmental and health studies and citizenship education in the basic education curriculum carry a strong values emphasis and can be important areas for values learning.

Practical Aspect

Students teachers should forge positive professional relationships with their peers and learn why and how to collaborate with parents and community members in the best interest of learners. The importance of belonging to a professional association and the roles such associations play in professional development of the teacher should form part of education studies.

The promotion of gender equality, inclusion and the care of children should form an integral part of the various courses and should provide opportunities for values experiences.

Student teachers can be encouraged to observe Parent/Teacher Association meetings and discuss their findings as part of their course. In addition, as part of values learning, they should be made to observe School Management Committee (SMC) meetings and critique the role envisaged for the committee, as against the actual roles and responsibilities and how heads and teachers support the SMC to function.

Teaching of Professional Values and Attitudes is a cross-cutting issue and should underpin all the courses under the four pillars of the Curriculum Framework. Student teachers should be assigned the responsibility of identifying the values in the different subject areas in the school curriculum.

Equity and inclusivity

Teacher education institutions will need to reframe their programmes and courses to include the perspective, concept and strategies of inclusive education as a central theme.

Rationale

There are different forms of exclusion prevalent in the school system as a result of the inadequate preparation of teachers to address diversity in the classroom. One form of exclusion is the inability of the school system to meet the needs of learners with special education needs such as the physically challenged, the gifted and talented. Another group of excluded children are those who come from socially and economically disadvantaged backgrounds such as street children, nomadic children, and children from deprived communities.

The SDG Goal 4 which Ghana has adopted calls for ensuring inclusive and equitable quality education and the provision of life-long learning opportunities for all. Also, Ghana's Inclusive Education Policy (GES 2015) emphasises that the country's inclusive education approach is to 'create an education system that is responsive to learner diversity and to ensure that all learners have the best possible opportunities to learn'. This vision for education has been at the heart of the development of this Framework. To realise this, teacher education institutions will need to reframe their programmes and courses to include the perspective, concept and strategies of inclusive education as a central theme. But this can only happen if all teachers have a sound understanding of how to recognise and address barriers to learning, and how to plan for diversity. Student teachers will need to be trained to overcome their biases, experience-related beliefs and develop professional capacities to focus on the diverse characteristics of the individual learner(s) and provide opportunities that will ensure equity and inclusivity. A critical focus on this will be necessary if the Constitutional goal of ensuring that every Ghanaian is afforded equitable opportunity in terms of access to high quality education is to be achieved.

How to achieve equity and inclusivity in Classrooms

Student teachers need the skills to handle the diversity in the classrooms they will be teaching. So, as part of their preparation, student teachers must learn how to identify the barriers to learning and address them.

Apart from issues related to SEN and disadvantaged groups, an area of concern is gender. Apart from primary school level where gender parity is achieved among pupils, males continue to dominate at all other levels of education, including tertiary education. Student teachers need to be prepared to sensitively bring and include girls in the classroom transaction. They need therefore to be familiar with the philosophy of inclusive education as well as the gender policy of the Ghana Education Service (GES).

Teachers require a better understanding of the classrooms' various cultural and socio-linguistic diversities that exist in order to ensure equity and inclusivity to support the interactions and the appreciation of diversity in perspectives in the classroom. Teachers need to be aware and understand the issues of the rights of the child and how it shapes the entire instructional process, ensuring equity and inclusivity are linked directly to issues of the right of the child. The teacher training curriculum and its delivery needs to reflect and model the principles and practices of equity and inclusivity.

Expectations for teachers

They should demonstrate the following during teaching practice:

- planning, teaching and assessment which explicitly takes account of the social, linguistic, ability and cultural context and diversity of their learners;
- differentiation according to the needs of vulnerable groups including: girls and those with Special Educational Needs;
- use of Ghanaian and English languages to support children's learning across subjects and literacy;
- use culturally relevant approaches and strategies in teaching and learning.

Curriculum provision

Theory Aspect

Student teachers should learn equity and inclusivity through: (a) Pedagogical Knowledge and Skills: that is, general pedagogical knowledge, pedagogical content knowledge, and technological pedagogical and content knowledge, (b) Subject Curriculum Knowledge, (c) Knowledge of Special Education Needs of pupils, gender, etc. and (c) Literacy & Supported Teaching in school.

Students' general pedagogical knowledge and PCK should make them aware of the issues of equity and inclusivity that relate to issues of disability as well as the social, cultural and linguistic diversity in Ghana. Students will demonstrate the evidence of their understanding of issues of equity and inclusivity during teaching practice and internship by:

- applying their pedagogical skill to address the social and cultural diversity of their learners;
- apply culturally relevant approaches or strategies in teaching and learning;
- apply assessment strategies that take into consideration the cultural, social and linguistic diversity of the learners.

Student teachers should therefore be equipped with the strategies for identifying and addressing learning barriers posed by disability and the social, cultural and linguistic background of pupils through such curriculum courses as:

- Special Education Needs (SEN);
- learners' diversity and mix ability;
- gender, the vulnerable and the excluded;
- assessment strategies drawing on equity and inclusivity.

Practical Aspect

Teachers' familiarity with contemporary issues in the Ghanaian society: identity, gender, equity, poverty and diversity would provide a social, cultural and political context for education and its practice. Each course being offered should have an in-built, field-based unit of study. It should integrate the following issues:

- Special Education Needs (SEN);
- social, cultural and linguistic diversity in the classroom;
- use of TLM /resources/practices that are relevant to addressing the social, cultural and linguistic diversity of pupils that pose as barrier to learning;
- use of relevant and appropriate indigenous knowledge (cultures of knowing) e.g. students' everyday logic and representation and various perspectives must be embraced in the teaching-learning process.

General strategies or processes

Student teachers should be equipped with appropriate teaching-learning strategies that support inclusion and equity during the teaching-learning process. Students should demonstrate during supported teaching practice, the use of varied teaching strategies including the following; co-operative learning; group work, think-pair-share, individualized teaching, differentiated teaching, assessment as, for and of learning, role-play, problem-solving, and discussion.

Implications for tutors/lecturers and leaders

The issues of equity and inclusivity have implications for tutors/lecturers and leaders in teacher education institutions. Tutors/ lectures and leaders in education will require some orientation in order:

- to identify what they should do to make students understand issues of equity and inclusivity;
- to train students on appropriate approaches to identifying and addressing equity and inclusivity;
- exposing students to the use of reflection and action research in their profession.

Assessment strategies

Teacher education institutions will need to reframe their programmes and courses to include the perspective, concept and strategies of inclusive education as a central theme.

Assessing pupils' progress and learning

Introduction

Student teachers need to become assessment literate. This means they know and can apply the principles and procedures for sound classroom assessment of (summative), and assessment for (formative), learning. They also need to know how to use the information from their assessments to support their planning for differentiation, identifying and making provision for the needs of all pupils in the ages, subjects and contexts, which they are training for. Pre-service training, therefore, should ensure students are equipped to identify the needs of all pupils and are conversant with the fundamentals of assessment and testing.

National Teachers' Standards expectations on student teachers

The National Teachers' Standards and accompanying guidelines make explicit the expectations for student teachers in relation to what they should value, know and do in assessing pupils' progress by the end of their training. They should have secure Curriculum knowledge, subject knowledge and pedagogical content knowledge. They should be able to plan for and use differentiated, interactive instructional strategies, engaging learners to achieve higher outcomes for all and particularly those who are more vulnerable; those with disabilities, girls and those who need cognitive challenge, and use assessment productively in achieving those outcomes. Assessment sits in the Professional Practice domain of the NTS.

Essential themes, Issues and Content

The expectations for students need to be interpreted in the training programme according to the age, subjects and contexts within which the student teachers are training to teach. This includes knowing how approaches to assessment differ across the subjects they teach.

Core principles and practices of assessment need to be addressed, including: differences between formative and summative assessment; standardisation and standardised tests; how to identify children with reading or literacy needs in Ghanaian and or English; diagnostic testing for literacy and mathematics; progression in subjects and ages; how to give effective and efficient oral and written feedback; nature and purpose of nationally standardised tests; how to use assessment and test data to ensure teaching is both supportive and challenging; how to use assessment in Ghanaian languages if teaching KG to P3.

Students need to be prepared to monitor the learning of pupils to reflect on and evaluate the quality of their teaching and assessment. Mentors' CPD needs to prepare student teachers to support students in developing effective assessment strategies, including modelling approaches to assessment.

Teaching, learning and assessment strategies

Supported teaching in school needs to provide the opportunity for students to develop productive assessment practices and be assessed demonstrating that they can make effective use of assessment to: make adjustments to their planning to overcome barriers to learning and progress, and ensure that all pupils, regardless of social, cultural, academic and linguistic differences, can access the curriculum. The assessment of students' assessment knowledge should include: scrutiny of samples of pupils' work and students' marking; observation of students' assessment practices when teaching over time; and consideration of evidence of the students' impact on pupils' progress and learning. Evidence relating to this should become part of the students' portfolios.

Links to other areas of the Curriculum Framework

Assessment is a cross-cutting issue and is integral to each of the four pillars of the curriculum. This section of the Framework has been written giving full consideration to comments regarding student teachers' assessment of pupils in other areas.

Core and transferable skills

The competencies and attributes which are key to being an effective teacher, including: critical thinking, problem solving skills, creative thinking, innovation and entrepreneurial skills, communication skills, information and communications technology, social skills and commitment to lifelong learning.

Introduction

Core and transferable skills are a set of skills that are considered to be most fundamental and valuable and that all students need to develop for success in their education, career and life. Core and transferrable skills cut across disciplines as well as pedagogies. The skills are also known in different contexts as: cross-curriculum skills, soft skills, twenty-first century skills, transactional skills, and employable skills.

Rationale

The rationale for core and transferable skills in the teacher education curriculum addresses students' cognitive capabilities and competencies to improve their levels of reasoning and coping strategies for higher educational and career achievement. The other goals of embedding core skills in the Teacher Education Curriculum Framework are to:

- give emphasis to a teaching profession that requires teachers to be life-long learners who engage in ongoing professional learning during the course of their careers;
- provide student teachers, college tutors, teacher unions, the NTC, with a profile of the agreed skill dimensions for professional training, decisions and accountability;
- prioritise the knowledge, skills and behaviours needed to assist young and prospective teachers to perform well in their chosen careers now and in the future;
- provide generic and cross-cutting content/ professional attributes that are essential for students to exhibit/apply to specific theoretical and practical teaching and learning.

Expectations from Student teachers

The essential things student teachers are expected to know, understand and be able to do by the end of their training to be effective teachers include the following:

- critical thinking and problem-solving skills;
- creative and innovative skills;
- life-long learning/personal Life skills;
- collaborative/social skills;
- communication skills;
- literacy and numeracy skills;
- leadership skills;
- entrepreneurial skills;
- digital literacy/information, communication & technology (ICT) skills and;
- civic literacy

Curriculum provision

Theoretical and Practical Aspects

Teacher education institutions are expected to weave core skills into their curriculum, instruction, assessment and practicum in order that the student teachers will engage in deeper thinking and learning. Student teachers will have to develop general teaching and assessment strategies that help to integrate core skills and the four knowledge mixes – pedagogical knowledge, literacy studies in Ghanaian and English languages, subject and curriculum knowledge and supported teaching experience in school. These include:

- integrating knowledge and core skills to enable student teachers to develop both simultaneously;
- student teachers need to adopt learner-centred, interactive pedagogy to make core skills an essential part of lesson planning;
- additionally, students need to be supported to develop effective classroom practice that focuses on highly effective techniques and teaching approaches.

More specifically, student teachers need to develop the following essential teaching and assessment strategies:

- collaborative learning and assessment strategies;
- a project-based approach to teaching and learning and assessment;
- lesson planning templates to incorporate core skills;
- assessment of core skills through the use of purposely-designed assessment tools; observation schedules, case studies and portfolios;
- experiential pedagogy, and;
- lead student models.

Links with other aspects of the Framework

- as a cross-cutting discipline, core skills and values are linked to all the pillars, especially values and attitudes;
- subject and Curriculum knowledge, literacy studies, pedagogy, standards, language and literacy study, student practice, early childhood education, education studies, curriculum studies and the school curriculum, etc.;
- it also has links to all the Teachers' Standards.

Other Issues

Continuing Professional Development (CPD)

Key to effective training and support in school and in college: a rigorous CPD structure with an award system for the full range of stakeholders involved in teacher preparation.

Introduction

Continuing Professional Development (CPD) is important for high quality performance of all teacher educators – tutors, link tutors, mentors, and school leaders. CPD needs to occur in a range of forms, depending on the participants and their level of knowledge. However, as the agreed orientation of the Curriculum Framework is one of action research and reflective practice this needs to be modelled in the nature and delivery of the CPD. Importantly, it needs to be a process which both reminds participants of the value and purpose of the teacher preparation curriculum and affords development of additional skills, knowledge and understanding. CPD should prepare mentors to take responsibility for supporting student teachers' development and to meet the Teachers' Standards.

The CPD needs to be context specific and designed to meet specific teaching and learning needs. It must be cohesive and outcome-driven not fragmented and in the form of 'one off' slots.

The demand of ensuring effective CPD that works at a local level, which is responsive to local needs will be significant. It will require a major commitment from the leaders of teacher education and the Ministry to work with College Leaders to ensure an ongoing imperative for engagement by all stakeholders.

Audience for and providers of CPD

The CPD needs to be tailored to the wide range of stakeholders involved in teacher preparation. Key stakeholders include: College of Education leaders, education tutors, link tutors, school leaders, Professional Development Coordinators (PDC), TLA, SPA, District Directors of Education (DDE), District Officers (DO), Circuit Supervisors (CS) and critically, mentors. The main providers locally will be: College of Education and University Teacher Education Leaders, college professional development coordinators, and programmes supported by development partners for example, T-TEL and USAID-Learning.

Expectations of CPD

- All teacher educators (in ITE, lecturers/tutors) and teachers in partner schools should:
 - have a qualification at a level higher than the accreditation level of the course on which they are teaching; if not, they should be working towards it. Teacher training institutions should set out their plans to ensure that all such staff achieves a relevant qualification within five years;
 - have, in the main, been successful school teachers and school leaders;
 - participate regularly in CPD, including school-based development, to: support student teachers, maintain high standards and inform equitable assessment.

Leaders of Teacher Education should be active in their own professional development and professional development programmes for their teams.

The teacher Education Institutions should provide the ongoing professional development that school staff and mentors require to support student teachers effectively.

University leaders, College of Education leaders, Professional Development Coordinators (PDCs) and school leaders need to:

- know, understand and be committed to the teacher education curriculum;
- induct mentors and new tutors into working with the curriculum;
- work together to identify ways of raising the profile of mentoring so that the role is recognised as one which will help raise standards;
- ensure mentors have time to work with students in school;
- monitor, evaluate and review the work of mentors and tutors and identify training needs;
- prepare district directors and their officers to undertake their roles of monitoring, evaluating the work of mentors and students in school and providing feedback as appropriate.

Mentors need to be prepared, through CPD, to:

- have a sound working knowledge of the teacher education curriculum and its implications for their role in supporting the improvement of teacher students' teaching; this includes the relevant subject specific and pedagogical knowledge for their age and specialisms and cross-cutting issues;
- have a knowledge of language and literacy, Ghanaian and English;
- support student teachers in developing their teaching and assessment, ensuring it is inclusive with high expectations;
- demonstrate appropriate professional values and conduct;
- have the skills to observe student teachers, provide constructive feedback, model teaching; monitor and assess student teachers' progress;
- have the awareness to direct students to other expertise;
- have a commitment to life-long learning and improving life chances and outcomes for all pupils;
- understand the structure of the teacher preparation programme and the requirement of students to meet the teachers' standards, and;
- evaluate how effective what they do is in helping develop the quality of students' teaching, assessment, classroom management strategies and use of reflection and action research to improve their teaching.

Requirements for CPD

- there must be agreed and required contact hours for CPD as appropriate to different audiences;
- the models and content of CPD must be approved by the appropriate body;
- there must be effective quality assurance of this CPD to ensure it is addressing need and is fit for purpose.

Assessing student teachers

Assessment of students against the Teachers' Standards through professional portfolios, including: evidence from: in-school learning; assignment and examination results, key to assessment having a positive impact on student teachers' progress to being effective new teachers.

Introduction

Student teachers must be assessed in a manner that has the greatest positive impact on their progress towards being effective, engaging and inspirational new teachers who: embrace equity and inclusivity; fully meet the Teachers' Standards and can teach and assess the Basic and SHS School Curriculum, that is, teach at the level they are trained for. In keeping with this, assessment should: include the use a range of appropriate measures; take place throughout the course, with clearly specified progression stages and include formative and summative assessment.

Expectations

The following four bullet points provide a summary of the explicit expectations regarding the assessment of student teachers from the Guidelines for the National Teachers' Standards.

- Universities and Colleges of Education must ensure that the design and content of their pre-service programmes and their delivery allow student teachers to be successfully assessed against the Standards by the end of their period of training. This will particularly be relevant for the school practicum components that must provide extended and guided periods of teaching in classrooms.
- Student teachers must be realistically and fairly assessed against the Standards in accordance with what can be reasonably expected of teachers still learning to teach. Student teachers' creative and innovative skills will need to be assessed
- as appropriate to the specific context and circumstances they are in and for the level of learners they are to teach, for example, for very young children in pre-school, or for young people needing specialist knowledge at Senior Secondary School
- Those assessing student teachers must use the Standards as an exemplification of what a 'good teacher' looks like for Ghana, recognising the urgent need to improve the quality of the school experience and learning outcomes for all learners and to raise the status of teachers in their communities and country.
- Those assessing students, that is, college Principals, supervisors, lecturers, tutors, head teachers and mentors in schools, as well as student teachers and teachers themselves, must use the Standards as the key reference point in their assessment.

Within each pillar of the curriculum, and for each specialism and subject there will be specific assessments. These will be designed to ensure that within the broad umbrella of the three domains of the Teachers' Standards students have the subject specific, pedagogical and assessment skills to teach at the age, ability and aptitudes of the learners they are training for.

Each assessment will be linked to the relevant domains or aspects of the Teachers' Standards. For example, Literacy Studies: Ghanaian Languages and English, the student teachers must be assessed in terms of their ability to: communicate using language that engages and enthuses the learner and use diagnostic tools to identify children with literacy problems in both Ghanaian language and English and provide remediation. Further detail of specific assessment foci in literacy and other areas can be found in the relevant sections of this document.

Curricula Provision: assessment strategies

The approach to assessment requires evidence that a teacher student can meet all of the Standards in a form that contributes to their development as a teacher and reflects the strategies they will use when assessing pupils. Central to this is the production of a professional portfolio organised according to the three domains of the Teachers' Standards and aligned to the pillars of the Curriculum Framework. The portfolio will include:

- evidence from teacher training institution learning in the form of assignments, examinations and lecture notes.
- evidence from in-school learning from lesson plans, study notes, resources, assessment records, learner exercise books, photographs, lesson evaluations from tutors and mentors, testimonials, minutes of meetings and any notes from CPD courses, action research, classroom enquiry studies, and any evidence collected by the teacher student or teacher over time.

As a critically reflective practitioner, a teachers' professional portfolio provides the starting point for the continuing development of the teacher in their Induction year and for subsequent years.

Further issues

College tutors and mentors and all those assessing students in school will require CPD to support them in undertaking the assessment of students using the range of measures proposed, in a way which is accurate and rigorous.

A major consideration is to reflect on the need for a National Assessment Strategy to ensure consistency in assessing teacher student competence against the Teachers' Standards.

Specialism in teacher education

This is a key to depth and breadth of knowledge of what is to be taught; to connecting with the developmental level of children and to consolidating content knowledge.

Introduction

For more than a decade, the training of teachers in the teacher training institutions has focused on the training of generalist teachers for the basic level of education, stretching from early childhood to primary and even junior secondary school. The recognition of the need for specially qualified teachers for primary education is an area of neglect in the teacher training curriculum. This also stems from the lack of recognition by policy makers that early childhood education, primary education and junior secondary education are distinct areas of knowledge with their own specialist concerns, concepts, praxis and methodological perspectives. It is important that these different levels are strengthened as distinct but integrated discourses. However, more recently eight colleges have been allowed by the Ministry of Education to train early childhood teachers, while fifteen have been designated as science and mathematics colleges to prepare teachers for the JHS, thus allowing some flexibility in specialisation. Universities with teacher education faculties are offering early childhood education for those teaching 4 to 5 year olds in kindergarten. They also offer programmes that prepare teachers for primary, JHS and SHS. It is recommended therefore that four levels of specialism should exist in basic education: early grade level (KG-P3), Upper Primary (P4-P6), JHS and then SHS level

Intended impact on students

Specialism will not only help with the connection with the developmental level of children, but will also help consolidate content knowledge within predefined levels. It will also allow for a deep concentration of content knowledge within the level of specialism, provide opportunities to experience and practice teaching within a narrow-predefined level, match student's interest with the specialised areas of the curriculum, and enable student teachers to understand expectations of learning for a smooth transition before and beyond their specialism. Students specialising in upper primary teaching will learn to use pedagogies that will ensure a smooth transition from upper primary to JHS 1 and KG to P3. Students' teaching in KG1-P3 will utilise pedagogies that will ensure smooth transition from this level to upper primary.

Weightings of the Curriculum Framework

In this section, the minimum credit values (in percentages) for the four pillars constituting the knowledge mix leading to the initial teacher qualifications are presented.

Table 1: Proposed weightings for the four Pillars of the ITE

Pillar	Proposed Percentage of Credit Hours			
	K – P3	P4 - 6	JHS	SHS
Subject and curriculum knowledge	25	25	40	60
Pedagogic Knowledge	25	25	20	18
Literacy studies: Ghanaian languages and English	20	20	10	5
Supported Teaching in School	30	30	30	17
	100	100	100	100

Rationale for the above proposed weighting

The Framework follows the concurrent training model for teacher education programmes in the country. The four pillars are interlinked and interdependent, and combined with the cross-cutting issues; they create the keys to a successful teacher education programme.

1. Weightings for Pillar 1:

Teachers' secure content knowledge for specialism and subjects is key to teaching the school curriculum effectively. Student teachers would also learn about subject specific issues such as progress in learning in the subject, barriers to learning, potential misconceptions. In this Curriculum Framework, the proposed weighting for the first pillar, as show in Table 1, is that the KG to P6 student teachers should be made to take minimum of 25% credits. From this then, it is increased to 40% for JHS and 60% for SHS.

2. Weightings for Pillar 2:

The rationale for proposing a higher percentage for Literacy studies (i.e., Ghanaian languages and English) for KG – P6 student teachers is rooted in the current school language policy of Ghana – (GRAP). For teachers to be able to improve the level of literacy among learners, Primary teachers would need to be exposed to more courses in Literacy studies. It is proposed that literacy studies be allocated a minimum of 20% for the training of student teachers at primary level. At the higher levels, JHS and SHS, this is reduced to a minimum of 10% and 5% respectively. Student teachers preparing to teach at the JHS and SHS would be studying Literacy, focusing on language proficiency and communication. Importantly, they need to understand and be able to address the literacy demands of the subjects they teach to ensure learners are able to access the curriculum.

3. Weightings for Pillar 3:

The principles of effective teaching and learning are very significant to the teaching of the subject and curriculum knowledge. Teachers' knowledge of instructional and assessment strategies is key to supporting the learning and progress of all pupils.

All student teachers will therefore require knowledge, skills and understanding related to pedagogy for the levels they will be teaching. For teacher students who will be teaching at various levels, the weighting for this pillar is 25% for KG-P3 and P4-P6. This then reduces to 20% and 18% for JHS and SHS respectively.

4. Weightings for Pillar 4:

The rationale in this Curriculum Framework is that ITE programmes should allow student teachers to develop their teaching from the first year. This is because the framework is built on the concept of developing teacher students teaching from the first year of training; that Supported Teaching in School would be offered each year through to completion. It is proposed that the fourth pillar – supported teaching in school – becomes a sustained continuous activity that will equip students to 'hit the ground running' as beginning teachers. As indicated in table 1, 30% is allotted to training KG to JHS teachers. For students who will be teaching at SHS level, a minimum of 17% is allocated to this exercise. The supported teaching in school would be assessed as part of an overarching portfolio where student teachers identify and reflect on evidence which demonstrates they have met the NTS and specifically, e.g. used assessment to differentiate for inclusivity.

Policy implications of the Curriculum Framework

The successful implementation of the Curriculum Framework entails a number of policy issues which need to be addressed through the support of the MoE, teacher unions, teacher education institutions, and other stakeholders in teacher education. The policy implications include:

- demonstration/partner schools: all teacher training institutions should have high quality demonstration/partner schools for teacher preparation. teachers in these schools should receive special training and appropriate incentives;
- languages: review and strengthen the policy for teaching and learning in Ghanaian languages and English. the need to consider how all languages will have trained teachers to teach. there is the need to consider requiring all students to study two Ghanaian languages as was the case in the past;
- specialism pathways: introduce specialism pathways for: early grades (KG – P3), primary 4-6, JHS and SHS;
- continuing professional development (CPD): implementing a rigorous CPD structure for mentors, tutors, and others with appropriate incentives;
- quality assurance: institute a system of quality assurance for teacher education in schools and training institutions. the role of the National Inspectorate Board (NIB), National Teaching Council and nab will be pertinent here;

- raising the profile of teaching: implement career structure and associated incentives to bring the right people into teaching, shape them to be the best to fully meet the country's specific needs, and continuously develop them to give their best once they go into the schools. raise the entry requirements and the condition for entry into teacher education as well as the duration of training at the college of education level. according to education international (2011, article xi):

teachers should be accorded a high professional status in society commensurate with their professional responsibilities, qualifications and skills, and the contributions which their profession makes to the development of society.

- provision of resources: all training institutions should be provided with the basic infrastructure required to support new pedagogical approaches designed to produce inspirational teachers who will teach children to be abreast with twenty-first century skills. this may include the provision of model early childhood centres and language development centres.

Chapter 5

Complementary areas of the Curriculum Work

This chapter addresses issues arising from discussions, which are not currently within the agreed elements of the Framework, but are likely to have implications for the work on the Framework.

Education of teachers for technical and vocational education

Introduction

A serious deficiency in the educational system is the over emphasis on the grammar type of education to the neglect of technical and vocational education and training (TVET). The 1987 reform completely ignored the technical and vocational institutes, the quality of their teachers and their mode of professional preparation. Though universities, polytechnic and vocational and technical institutes offer programmes in subjects such as agriculture, home economics, fine arts, commerce and technology, only a few institutions such as UEW, Mampong College of Education offer programmes leading to teacher preparation in major areas of vocational and technical education. Teachers teaching TVET subjects at the secondary level therefore lack the appropriate pedagogical preparation. The TVET system cannot function well without the availability of the right calibre of qualified teachers and this partly explains the current stunted growth of the TVET system; therefore, appropriate measures need to be put in place to rectify this issue.

It is noted that institutions offering TVET teacher preparation are to be well equipped both, in terms of infrastructure, and physical and human resources, and should show evidence of established linkages with professional bodies as well as industries.

Expectations

TVET student teachers will have expectations similar to those of students who will teach mainstream subjects. The National Teachers' Standards is explicit about the expectations for student teachers in the Curriculum Framework in relation to what they should value, know and do in order to be effective teachers. They will, for example, be expected to:

- have a secure knowledge and understanding of technical vocational subjects, used interactive instructional strategies and engage learners to achieve higher outcomes for all.

The 255,000-strong teaching forces at the pre-tertiary level in Ghana provide the engine oil for keeping the education system vibrant. Being the most significant resource in schools, these teachers are critical in raising the standards of education.

Improving teaching performance is perhaps the most likely policy direction that can lead to substantial gains in student learning. Highly skilled, well-resourced and motivated teachers ensure greater returns in schooling. Prospective teachers enter the teaching profession for different reasons and with different desires, but they all share the need for appreciation, autonomy, and affiliation during their professional careers.

In Ghana, teaching is not considered an attractive profession by young people. It is seen as the last resort when they are unable to get into their first and/or second choice programmes at the universities. For most people, it is not the first choice. Teaching therefore suffers from 'chronic prestige deprivation'. Teachers therefore fail to excite and inspire their students to achieve better learning outcomes. Recent assessment in early grade reading revealed that only the top 2% of pupils in KG-P3 could read with fluency and comprehension while the majority (75%) could not read in both English and Ghanaian languages. The results of the National Education Assessment (NEA) of P3 and P6 pupils conducted in the country from 2005 to 2013 have consistently shown that Ghanaian children struggle to read and do simple mathematics. However, in countries where the teaching profession is highly valued, such as Finland, Singapore, and South Korea, students seem to have better learning outcomes.

The poor quality of teaching and learning has been attributed to a number of factors, including:

- the quality of professional education programmes. Questions have been raised about the programmes in teacher education, especially the ability to prepare student teachers to: use active and constructive pedagogy; become reflective practitioners using action research to improve practice; and have secured knowledge of the subject content;
- the entry qualification into teacher education institutions. the minimum qualification required to enter the teaching profession, particularly at the basic level, is lower than other programme requirements at the university level; at the college of education, the requirement is lower than what is required to pursue teacher education in university;
- a profession with a number of untrained teachers: about a quarter (24%) of teachers at the pre-tertiary level have no pedagogical training.
- lack of trust in teachers. policy makers, parents and the community do not trust in teachers' professional judgement; where teacher unions are consulted, it is more likely to be on matters of welfare and policy rather than pedagogical issues;
- the teaching profession has a generally lower prestige compared to other professions; at the basic level, teachers are least regarded while teachers at the university have higher status;
- unattractive remuneration and working conditions. This culminates in job dissatisfaction, a crucial factor influencing teachers' self-esteem.

These issues have bedevilled a more positive view of teaching and teachers. There is the need to raise the profile of teaching in Ghana; the standing or regard accorded teachers as evidenced by their level of appreciation of the importance of their function and of their competence in performing it, and the working conditions and remuneration accorded them relative to other professional groups.

In 1966, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and International Labour Organisation (ILO) produced a seminal document, the Recommendation concerning the Status of Teachers, aimed at improving the status of teachers. The recommendations provide guidelines for countries to follow with regard to the professional preparation, employment and conditions of service of teachers.

Teachers need to act in such a way that other stakeholders, including policy makers and education authorities, recognise their professionalism. Taking into consideration that high occupational prestige and status is of critical importance to educational systems, the following recommendations are put forward to raise the profile of teaching:

- providing high quality teacher education that includes the development of professional knowledge of the curriculum, professional attitudes and values, and professional practice in schools;
- ensuring teachers have expert knowledge and specialised skills, acquired and maintained through rigorous and life-long study; they also have to develop a sense of personal and corporate responsibility for the education and welfare of the pupils in their charge;
- providing regular professional development opportunities to keep teachers up-to-date about changes in knowledge and pedagogy in their fields to improve professionalism;
- improving salaries and working conditions including adequate resources and attractive career prospects;

- being an active member of a teacher professional organisation; teachers' organisations should be recognised as a force which can contribute greatly to educational advancement and which therefore should be associated with the determination and implementation of educational policies, since teachers are best placed to understand the dynamics in the school system;
- supporting teachers to research, publish and attend conferences;
- ensuring academic freedom, autonomy and involvement in decision-making;
- advocating for a strong public education system placed at the centre of local communities and a positive representation of teachers in society;
- ensuring that teacher education institutions accept only candidates with the right qualifications; such candidates need to be interviewed to evaluate their dispositions;
- given the influence that teachers have on the learning of (student) teachers, it is extremely important to institute a performance appraisal system that ensures that their work is of high quality.

There should be a policy to ensure that people without professional teacher training are not allowed into the classroom, just as an untrained medical person will not be allowed to handle a sick person.

Teacher educators in teacher education

The quality of pedagogical inputs in teacher education programmes, and the manner in which they are transacted to realize their intended objectives, depend largely on the professional competence of teacher educators (NCTE, New Delhi, 2005).

Teacher educators provide instruction or give guidance and support to teacher students, and thus contribute substantially to the development of students into competent teachers (Koster et al., 2005, p. 157). They are the ones who are responsible for the quality of teachers produced in the teacher education institutions and that of education in the country. They can have a significant impact upon the quality of teaching and learning in our schools, yet they tend to be forgotten in policy-making. In addition, they do not receive much attention in terms of their education and professional development. Over the years, government policy on the quality requirements for teacher educators, their academic and professional development, have received little or no attention, and this is particularly so for those who educate teachers in early childhood education, adult education, non-formal education as well as vocational education and training. The result is that there is no formal requirement for teacher educators in Ghana. At the university level, teacher educators are appointed based on their experience as teachers, subject specialists or researchers in an educational or subject area. At the college level, teacher educators are appointed because they are experienced teachers. There is therefore no initial training for teacher educators and as such they do not enter the profession with a clear understanding of their roles, or a clear identity as teachers of teachers.

The need and importance of professionally-trained teacher educators is underscored in a number of educational policy statements including the PTPDM, but the situation on the ground raises some concerns. There is a considerable shortage of properly qualified and professionally-trained teacher educators at all levels of education. There is inadequacy in the required numbers as well as a mismatch in the qualifications of teacher educators and their job requirements.

The phrase ‘teacher educator’ has been used to refer to someone teaching educational science or didactics within an initial teacher education programme in tertiary education. The European Trade Union Committee for Education (ETUCE 2008) has expanded this to include all individuals who support the development of teachers, such as:

- supervisors of practice in schools linked to initial teacher education institutions;
- trained and experienced teachers supervising practice in other schools;
- tutors (counsellors, coordinators, mentors, guides etc.) supervising prospective teachers during the qualifying phase in the workplace;
- networks of supporters in the qualifying phase in the workplace;
- higher education academic staff, who teach education;
- higher education academic staff, who teach school subjects;
- other higher education academic staff, who teach didactics or general courses, and
- education researchers.

According to the European Commission’s (2013) report on ‘Supporting Teacher Educators for Better Learning Outcomes,’ teacher educators develop competencies at two levels:

- 1st-order competencies concern the knowledge-base about schooling and teaching which teacher educators convey to pre-service teachers;
- 2nd-order competences concern the knowledge-base about how teachers learn, and how they grow to become competent teachers. They focus on teachers as adult learners, the associated pedagogy and organisational knowledge about the workplaces of students and teachers.

The following are key characteristics of an effective teacher educator. Teacher educators should:

- know their students and how they learn. They are to use appropriate strategies to improve students’ learning, using knowledge of the physical, social and intellectual development and characteristics of their students in order to meet the needs of students from diverse cultural and economic backgrounds;
- have a secured knowledge of the content and how to teach it to expand learning opportunities and content knowledge for all students, and related pedagogic and assessment knowledge for the specialisms they are training for as well as comprehensive understanding of progression and the adjoining specialisms;
- plan for and implement effective teaching and learning by demonstrating exemplary practice and high expectations and assist students to plan, implement and evaluate the effectiveness of their lessons;
- create and maintain an inclusive, supportive, productive and safe learning environment, as well as demonstrate behaviour management strategies that ensures students’ well-being;
- be able to diagnose learning needs; co-ordinate student performance and programme evaluation using internal and external assessment data to provide feedback and report on student learning to improve teaching practice;
- take part in personal professional development involving enquiry and reflection into one’s practice; assist with the professional development of pre-service teachers, colleagues, and school administrators; engage in research, and provide quality opportunities for supported student teaching;

- engage in creating new knowledge of a practical (learning materials, curricula) and theoretical (research, publication in professional journals) nature through systematic enquiry;
- engage professionally with colleagues, parents, and the community. Teacher educators are to model exemplary ethical behaviour and values in all professional dealings with students, colleagues and community as well as take a leadership role in professional networks including professional associations;
- demonstrate transversal competences such as decision making, initiative taking, collaboration, critical thinking, and entrepreneurship, and exhibit leadership competences –inspiring students and colleagues, and coping with ambiguity and uncertainty;
- all must be qualified teachers with a teaching license with at least a Master’s degree in education or subject area specialism, and have work experience in teaching children in school.

More specifically, teacher educators in colleges and universities should:

- have qualifications at a higher level than the level he/she is teaching (master’s degree or PhD);
- be fully registered and licensed teacher with at least 5 years of teaching experience in the relevant sector – early childhood, primary, JHS or SHS;
- be a good role model with a wide repertoire of teaching styles;
- be involved in research that attempts to support theory-practice integration;
- be committed to high standards of professional practice and conduct.ct.

ICT in Teacher Education Framework

ICT is key to effective communication, teaching and learning in the 21st century.

Rationale

For several decades, advances in digital technology and ICT have led to an increased interest in considering its potential applications in the education sector. More recently, the increased affordability of low-cost mobile technology has sparked intense interest and experimentation in the classroom. Moreover, the (constructive) use of ICT is recognised as an effective tool both for teacher education and for student learning (particularly when combined with interactive/student-centred approaches, such as questioning/talk, group/pair work, and supportive feedback).

The need to plan teacher education programmes and training activities to prepare and or facilitate professional development of teachers on the effective integration of ICT pedagogy into the teaching learning process is therefore very critical. This Curriculum Framework proposes the integration of ICT into initial teacher education programmes. In practice, there should be integration of ICT into the teacher training curriculum for teachers to: fully embrace ICT so that they will be fully aware and have positive attitudes; acquire the right knowledge and skills; implement and innovate the right kinds of technologies, and to become responsible citizens. In the all ITE curricula, the key domains to focus on include:

1. awareness and attitude

- a. awareness of educational value of ICT;
- b. self-consciousness of using ICT;
- c. assessment and self-reflection;
- d. concepts of life-long learning.

2. knowledge and skills

- a. basic knowledge and information literacy;
- b. basic ICT skills.

3. implementation and innovation

- a. applying ICT equitably;
- b. applying ICT effectively;
- c. applying ICT appropriately;
- d. self-regulating practice.

Using ICT to promote learning in Teacher Education

As shown under pillar 3 of the Curriculum Framework, a teachers' qualification in Pedagogical Content Knowledge (PCK) should also include Technological Pedagogical Content Knowledge (KPK). This would be comprised of:

- student teachers' learning of ICT, where they will experience good pedagogy as they enhance their daily life, teaching and traditional management of the use of ICT with the use of productivity tools, such as the Internet in searching for information and online communities and email.;
- ICT Integration in subject teaching at the various levels in education where ICT is integrated into lesson planning with the use of multimedia tools, using ICT-based Generic Pedagogical Skills, using authoring and multimedia tools;
- ICT for Pedagogical Innovation to facilitate student teachers learning with and through the use of ICT by designing ICT-enabled lesson plans and digital materials, creating a pedagogically-appropriate learning environment. This would be achieved through ICT-based subject-specific Pedagogical Skills like conceptual learning, organisation of ideas, and tele-collaboration with specific learning tools e.g. Web 2.0 mind mapping and WebQuest;
- ICT for Pedagogical Transformation that enables and manages deeper learning through ICT by the use of a blended learning environment with autonomous professional learning skills, and creating Learning Management Systems (LMS), interactive tools and gaming.

Student teachers should use ICT to further their own learning, both in college as well as life-long learning. The new teacher education curriculum/programme informed by this framework needs to explicitly promote ICT use for learning by all student teachers.

One use of ICT in teacher education is the holistic use of ICTs by teachers to further their own professional learning individually and or collectively — both ITE as well as life-long learning.

In ITE, this means student teachers using ICT to achieve their personal learning goals within the overall goals set by their programme — in any subject across the curriculum irrespective of (future) school-type and subject. Such ICT-supported teacher learning does not concern the use of ICT in the school classrooms, and does not depend on the availability of ICT in the schools where student teachers undertake practice teaching, or are posted as teachers. For example:

- a student teacher who uses ICT to access video clips of classroom teaching, for the purpose of developing a deeper understanding of methodology, will be more effective, irrespective of whether the teacher has access to these clips when teaching at school;

- a student teacher who understands how to use a digital device to record their own teaching for the purposes of reflection will be a more effective teacher. Moreover, they may be able to use this approach when they are on practice teaching or when posted as teachers, as well as potentially with their own mentees;
- a student teacher who uses ICT in their college-based education, in order to deeply understand a mathematical topic (e.g. fractions) will teach this topic more effectively in primary school, irrespective of whether ICT is available in that school;
- a student teacher who knows how to find and download content for their own professional development, as well as curriculum-relevant content, will be able to continue their own professional development (as well as fill subject content gaps) beyond their initial education, even if no ICT is available for teaching at their school.

The use of ICT by student teachers includes use during lesson time, as well as in their own time.

Curricula provision

Teachers' development on ICT-pedagogy integration should comprise of four stages of ICT usages and pedagogical ICT usages respectively as follows:

1. **emerging** – teacher students should become aware of and apply productivity tools;
2. **applying** – teacher students need to learn how to use ICT in subject teaching and enhance traditional teaching;
3. **infusing** – teacher students should understand how and when to use ICT and facilitate blended learning within or across subject areas;
4. **transforming** – teacher students should specialise in the use and design of ICT and create and manage ubiquitous and interactive e-learning environments.

ITE courses on ICT in education

Going further, the following should be worked on from the stages:

1. **the emerging stage** is the ICT Literacy stage where ICT skills are developed using productivity tools that result in the development of digital materials. The teachers who will teach ICT/computing as a subject need to learn both about ICT/ computing, as well as how to teach it at JHS/SHS. Such teachers need to acquire a strong foundation in the subject (ICT/ computing), particularly as their own prior experience of ICT/computing may be limited. Subject-focused teacher learning should be rooted in the JHS/SHS curriculum, but be enriched by contemporary perspectives on effective ICT/computing curriculum content, to pre-empt future changes in the JHS/SHS curriculum.

However, as for teaching any subject with ICT, these teachers need to develop extensive skills on how to use interactive pedagogy and ICT to effectively teach this (and any other) subject. This is particularly relevant, as they are likely to be in a key role in supporting the introduction and use of ICT at their school (across the curriculum), and may be supporting other teachers in using ICT for subject teaching.

2. **applying** should touch on ICT in subject areas with teacher students' exposure to general ICTs in subject areas that will lead to specialised ICTs for basic skills for subject-specific ICTs.

3. **infusing** ICT across the curriculum should focus on ICT-pedagogy integration with the use of Project-Based Learning with theories and examples. In other words, in addition to the general use of ICT to further their own teacher learning, teachers should learn how to use ICT to further (primary/JHS/SHS) pupil learning in any subject. The research on the use of ICT in education shows that the use of ICT for cross-Curriculum learning is one of the most effective uses of ICT. The relevance of such a topic pre-

supposes that an increasing number of schools have access to ICT for student learning. While this clearly is not presently the case, it is very likely that significantly more ICT will be used during the professional lives of teachers being educated now, and it is therefore important to equip these teachers with adequate skills at this present moment.

As part of 'ICT integration in education', student teachers would learn for example:

- how to use GeoGebra in primary school in conjunction with group work to address pupils' misconceptions in fractions;
- how to use spread sheets in JHS to support project work to learn about the human physiology;
- how to use books from Project Gutenberg for literary research project in JHS in English language.

Apart from learning how to use ICT to support pupils' learning objectives and skills' development (e.g. problems solving), the teacher student also learns how to assess whether the use of ICT (as well as their teaching in general) was effective, and achieves the learning objectives.

As part of 'ICT integration in education', student teachers would also learn about ICT, but only inasmuch as this is relevant to the use of ICT in primary/JHS/SHS education. Unlike the current curriculum, all learning about ICT is directly linked to the educational use of ICT, and should focus on ideas and practices currently in use for pupil learning (such as mobile phones, tablets, OLE Ghana BeLL).

4. **transforming** should deal with ICT specialisation with Online Community as well as LMS that will lead to specialised ICT courses. Student teachers should learn how to use ICT to support student-learning in any subject, both in primary and JHS. The new teacher curriculum should contain the topic 'ICT integration in school education', that explicitly facilitates this. 'ICT' is a topic within the existing DBE curriculum, and likely to be a topic in the new teacher curriculum. However, the framework proposes that 'learning about ICT integration in education', should replace 'learning about ICT', and the whole topic should be renamed 'ICT integration in school education'.

Other technologies in teacher education

Advances in information and communication technologies, and cognitive science, are influencing many areas of human life including: learning and the management of the human condition; and, the way we teach and the way we learn, collaborate, communicate and succeed. Open Education Resources (OER) and Open Distance and Electronic Learning (ODEL) have become major technologies for teacher education. There is the need to ensure that ITE programmes utilise the policies developed in the areas of OER and ODEL to enhance teaching and learning.

Open education resources in teacher education

These are teaching and learning resources that are freely and openly available in the public domain or have been released under an intellectual property open license and can be found on the Internet. They can be remixed to suit the user's needs. They may include learning objects such as lectures, textbooks, course materials, modules, references and readings simulations, videos, audio recordings, experiments and demonstrations, as well as syllabuses, curricula, tests, software, and teachers' guides which are available for every level of education. These resources can be integrated into the ITE curriculum of teacher education institutions as well as continuous professional development courses. Some of the Open Education Resources that can support teacher education include those produced by the Teacher Education in Sub-Saharan Africa (TESSA) and Khan Academy.

Open Distance and Electronic Learning (ODEL) in teacher education

Open distance and electronic learning (ODEL) is revolutionising both the training of teachers and the delivery of education in many institutions, such as Indira Gandhi Open University with about 4 million students, University of South Africa with about 350,000 students, and the Open University, UK with about 250,000 students. With the rapid expansion in enrolment at the pre-tertiary level of education, it has become necessary to employ ODEL to train more qualified teachers. Already, a number of Ghanaian institutions with teacher education programmes are offering ITE and in-service teacher education through some form of open distance learning. This allows more students to be admitted into teacher education than is normally possible in a traditional face-to-face mode. However, institutions using this approach must ensure that students in their programmes achieve the minimum levels of practice that all trained teachers must reach according to the National Teachers' Standards.

Concluding statement

This document has presented The National Teacher Education Curriculum Framework, the central vehicle to secure the transformation of Initial Teacher Education in Ghana and through this to address the on-going and systemic problem of underachievement of Ghanaian children.

The Framework is based on the premise that a critical step to achieving effective education for all is to train increased numbers of engaging and inspirational teachers. It has been developed using an inclusive and iterative approach where by the expertise of all key stakeholders has been drawn on to create a blueprint for system change. It represents a fundamental rethinking and radical redesign of Teacher Education in order to achieve dramatic improvements in the quality of new teachers and in the learning outcomes of the children they teach.

The most significant changes will be:

- strong mentor support for the development of a student's ability to teach through supported assessed placements across the duration of a training programme;
- assessment against the National Teachers' Standards, through portfolios focusing on the quality of students' teaching;
- age level specialisms: kindergarten to primary three, primary four to six, junior high school (JHS) and senior high school (SHS);
- unequivocal emphasis on how to develop children's language and literacy skills; and abilities in mathematics, science and ICT;
- concentration on the essential skills, knowledge and understanding that will enable students to teach the school curriculum;
- explicit focus on cross-cutting issues to ensure equity, inclusivity, acquisition of transferable skills, and professional values and attitudes conducive to preparing a generation of adaptive and global citizens;
- emphasis on high quality teaching characterised by a more interactive, learner-focused approach to training that highlights reflective practice;
- robust partnership (tripartite relationship) among teacher education institutions, Ministry of Education/Ghana Education Service and schools in supporting the training of teachers;
- emphasis on classroom enquiry (action research) and reflection in action as a means to support students to develop evidence- based orientation in their teaching and hence to help bridge the theory-practice gap.

These changes will require the commitment of all those involved in initial teacher education to support the transformation of existing structures to ensure the Curriculum Framework is employed effectively in the development of the new Curriculum. It does require a complete change in the way things have been done in the past. It will demand a system change that will affect the requirements for admission, mentor training and motivation, teacher motivation and improvement in conditions of service, availability of resources, and strengthening of quality assurance and inspectorate bodies. A major challenge is to realise the potential within the system and to provide high quality professional development for those who need to carry the curriculum to fruition.

Some of the critical activities of the Curriculum reform process going forwards will include:

- work with the Ministry of Education to initiate and lead the re-writing of the ITE Curriculum (4-year B.Ed) against the NTECF;
- support for the Ministry of Education
 - in initiating policy reforms to facilitate implementation of the new curriculum;
 - re-design of the structures, such as: assessment, practicum and quality assurance, to support the new curriculum;
 - training of lecturers, tutors, mentors in the new Curriculum and on-going support for institutions setting up Partner Schools to serve as 'laboratories' for teacher education;
 - the NCTE and NAB to design appropriate policies and programmes to regulate the teacher education sector;
 - national roll out of new Curriculum;
 - ensuring links between the new ITE Curriculum and the School Curriculum.

Bringing about fundamental curriculum change is a huge undertaking. It will demand the unwavering support and endeavour from colleagues across the teacher education community and beyond. However, the prize of achieving it is the realisation of the vision for teacher education: Inclusive, Equitable, High Quality Education, Lifelong Numbers of Effective aging Inclusive, Equitable, High Quality Education, Lifelong Learning Opportunities

Increased Numbers of Effective Engaging Inspirational Teachers for All.

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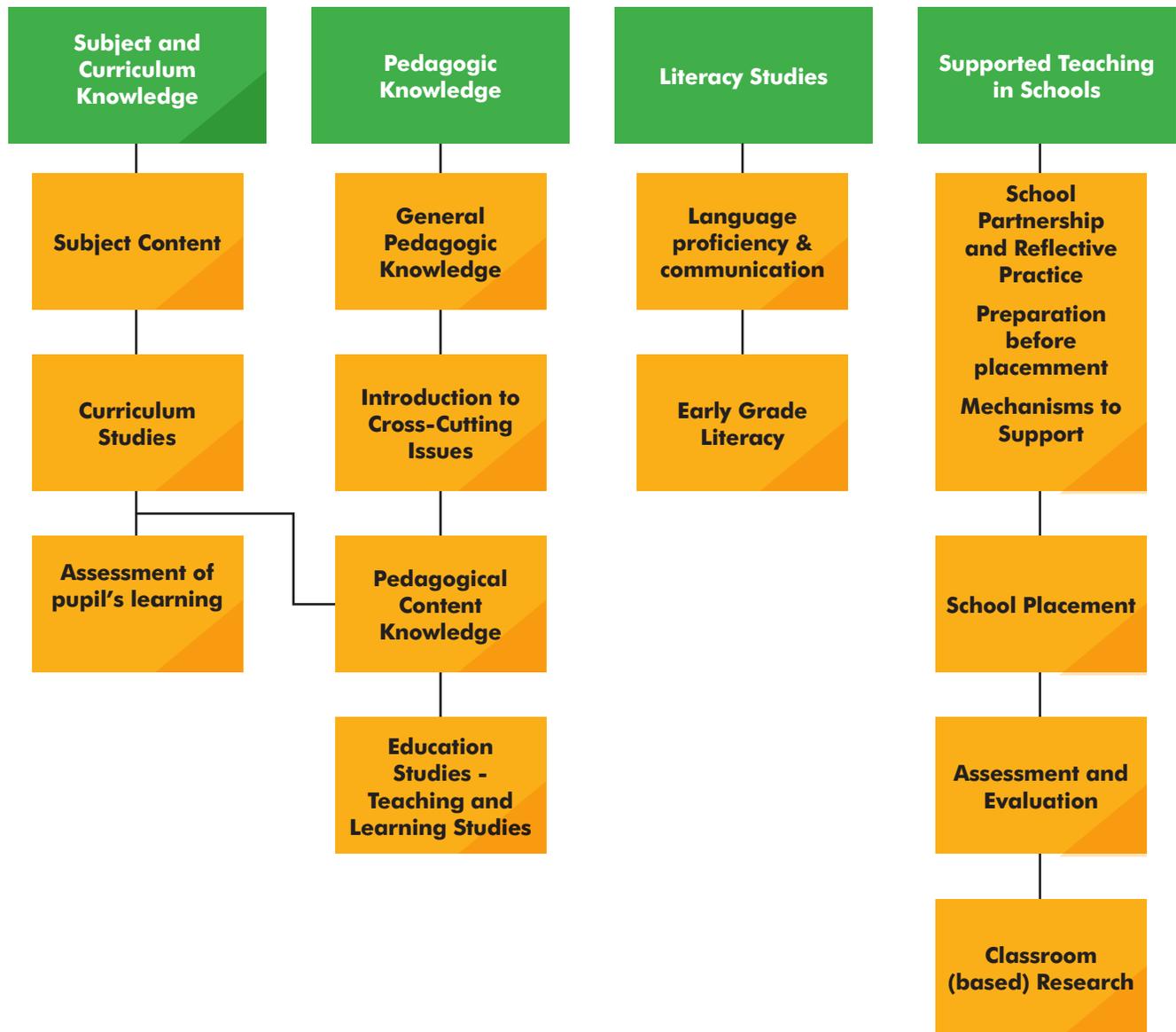
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Appendix 1

Expanded Curriculum Framework of the four pillars



Glossary

Action Research	An evaluative, investigative, and analytical research methods designed to diagnose problems or weaknesses— academic or instructional— which helps educators to develop practical solutions to address the problems quickly and efficiently. Taking action to improve teaching and learning with a systematic study of the action and its consequences.
Assessment	A systematic process through which the progress and achievements of a learner or learners is measured or judged in compliance with specific quality criteria.
Cognitive Capabilities	These are brain-based skills required to perform different tasks.
Competency	Competence indicates the ability to apply learning, to do something successfully or efficiently.
Continuing/Continuous Professional Development (CPD)	A lifelong learning process by which teachers develop, maintain and enhance their personal and professional qualities towards improving their knowledge, skills and practice.
Critical Thinking	The ability to think clearly and rationally about what to do or what to believe.
Cross-cutting issues	These are issues that cut across all the four pillars and are necessary for teachers to ensure learning for all.
Curriculum Framework	Defines the overarching vision, essential elements of what an initial teacher education programme requires to train teachers needed to deliver inclusive, equitable and high-quality education for all.
Early Grade Literacy	The acquisition of literacy through the early grades to ensure young children have the reading, writing, speaking and listening skills to enable them to communicate effectively.
Equity and Inclusivity	As a cross-cutting issue is the process of strengthening the capacity of the education system to reach out to all learners.
Pedagogical skills	The skills of teaching, not only the practical application in teaching but underpinned by understanding of curriculum issues and the body of theory relating to how and why learning takes place.
Instructional Strategies	These are strategies teachers employ during the instructional process to help students learn the desired content.
Interactive Teaching and Learning	The practice of involving learners in the educational process by encouraging them to bring their own experience and knowledge into the process, while also contributing to defining or organizing their learning.
Reflective Journals/ logs	This is a diary that contains regular entries by student teacher, detailing their experiences and emotions with regard to their learning process.

Learning outcomes	Are statements that specify what learners will know and or be able to do as a result of a learning activity. They are usually expressed as knowledge, skills or attitudes.
Lifelong Learning	It is a voluntary act of learning throughout life.
Multi-grade/multi-class teaching	The teaching of learners from two or more grade levels in the same classroom environment, ideally by using appropriate and specifically designed teaching methods.
Partner School	Selected basic schools that work with the Colleges of Education, to support student teachers to gain practical teaching experiences to become effective teachers.
Philosophy of teaching	A self-reflective statement of one's beliefs about teaching and learning.
Portfolio assessment	Assessment based on the systematic collection of learner work (such as written assignments, drafts, artwork, and presentations) that represents competencies, exemplary work, or the learner's developmental progress. In addition to examples of their work, most portfolios include reflective statements prepared by learners. Portfolios are assessed for evidence of learner achievement with respect to established learning outcomes and standards.
Reflective Practice	Thinking about or reflecting on what you do. It is closely linked to the concept of learning from experience, in that you think about what you did, and what happened, and decide from that what you would do differently next time. (Skillsyouneed.com) Ability to reflect on one's own actions/practices so as to support engaging process of continuous learning.
Special Needs Education	Education designed to facilitate learning by individuals who, for a wide variety of reasons, require additional support and adaptive pedagogical methods in order to participate and meet learning outcomes of an education programme.
Specialisms	The act or process of specializing in an area of study such as Kindergarten to primary three, primary four to primary six, or junior high school.
Technological Pedagogical Content Knowledge (TPCK also called TPACK)	A framework that integrates teachers' understanding of educational technologies and their pedagogical content knowledge to produce effective teaching with technology.

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