

YEAR 2

SEMESTER 1

Four-Year B.Ed. Course Manual

Pedagogy: Differentiated Assessment





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FOREWORD

These Initial Teacher Education course manuals were developed by a team consisting of members from Colleges of Education and four universities namely the University of Ghana, Kwame Nkrumah University of Science and Technology, University of Education, Winneba, and University for Development Studies. This team was originally constituted by the National Council for Tertiary Education (now the Ghana Tertiary Education Commission) in 2019 to support the delivery of the new B.Ed. curriculum with assistance from T-TEL and UK Aid. The revision, finalization and printing of these manuals took place in 2021 with support from T-TEL and Mastercard Foundation.

The course manuals have been produced for use as general guides for the delivery of the new four-year B.Ed. curriculum in Colleges of Education in collaboration with their affiliated universities. They are designed to support student teachers, tutors, and lecturers in delivering a complete B.Ed. course for training student teachers which meets the requirements of the National Teachers' Standards, enabling them to teach effectively in basic schools.

The first section of the manuals is focused on the course information and vision for the B.Ed. curriculum. The second section presents the course details, goal for the subject or learning area, course description, key contextual factors as well as core and transferable skills and cross-cutting issues, including equity and inclusion. The third section is a list of course learning outcomes and their related learning indicators. The fourth section presents the course content which is broken down into units for each week, the topic and sub-strands and their related teaching and learning activities to achieve the learning outcomes and the teaching and learning strategies. This is followed by course assessment components in section five. Each manual contains a list of required reading and references as well as teaching and learning resources. The final section presents course related professional development for tutors and lecturers to be able to use each section of the manual.

Field instructions to guide Supported Teaching in School are integrated into the course manuals to provide the student teacher with guidance in developing teaching throughout the entire period of study to be able to meet the requirements of the National Teachers' Standards (NTS) and the National Teacher Education Curriculum Framework (NTECF). To ensure maximum benefit the course manuals should be used in addition to other resources such as the NTS, NTCEF, National Teacher Education & Assessment Policy and the National Teacher Education Gender Equality and Social Inclusion (GESI) Strategy and Action Plan.. This will help to ensure that student teachers' learning is integrated within the wider teacher education policy framework.

Professor Mohammed Salifu

Director General, Ghana Tertiary Education Commission

ACKNOWLEDGEMENTS

The course manuals were developed through the collaborative efforts of a team of individuals from Colleges of Education, University of Ghana, Kwame Nkrumah University of Science and Technology, University of Education, Winneba, and University for Development Studies. They were produced in association with the Ghana Tertiary Education Commission of the Ministry of Education, Ghana.

A participatory team approach was used to produce this set of resources for tutors/lecturers, mentors, and student teachers. We are grateful to the specialists who contributed their knowledge and expertise.

Special thanks to Professor Jophus Anamuah-Mensah - T-TEL Key Advisor, Dr. Eric Daniel Ananga - T-TEL Key Advisor for Curriculum reform and Beatrice Noble-Rogers who provided key editorial, review and content input and facilitated the process of drafting and finalising the course manual.

Patricia Appiah-Boateng and Gameli Samuel Hahomene, served as typesetting and formatting coordinators and designed and produced the illustrations, tables, and other graphics which appear in the pages. They spent time and effort designing and redesigning the graphic layout and producing the camera-ready copy resulting in a set of materials that are easy to use, read, and reference.

Thanks also goes to all T-Tel staff members who worked to support production of these course manuals, particularly Beryl Opong-Agyei and Gideon Okai. Their frankness and co-operative attitude complimented the team approach used to produce this manual.

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In addition to all the staff who participated visibly in the development of these materials we would like to acknowledge all those people from the many colleges of education and universities in which we have worked who have, directly or indirectly, shared their views on the curriculum with us.

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INTRODUCTION TO COURSE MANUALS

Welcome to this B.Ed. Course manual.

Following the accreditation of the B.Ed. by the national accreditation Board with its recognition as a world class teacher education curriculum, the decision was taken to support effective implementation through the development of course manuals. The course manuals provide tutors and lecturers with the materials necessary to support teaching each of the B.Ed. courses. The manuals adhere directly to, and emphasise, the principles and standards set out in the NTS, NTECF and in the B.Ed. and will help ensure operationalising the Government's teacher education reform Policy.

The manuals serve the following purposes:

- they are the key educational agreements between the training institution and the student teachers. In this way student teachers know what the expectations are for them and for the training they will receive.
- they lay out the course outcomes, content, strategies, and assessment, thereby providing direction to and consistency in training and B.Ed. implementation among tutors across the country.
- they are explicit documents that provide other institutions with information on which to base transfer/ articulation decisions.

Specifically, they also:

- support coherent lesson planning and teaching which will enable student teachers to achieve the NTS and become good teachers who ensure all pupils' learning whilst offering tutors the flexibility for adaptation for local needs and contexts.
- Provide a lesson by lesson overview of the course, building on and developing the material in the course specifications.
- Inform tutors, student teachers and others working with student teachers about:
 1. What is to be taught and why.
 2. how it can be taught.
 3. how it should be assessed.
- Provide opportunities for student teachers to develop and apply knowledge during supported teaching in school, creating a strong bond between learning in school and in the training institution.
- Reflect the stage of student teacher development, set out in the model for progress across the four years of the B.Ed.
- Can be used as self-study tools by student teachers.
- Ensure that all information necessary to inform teacher training is in one place (serves as reference document).
- The manuals are the basis of the codes and university professional development sessions to ensure Principals, tutors, lecturers and heads of department are fully familiar with the details of: courses, outcomes, content, approaches, assessments and lessons.

Who are course manuals for:

- College of Education Tutors
- Teacher Education University Lecturers
- Student Teachers
- Mentors and Lead Mentors
- All Those with An Interested In Teacher Education.

USING THIS MANUAL

Writers of the manuals engaged widely with colleagues in each subject area at each stage of development. Besides, writers envisaged themselves in varied contexts as they wrote, to suggest methodologies and strategies for teaching the strands which would ensure student teachers are enabled to achieve the learning outcomes. In view of our commitment to creativity, problem solving, collaboration and to lifelong learning, we expect that individual tutors will “own” their manuals and become user-developers. Lessons in the manuals will be strands for weekly Pd meetings where tutors/lecturers will situate the lessons in the contexts of their colleges and their student teachers, to maximize the benefits.

It is also expected that tutors will model the best pedagogic practices for student teachers. Key among such practices is the communication of the importance of having a personal teaching philosophy. We expect that tutors and lecturers will explicitly communicate their personal teaching philosophies to their student teachers during the first meeting of every course. In preparation for this, we suggest you set out your personal teaching philosophy and how it will be demonstrated in your teaching using, or adapting, the sample sentence introductions below.

My teaching philosophy is

In view of this philosophy, I will facilitate this course by/through

PEDAGOGY 1

CONTEXT

Learners are assessed for varied purposes including placement, diagnostic and selection. There is therefore, the pivotal need for all student teachers meant for teaching at the primary school level to be abreast of, and equipped with knowledge of the various assessment formats. In many cases much emphasis is placed on traditional assessment modes and objective based assessment to the neglect of authentic or performance assessment. Differentiated assessment to meet varying learning strengths and needs of primary school learners becomes indispensable.

Course Title	Differentiated Assessment for Primary Schools						
Course Code				Course Level: 200	Credit value: 3		Semester 2
Pre-requisite	Introduction to School based Inquiry, Differentiated Learning and Curriculum Planning						
Course Delivery Modes	Face-to-face: [v]	Practical activity[v]	Work-based learning [v]	seminars [v]	Independent Study: [v]	e-learning opportunities[v]	Practicum: []
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	<p>The course is designed to expose student teachers to basic concepts and principles of differentiated assessment of primary school learners as well as managing transition from Upper Primary through to the junior high school level. It is also structured to enable them identify and apply the various forms and types of assessment to address the needs of diverse learners in order to meet the grade level expectations and national assessment benchmarks. Student teachers will also be guided to examine various processes involved in planning and administering assessment in inclusive learning settings and interpret results for instructional decision making. Current naturalistic or authentic assessment processes, assessment tools and building digital and manual portfolios will be explored. In this course, student teachers will be engaged using varying interactive techniques such as demonstrations, play and other age/grade level activities. They will be assessed through, portfolio, projects and assignments among others. These are meant for students teachers to acquire a repertoire of knowledge and skills to enable them apply appropriate techniques, processes and procedures to gather relevant data from differently abled middle childhood learners in inclusive and multi-grade setting in order to support their learning. The course will also explore issues within the context of Ghanaian core values, critical thinking, honesty, commitment and passion, creativity and informed citizenry, digital literacy as well as and lifelong learning (National Teachers' Standard: 1c, 1e, 1f, 1g, 2a/NTECF: crosscutting issues; Core skills, Professional values and attitudes).</p>						
Course Learning Outcomes	On successful completion of the course, student teachers would be able to:				Indicators		
	CLO 1. demonstrate knowledge, understanding of principles of differentiated assessment, basic concepts in assessment such as assessment, testing, measurement and evaluation and the purposes of assessment (NTS 3k, 3l, 3p; NTECF p.46).				<ul style="list-style-type: none"> Examine the principles of differentiated assessment Explain the characteristics of basic concepts such as assessment, test, measurement, and evaluation, as well as the purposes of assessment. Differentiate among assessment, test, measurement, and evaluation. 		
	CLO 2. demonstrate knowledge, understanding and use of assessment for learning/of learning and as learning through projects (NTECF; NTS 3k, 3l, 3m, 3p).				<ul style="list-style-type: none"> Identify the types of assessments Examine what constitutes assessment for learning/of learning and as learning through projects. 		
	CLO 3. demonstrate knowledge and understanding of the grade level expectations and assessment benchmarks for basic schools in Ghana(NTS 3g, 3k, 3l, 3p;NTECF).				<ul style="list-style-type: none"> Outline the grade level expectations for middle childhood learners. Discuss the grade level expectations and assessment benchmarks for upper primary graders in Ghana. 		
	CLO 4. demonstrate understanding and use of comprehensive and appropriate learning objectives and outcomes in relation to the various domains of learning in learning plans(NTECF; NTS 3k, 3l, 3p).				<ul style="list-style-type: none"> Enumerate the criteria in setting learning objectives. Formulate comprehensive and appropriate learning objectives and outcomes in line with the various domains of learning in learning plans. 		
	CLO 5. demonstrate understanding and development of a scoring guide for constructed test items for a				<ul style="list-style-type: none"> Develop a scoring guide for constructed test items (objective and essay type) for a selected 		

	selected topic, and design a table of specification (NTECF; NTS 3f, 3l).		topic.	
	CLO 6. demonstrate understanding and use of procedures for planning inclusive classroom tests and assessments(NTECF; NTS 3f, 3g).		<ul style="list-style-type: none"> Design a table of specification and a scoring guide. Discuss the procedures for planning inclusive classroom tests and assessments. Apply the procedures for planning and designing inclusive classroom tests and assessments. 	
	CLO 7. demonstrate understanding, planning and developing authentic/ performance assessment tasks, considering gender and learners with diverse strengths in inclusive and multi-grade classrooms (NTECF; NTS 3k, 3l, 3p).		<ul style="list-style-type: none"> Explain authentic/performance assessment and discuss the characteristics of the types of authentic/performance assessment tasks. Plan and develop authentic/performance assessment tasks for inclusive and multi-grade classrooms. 	
	CLO 8. demonstrate understanding and use of norm-referenced and criterion-referenced modes of interpreting tests and manage data gathered on various aspects of the learners (NTS 3p).		<ul style="list-style-type: none"> 8.1 Collect data on various aspects of learners with different tools, analyse and use results to support learning of diverse learners. 8.2 Design differentiated assessment for learners with SEN in inclusive settings. 8.3 Demonstrate how norm-referenced and criterion-referenced modes of interpreting tests are used. 	
	Units	Topics:	Sub-topics (if any):	Teaching and learning activities to achieve learning outcomes
Course Content: Differentiated Assessment in Basic Schools	1	Definition of terms and nature of assessment	The concept and principles of differentiated assessment; test; measurement and evaluation; formative and summative evaluation; scales of measurement	Tutor-led discussions on definition and nature of assessment; Individual and group presentations on nature of assessment; Concept mapping/cartooning on meaning and nature of assessment.
	2	Principles, forms and purposes of assessment	General principles of assessment, purposes of assessment; Assessment of Learning (AoL), Assessment as Learning (AaL), Assessment for Learning (AfL);	Teacher-led discussion on the meaning and principles of assessment; Individual and group presentations on purposes of assessment; Individual and group projects on classroom activities that suit assessment of learning (AoL), assessment as learning (AaL), and assessment for learning (AfL).
	3	Types of assessment	Formative assessment; summative assessment; diagnostic assessment; performance assessment; types of formative and summative assessment; characteristics, merits and demerits of continuous assessment; school-based assessment; standards-based assessment; national assessment benchmarks; grade level expectations for basic education in Ghana	Tutor-led discussion on types of assessment; Group presentation and discussion on characteristics, merits and demerits of continuous assessment; Concept mapping/cartooning on school-based, standards-based assessments, and national assessment benchmarks; Tutor-led discussion on grade level expectations for basic education in Ghana.

	4	Taxonomies of educational objectives (revised version by Anderson and Krathwohl, 2001)	The concept of learning outcomes; behavioural objectives; learning objectives; cognitive domain objectives, affective domain objectives and psychomotor domain objectives; the profile dimensions	Tutor-led and student-led discussions on the concept of learning outcomes and types of objectives; Individual and group presentations on cognitive, affective and psychomotor domains; Individual and group projects to design taxonomies of educational objectives.
	5	Item formats	Types of Objective-type tests and essay-type tests; developing tables of specification and scoring guides	Tutor led discussions on types of objective-type-test; Talk for learning approach for types of essay-type test; Individual and group projects on developing tables of specification, test items and scoring guide.
	6	Planning classroom tests and assessment	Types of achievement tests and characteristics; constructing, assembling, administering and appraising of tests	Talk for learning approach for types and characteristics of achievement tests; Tutor-led and student-led demonstrations on constructing, assembling, administering and appraising test items; Reflective notes on planning classroom tests and assessment.
	7	Assessment procedures for inclusive classrooms	The concept authentic/performance assessment; principles of fair assessment; learning stories approach, socio-cultural approach; using types of observation, check lists, rating scales, clinical interviews, conversation, gallery work; project development; task analysis; building portfolios	Concept mapping/cartooning for meaning and characteristics of the types of authentic or performance assessment; Group presentations of how to plan and develop authentic/performance assessment tasks for inclusive and multi-grade classrooms.
	8	Data presentation and Interpretation of tests and authentic assessment data	Descriptive statistics; Norm-referenced and criterion criterion-referenced interpretation of data; validity and reliability issues; types of feedback and how to use feedback	Tutor-led discussion on interpretation of results from norm-referenced and criterion-referenced tests; Student-led demonstration on how norm-referenced and criterion-referenced modes of interpreting tests are used
Course Assessment (Educative assessment: of, for and as learning)	<p>¹Component 1: Subject Portfolio Assessment (30% overall score)</p> <ul style="list-style-type: none"> Selected items of students work (3 of them -10% each) = 30% Midterm assessment = 20% Reflective Journal = 40% Organisation of the subject portfolio = 10% (how it is presented /organised) <p>NOTE Review the upper primary basic school curriculum, create a wall chart which maps out the grade level expectations and assessment bench marks for UP students, focus on the core subjects of English maths and science. Write a short report which demonstrates your understanding of what these mean in practice for the P5 teacher. Weighting: 30% Assesses Learning Outcomes: CLO 1 CLO 2 and CLO 3</p>			

¹See rubrics on Subject Portfolio Assessment in Annex 6 of NTEAP

	<p>²Component 2: Subject Project: (30% overall semester score)</p> <ul style="list-style-type: none"> • Introduction, a clear statement of aim and purpose of the project = 10% • Methodology: what the student teacher has done and why to achieve the purpose of the project = 20% • Substantive or main section = 40% • Conclusion = 30% <p>NOTE Peer assessment of group projects and presentations writing objectives across domains, designing table of specification and writing test items on selected topics in their specialisms, demonstration and individual/group presentations on planning, conducting and interpreting tests in inclusive and multi-grade classroom (soft skills to be developed include: honesty, digital literacy, respect for diversity, critical thinking) Assesses Learning Outcomes: CLO 4 CLO 5 CLO 6 CLO 7</p> <p>Component 3: End of Semester Exams 40%</p> <p>NOTE Summary of Assessment Method: End of semester examination on nature of assessment, principles, purposes and types of assessment; designing table of specification and writing test items; conducting and interpreting tests. Weighting: 40% Assesses Learning Outcomes: CLO 1,2,3,4,5,6,7,8</p> <ol style="list-style-type: none"> 1. TESSA Online Educational Resources (www.tessafrica.net) 2. T-TEL Modules (www.t-tel.org). 3. Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) 4. The iBox (CENDLOS) 5. YouTube
Required Text (Core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students' achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. 'N' B. Publishers.</p>

²See rubrics on Subject Project Assessment in Annex 6 of NTEAP

Lesson 1

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Principles and nature of differentiated assessment				Lesson Duration	3 Hours	
Lesson description	The lesson is meant to prepare student teachers to demonstrate knowledge and understanding of the principles of differentiated assessment and basic concepts in assessment such as assessment, testing, measurement and evaluation and the purposes of assessment. It aims to assist them to apply these principles to assesses students in different context and prepare them for the Junior High School education.						
Previous student teacher knowledge, prior learning (assumed)	Student teachers have observed their mentors assessing students during supported teaching in schools. This first lesson introduces student teachers to the course learning outcomes and the 3 assessment components of the course.						
Possible barriers to learning in the lesson	Student teachers may not have been practically involved in assessment during the STS and may have misconceptions about assessment. The have also taken a course in inclusive school-based inquiry and psychology to enable them appreciate the differences in learner characteristics and interest and readiness.						
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [√]	Practical Activity	Work-Based Learning	Seminars [√]	Independent Study [√]	e-learning opportunities [√]	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	Face-to-face – Discussion; Concept mapping/cartooning on meaning and nature of assessment. e-learning opportunities – the use of on-line resources and digital devices. Seminars: student and /or tutor led discussion and reflections from STS experiences. Independent study: Individual and group presentations on nature of assessment						
<ul style="list-style-type: none"> Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	Demonstrate an understanding of the principles and concepts of differentiated assessment in upper primary schools(NTS 3k, 3l, 3p; NTECF p.46).						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes	Learning Indicators			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?		
	CLO 1. Demonstrate knowledge, understanding of basic principles and concepts in differentiated assessment such as assessment, testing, measurement and evaluation and the purposes of assessment (NTS 3k, 3l, 3p; NTECF p.46).	<ul style="list-style-type: none"> Analyse the principles of differentiated assessment Explain the characteristics of basic concepts such as assessment, test, measurement, and evaluation, as well as the purposes of assessment. Differentiate among assessment, test, 			Communication skills: through individual and group presentations Digital literacy: the use of on-line resources and digital devices. Personal development: Through presentation and developing of arguments. Equity and inclusivity: using various types of groups mixed		

			measurement, and evaluation.	gender/ability etc and gender sensitive interactive strategies and illustrations in assessment.
Topic Title: Principles and nature of differentiated assessment	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction to the course manual	20 minutes	Face-to-face: Introduce student teachers to the Course Manual and discuss the various components including assessment procedures	Face-to-face: Participate in the discussion of various components of the course manual, take opportunity to ask questions about the Course Manual including assessment procedures. Outline their expectations and views about the mathematics course.
	Meaning and principles of differentiated assessment	20 minutes	Reviews RPK through questioning on how they observed their mentors assess learners during their STS and why assessment should be differentiated.	Share experiences on how mentors assessed learners during STS. Provide responses on why assessment should be differentiated drawing on their STS experiences and knowledge in psychology.
	Identification and explanation of characteristics and basic concepts	20 minutes	Guide student teachers to use their phones to search for the meaning of differentiated assessment or guide them by providing prompts from their supported teaching experiences. Let tutors think-pair and share Their views on the principles of differentiated assessment.	Use phones to search for the meaning of differentiated assessment or reflect on prompts provided or respond Pairs share their views on principles of differentiated assessment Engage in discussion of concepts.
Differences among assessment, test, measurement, and evaluation.	1 hour	Independent learning Student teachers are assigned into four groups (mixed gender/ability) for group research on assessment, test, measurement, and evaluation and present in class	Independent learning Student teachers participate actively in groups and present their report.	

	Age appropriate differentiated assessment and purposes of assessment	50 minutes	Seminar: Use pyramid discussions to generate interactions on purposes of age appropriate assessment citing illustrations from STS experiences.	Seminar: Shares experiences with based on STS experiences
	Closure	10 minutes	Review key concepts through questions and answers and summarise lesson	Participate in review of lesson by responding to questions.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	In-lesson Assessment: individual and group presentation on principles and nature of differentiated assessment, conceptual distinctions and purposes of assessment. CLO 1 NTS h) Sets meaningful tasks that encourages learner collaboration and leads to purposeful learning. i) Explains concepts clearly using examples familiar to students. j) Produces and uses a variety of teaching and learning resources including ICT, to enhance learning.			
Instructional Resources	<ol style="list-style-type: none"> 1. TESSA Online Educational Resources (www.tessafrica.net). T-TEL Modules (www.t-tel.org). 2. Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) 3. The iBox (CENDLOS) 4. YouTube 			
Required Text (core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P. & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>			
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students' achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. 'N' B. Publishers.</p>			
CPD needs	E-Assessment in Primary Schools. Principles and nature of differentiated assessment			

Lesson 2

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Principles, forms and purposes of assessment for/of and as learning				Lesson Duration	3 Hours	
Lesson description	The lesson seeks to explore the principles and purpose of different forms of assessment of primary school learners as well as managing transition from Upper Primary through to the junior high school level. The purpose is to assist the students to appreciate all the principles that guides how assessment is conducted and how it is used to support the teaching and learning process especially for students with diverse needs.						
Previous student teacher knowledge, prior learning (assumed)	Student teachers have observed their mentors using different forms of assessment during supported teaching in schools. They have also taken a lesson in basic concepts of assessment.						
Possible barriers to learning in the lesson	Misconceptions about assessment						
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [v]	Practical Activity [v]	Work-Based Learning	Seminars [v]	Independent Study	e-learning opportunities	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face: Discussion, lecturette, think, pair share should be used in facilitating lessons.</p> <p>Seminar: Student teachers work on topics either individually or in groups for presentations on factors that influence curriculum development in Ghana</p> <p>Practical activity: Students are asked to study the B4-B6 curriculum and identify the various assessment components.</p>						
Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed	Demonstrate knowledge and understanding of principles and purposes of assessment. (NTECF; NTS 3k, 3l, 3m, 3p).						
Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome	Learning Outcomes		Learning Indicators		Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?		
	CLO 2. demonstrate knowledge, understanding and use of assessment for learning/of learning and as learning through projects (NTECF; NTS 3k, 3l, 3m, 3p).		<ul style="list-style-type: none"> Differentiate among the forms of assessment: Assessment of Learning (AoL), Assessment as Learning (AaL), Assessment for Learning (AfL); Discuss the purposes of the various forms of assessment; Create various assessment activities under the different forms of assessment Use different forms of assessment during STS and child study. 		<p>Communication skills: through questions and answers.</p> <p>Digital literacy: Surfing the internet for relevant information on themes to be discussed.</p> <p>Personal development: Through seminar discussions.</p> <p>Equity and inclusivity: application of principles to design assessment for various primary pupils with diverse learners</p> <p>Critical thinking: create varying forms of assessment</p>		

Topic Title: Principles and purposes of assessment	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	General principles of assessment	20 minutes	Face-to-face Explores RPK through questioning. Tutor guides students to review basic concepts in assessment. (PD theme 2)	Face-to-face Provides relevant responses for questions
		30 minutes	Face-to-face <ul style="list-style-type: none"> Teacher-led discussion using think, pair share on the meaning and three forms of assessment; Teacher lead class to examine the differences among the forms assessment. 	Face-to-face Participate in discussions through questions and answers base on their STS experiences.
	Purposes of assessment; Assessment of Learning (AoL), Assessment as Learning (AaL), Assessment for Learning (AfL);	1 hour	Practical activity and seminar Put student into small groups and guide purposes of the assessment: forms Assessment of Learning (AoL), Assessment as Learning (AaL), Assessment for Learning (AfL); Let groups present on purposes of assessment. Move round various groups to provide support where necessary (PD theme 4)	Practical activity Student teachers Work in their groups to examine purpose of assessment Groups present findings to whole class
		1 hour	Practical activity and Seminar Guide student teachers to work in their small mixed ability groups to create various activities of the assessment forms under selected topics from the upper primary Guide them to examine the assessment practices provided in the syllabuses and critique. This should be presented in the next lesson	Seminar Randomly selected groups present to the whole class. Groups compare with what they have and critique. Work in their small mixed ability groups to examine assessment practices provided in the upper primary curriculum and present during the next lesson.
	Closure	10 minutes	Review key aspects and summarise lesson through questions and answers	Respond to questions to review lesson

<p>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</p>	<p>In-lesson Assessment: Peers Review of group presentation for other members to ask questions and contribute to discussion.</p> <p>Component 1: Formative Assessment</p> <p>Group work on examining assessment practices under AaL, AfL and AoL provided in the syllabus under various topics and corresponding indicators to be addressed should be presented and scored to count towards grading in the 5th week. CLO 2</p> <p>NTS</p> <p>k) Integrates a variety of assessment modes into teaching to support learning.</p> <p>l) Listens to learners and gives constructive feedback.</p> <p>m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher.</p> <p>n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners.</p> <p>o) Demonstrates awareness of national and school learning outcomes of learners.</p> <p>p) Uses objective criterion referencing to assess learners.</p>
<p>Instructional Resources</p>	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • Primary school Curriculum and syllabuses
<p>Required Text (core)</p>	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>
<p>Additional Reading List</p>	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students’ achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. ‘N’ B. Publishers.</p>
<p>CPD needs</p>	<p>The Pre-tertiary Curriculum and its assessment components.</p>

Lesson 3

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Types of assessment				Lesson Duration	3 Hours	
Lesson description	This lesson aims to prepare students to demonstrate knowledge and understanding of the grade level expectations and assessment benchmarks for basic schools in Ghana. It is also structured to enable them identify and apply the various types of assessment to address the needs of diverse learners in order to meet the grade level expectations and national assessment benchmarks.						
Previous student teacher knowledge, prior learning (assumed)	Student teachers have knowledge and understanding of the principles and purpose of assessment. Moreover, they had the opportunity of embarking on STS activities which exposed them to the primary school curriculum and its assessment components.						
Possible barriers to learning in the lesson	Students have not prepared test items before.						
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [✓]	Practical Activity [✓]	Work-Based Learning	Seminars [✓]	Independent Study [✓]	e-learning opportunities [✓]	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face – Discussion, lecturette, think, pair share should be used in facilitating lessons on types of assessment.</p> <p>e-learning opportunities – use mobile phones and other digital devices to look for information online for presentations on types of assessment.</p> <p>Independent study: student teachers engage with relevant and appropriate curriculum to identify various types of assessment.</p> <p>Practical Activity: Group presentation and discussion on characteristics, merits and demerits of the various types of assessment.</p>						
<ul style="list-style-type: none"> • Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. • Write in full aspects of the NTS addressed 	demonstrate knowledge and understanding of the types of assessment and assessment benchmarks for basic schools in Ghana (NTS 3g, 3k, 3l, 3p; NTECF).						
<ul style="list-style-type: none"> • Learning Outcome for the lesson, picked and developed from the course specification • Learning indicators for each learning outcome 	Learning Outcomes	Learning Indicators			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?		
	CLO 3. demonstrate knowledge and understanding of types of assessment and the grade level expectations and assessment benchmarks for basic schools in Ghana (NTS 3g, 3k, 3l, 3p; NTECF).	<ul style="list-style-type: none"> • Distinguish between formative and summative assessment • Examine the characteristics of diagnostic assessment; school-based assessment; and standards-based assessment • Discuss the merits and demerits of the continuous assessment 			Communication skills: through group presentations Digital literacy: Surfing the internet for relevant information on themes to be discussed. Personal development: Appreciation of		

			<ul style="list-style-type: none"> Examine the differences between the former objective-based and current standards based primary curriculum. Discuss the grade level expectations and assessment benchmarks for upper primary pupils in Ghana. Discuss the advantaged and challenges in the use of standards based assessment in Ghana and how they can be addressed 	assessment in educational delivery Respect and diversity: Designing Assessment for all primary students with diverse background for Diversity, Equity and inclusivity
Topic Title: Types of assessment	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction to types of assessment.	40 minutes	Face-to-face <ul style="list-style-type: none"> Reviews RPK using questioning to explore student teachers understanding(PD theme 2) Select groups at random to present last week's assignment. Let them use comments to revise work for final submission for scoring in week five 	<ul style="list-style-type: none"> Provide relevant answersto questions posed. Present last week's assignment and revise for submission in week 5 for scoring
	Formative assessment and types of formative assessment	40 minutes	e-learning opportunities: Guides students to use mobile phones and other digital devices to look for information online on formative assessment and types of formative assessment and share their answers in class. Guide them to provide relevance examples from their experience during STS	e-learning opportunities: Student teachers use mobile phones and other digital devices to look for information online on formative assessment and types of formative assessment and share their answers in class. Share some experience from STS
	Characteristics, merits and demerits of continuous assessment	40 minutes	Face-to-face Leads discussion on meaning and characteristics of continuous assessment. Guide student teachers to search for information using their phones Use pyramid discussion to initiate discussion on merits and demerits. Let two big groups formed from the pyramid appoint representatives to debate	Face-to-face Search for information on meaning of CA using their phones and share Two big groups formed from the pyramid appoint representatives to debate merits and demerits: Whether CA is necessary or unnecessary
	Objective based and standards based curriculum	30 minutes	Practical Activity: Leads discussionsusing concept mapping/cartooning and assist students to work in pairs or small mixed ability groups on similarities and differences between the Objective based and standards based curriculum and present to class random. Soft copies or hard copies of the curricula should be made	Practical Activity: Student teachers work in pairs or small groups on assigned task and share their answers.

			available to students (PD theme 2, 3, 4)	
	Grade level expectations for upper primary pupils and national assessment benchmarks	10 minutes	Guides student teachers to go through the primary curriculum identify and share the grade expectations for upper primary pupils and national assessment benchmarks	Go through primary curriculum to identify and share grade expectations for upper primary learners and national assessment benchmarks
	Strengths and challenges of the use of standards based curriculum in Ghana and how they can be addressed	15 minutes	Put student teachers into pairs or smaller groups to start working on Strengths and challenges of the use of standards based curriculum in Ghana and how they can be addressed. Let them share preliminary ideas and present full details in next lesson	Work in pairs or smaller groups on Strengths and challenges of the use of standards based curriculum in Ghana and how they can be addressed. Share preliminary ideas and present full details in next lesson
	Closure	5 minutes	Review key points through questions and answers	Provide responses for review of key point in the lesson.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<p>In-lesson Assessment: Group presentation on various tasks assigned during the lesson. CLO 3</p> <p>NTS</p> <p>k) Integrates a variety of assessment modes into teaching to support learning.</p> <p>l) Listens to learners and gives constructive feedback.</p> <p>m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher.</p> <p>n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners.</p> <p>o) Demonstrates awareness of national and school learning outcomes of learners.</p> <p>p) Uses objective criterion referencing to assess learners.</p>			
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • 			
Required Text (core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>			
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p>			

	<p>Gronlund, E. (2003). <i>Assessment of students' achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. 'N' B. Publishers.</p>
CPD needs	The Pre-tertiary curriculum Curriculum and its assessment components.

Lesson 4

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Taxonomies of educational objectives (Revised version by Anderson and Krathwohl, 2001)					Lesson Duration	3 Hours
Lesson description	This lesson aims to prepare students to demonstrate understanding and use of comprehensive and appropriate learning objectives and outcomes in relation to the various domains of learning in learning plans. It is planned to assist student teachers to appreciate criteria in writing learning objectives in their learning plans to enable them provide or develop appropriate assessment practices to address indicators/objectives in the curriculum during STS						
Previous student teacher knowledge, prior learning (assumed)	Student teachers had the opportunity of embarking on STS activities which exposed them to primary school curriculum and lesson plans.						
Possible barriers to learning in the lesson	Students have not prepared lesson plan before						
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [<input checked="" type="checkbox"/>]	Practical Activity [<input checked="" type="checkbox"/>]	Work-Based Learning	Seminars [<input type="checkbox"/>]	Independent Study [<input checked="" type="checkbox"/>]	e-learning opportunities [<input type="checkbox"/>]	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face – Discussion, lecturette, think, pair share should be used in facilitating lessons on concept of learning outcomes and types of objectives.</p> <p>Independent study: student teachers engage with relevant and appropriate curriculum to identify and make presentations on cognitive, affective and psychomotor domains.</p> <p>Practical Activity: Group presentation and discussion on projects to design taxonomies of educational objectives.</p>						
<ul style="list-style-type: none"> Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	demonstrate understanding and use of comprehensive and appropriate learning objectives (NTECF; NTS 3k, 3l, 3p).						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes	Learning Indicators			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?		
	CLO 4. demonstrate understanding and use of comprehensive and appropriate learning objectives and outcomes in relation to the various domains of learning in learning plans(NTECF; NTS 3k, 3l, 3p).	<ul style="list-style-type: none"> Enumerate the criteria in setting learning objectives. Formulate appropriate learning objectives and outcomes under the various domains of learning in learning plans. 	Communication skills: through group presentations Personal development: Learning about different domains. Respect and diversity:				

			Learning objectives and outcomes in line with the various domains of learning in learning plans. Develop critical thinking skills when developing assessment practices to address indicators/expectations or objectives in the curriculum	
Topic Title: Taxonomies of educational objectives	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction	20 minutes	Face-to-face Select groups randomly to present last week's assignment. Reviews RPK using questions and answers on their experiences with STS and their observations about lesson plans they came in contact with. (PD theme 2)	Selected groups present last week's assignment. Provide relevant answers to questions posed and applying the knowledge gained during STS.
	The concept of learning outcomes and types of objectives (behavioural and learning)	40 minutes	Face-to-Face: Leads discussions using concept mapping/cartooning and assist students to appreciate the concept of learning outcomes and types of objectives; (PD theme 2, 3, 4). Students are grouped into mixed ability and discusses the types of objectives	Face-to-Face: Student teachers participate in lesson and use their STS experience to answer questions Students participate in groups and share their STS experiences.
	Types of Domains (cognitive, affective and psychomotor)	60 minutes	Independent Study: Individual study and group presentations on cognitive, affective and psychomotor domains (PD theme 2, 3, 4). Students are grouped into mixed ability and discusses the various domains	Independent Study: Student teachers participate in group activities
	Educational Objectives (cognitive domain objectives, affective domain objectives and psychomotor domain objectives)	50 minutes	Practical Activity: Teacher provides and discusses samples of educational objectives/indicators from the Pre-tertiary curriculum. Student are supported in groups of mixed ability to work on projects to write indicators/ objectives for selected topics	Practical Activity: Students participate in groups and share what they have written.
	Closure	10 minutes	Review key points and summarise lesson through questions and answers. Give a reading assignment on stages in classroom testing	Respond to questions to review key points

Lesson assessments – evaluation of learning: of, for and as learning within the lesson	In-lesson Assessment: Group presentation of assigned tasks during lessons CLO 4 Component 1: Continuous Assessment Student work on writing indicators for selected topics and assessment practices (AoL, AaL, AfL) that can be used to address the indicators to be submitted in the 5 week for scoring.
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy)
Required Text (core)	Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i> . Cape Coast. Institute of Education. Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i> . Cape Coast: Yaci Publications Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i> . Accra: Black Mask Ltd
Additional Reading List	Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co. Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc. Archer, F. K. (2002). <i>Measurement and evaluation in education</i> . Kumasi: Paks. Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i> . New York: Sage Publication. Carey, L. M. (2001). <i>Measuring and evaluating school learning</i> . Boston: Allyn Bacon. Gronlund, E. (2003). <i>Assessment of students' achievement</i> . (7th ed.). Boston: McGrawHill. Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall. Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i> . Accra: K. 'N' B. Publishers.
CPD needs	The Upper Primary Curriculum

Lesson 5

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Stages in classroom testing I			Lesson Duration	3 Hours		
Lesson description	This lesson aims to prepare students to demonstrate understanding and use of the various principles used in writing test items. The course also plans to assist students to develop capacity to design a table of specification in item construction and test scoring guide for constructed test items for a selected topic. This will equip them with skills to enable them write good test items that word address indicators						
Previous student teacher knowledge, prior learning (assumed)	Student teachers had the opportunity of embarking on STS activities which exposed them to primary school curriculum and exercises set by teachers.						
Possible barriers to learning in the lesson	Students may have phobia for tests and exams from their previous experiences.						
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [v]	Practical Activity [v]	Work-Based Learning	Seminars []	Independent Study [v]	e-learning opportunities []	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face – Discussion, lecturette, think, pair share should be used in facilitating lessons on concept of learning outcomes and types of objectives.</p> <p>Independent study: student teachers engage with relevant and appropriate curriculum to identify and make presentations on cognitive, affective and psychomotor domains.</p> <p>Practical Activity: Group presentation and discussion on projects to design taxonomies of educational objectives.</p>						
<ul style="list-style-type: none"> Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	<p>Demonstrate understanding and use of the various principles used in constructing test items and how to score/grade test. (NTECF; NTS 3f, 3I).</p>						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes	Learning Indicators			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?		
	CLO 5. demonstrate understanding and development for designing a table of specification, constructing test items for a selected topic, and a scoring guide (NTECF; NTS 3f, 3I).	<ul style="list-style-type: none"> Follow guidelines for developing various item formats Develop various item formats for assessing upper primary learners during STS Construct and scoring test items 			<p>Communication skills: through group presentations</p> <p>Personal development: Learning about different domains.</p> <p>Respect and diversity: Learning objectives and outcomes in line with the various domains of learning in learning plans.</p> <p>Critical thinking developed during test item writing.</p>		

Topic Title: Item Format	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction	20 minutes	Face-to-face Reviews RPK using questions and answers on their experiences with STS and their observations about lesson plans they came in contact with. (PD theme 2)	Provide relevant answers to questions posed and applying the knowledge gained during STS.
	Constructing the test	60 minutes	Face-to-face & group activity Use Lecturette to introduce basic stages in test construction: Constructing the test Administering the test Scoring the test Analyzing the test item Take student teachers through the first stage: principles of test construction Put student teachers into small groups, assign a principle to each group and guide them to work on what goes into each. Let them present their findings while you expand areas that need clarification such as developing table of specification underdetermining what is to be tested.	Face-to-face & group activity Listen carefully noting the stages and ask questions where necessary. Work in small groups, on a principle. Present findings to whole class. Note additions and expansions made by tutor
	Type of tests: Types of Objective-type tests	60 minutes	Face-to-Face & practical activity Leads discussion on types of objective-type tests and guidelines for constructing each (PD theme 2, 3, 4). Types are: Selection type (Multiple choice, true or false, matching) Supply type (sentence completion, fill in the blank, short answers)	Face-to-Face & practical activity Participate in activities by listening to directives from tutor.
		15 minutes	Practical activity Let student teachers work in pairs to develop 2 items under each of the types using the guide lines. Topics should be	Practical activity Work in pairs to develop 2 items under each of the types using the guide lines. Exchange for peer assessment and comments

			selected from the subjects in the pre-tertiary upper primary curriculum Let them exchange for peer assessment and comments	
		15 minutes	Face-to-face Lead discussion on strength and weaknesses of objective type tests	Face-to-face Take part in discussing strength and weaknesses of objective type tests
	Conclusion	10 minutes	Give project to be presented the following week. Let students work in pairs to create 5 items under each type. Topics should be selected from subjects in the pre-tertiary upper primary curriculum. Review key concepts and summarise lesson	Work on project in pairs to be presented the following week. Let students work in pairs to create 5 items under each type Respond to questions to review lesson
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<p>In-lesson Assessment: Group presentation tasks assigned in the course of the lesson. CLO 5</p> <p>Semester project to be part of portfolio to be scored</p> <p>Work in pairs to Develop 10 objective test items (with all types) and 3 essay types items with their scoring guides (marking schemes).</p> <p>NTS 3</p> <p>k) Integrates a variety of assessment modes into teaching to support learning.</p> <p>l) Listens to learners and gives constructive feedback.</p> <p>m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher.</p> <p>n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners.</p> <p>o) Demonstrates awareness of national and school learning outcomes of learners.</p> <p>p) Uses objective criterion referencing to assess learners.</p>			
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • 			
Required Text (core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>			
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p>			

	<p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students' achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. 'N' B. Publishers.</p>
CPD needs	Item construction

Lesson 6

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Stages in classroom testing 2				Lesson Duration	3 Hours
Lesson description	This lesson aims to prepare students to demonstrate understanding and use of the various principles used in writing test items. The course also plans to assist students to develop capacity to design a table of specification in item construction and test scoring guide for constructed test items for a selected topic. This will equip them with skills to enable them write good test items that word address indicators					
Previous student teacher knowledge, prior learning (assumed)	Student teachers had the opportunity of embarking on STS activities which exposed them to primary school curriculum and exercises set by teachers.					
Possible barriers to learning in the lesson	Students may have phobia for tests and exams from their previous experiences.					
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [✓]	Practical Activity [✓]	Work-Based Learning	Seminars []	Independent Study [✓]	e-learning opportunities []
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face – Discussion, lecturette, think, pair share should be used in facilitating lessons on concept of learning outcomes and types of objectives.</p> <p>Independent study: student teachers engage with relevant and appropriate curriculum to identify and make presentations on cognitive, affective and psychomotor domains.</p> <p>Practical Activity: Group presentation and discussion on projects to design taxonomies of educational objectives.</p>					
<ul style="list-style-type: none"> • Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. • Write in full aspects of the NTS addressed 	demonstrate understanding and use of the various principles used in constructing test items and how to score/grade test. (NTECF; NTS 3f, 3l).					
<ul style="list-style-type: none"> • Learning Outcome for the lesson, picked and developed from the course specification • Learning indicators for each learning outcome 	<p>Learning Outcomes</p> <p>CLO 5. demonstrate understanding and development for designing a table of specification, constructing test items for a selected topic, and a scoring guide (NTECF; NTS 3f, 3l).</p>	<p>Learning Indicators</p> <ul style="list-style-type: none"> • Follow guidelines for developing various item formats • Develop various item formats for assessing upper primary learners during STS • Construct, administer and scoring test items 	<p>Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?</p> <p>Communication skills: through group presentations Personal development: Learning about different domains. Respect and diversity: Learning objectives and outcomes in line with the various domains of learning in learning plans. Critical thinking developed during test item writing.</p>			

Topic Title: Item Format	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
			Introduction	30 minutes
Type of tests: Essay-type tests	40 minutes	<p>Face-to-Face & practical activity Leads discussion on essay-type tests and guidelines for constructing them(PD theme 2, 3, 4).</p>	<p>Face-to-Face & practical activity Participate in activities by listening to directives from tutor.</p>	
	30 minutes	<p>Practical activity Let student teachers work in pairs to develop 4 items under each of the types using the guide lines. Select topic from subjects in the upper primary Let them exchange for peer assessment and comments</p>	<p>Practical activity Work in pairs to develop 4 items under each of the types using the guide lines. Exchange for peer assessment and comments</p>	
	20 minutes	<p>Face-to-face Lead discussion on strength and weaknesses of essay type tests</p>	<p>Face-to-face Take part in discussing strength and weaknesses of essay type tests</p>	
Administering and scoring the test	40 minutes	<p>Face-to-face and practical activity Explore student teachers STS experiences on how assessment is administered in their schools of practice. Use any appropriate talk for learning approach to discuss how assessment should be administered (PD theme 3)</p> <p>Through questioning examine student teachers' knowledge on how tests administered are scored.</p> <p>Guide them to identify and examine the strength and weaknesses each of the two types of scoring rubrics using pyramid discussion: Analytic scoring rubrics Holistic scoring rubrics</p> <p>Representatives of the two</p>	<p>Face-to-face and practical activity Take part in discussions on how assessment should be administered drawing experiences from STS (PD theme 3)</p> <p>Identify and examine the strength and weaknesses each of the two types of scoring rubrics using pyramid discussion: Analytic scoring rubrics Holistic scoring rubrics</p> <p>Representatives of the two large groups formed from the pyramid should present work done for comments</p>	

			large groups formed from the pyramid should present work done	
	Conclusion	20 minutes	Give project to be presented the following week. Let students work in pairs to create 5 items under each type Review key concepts and summarise lesson	Work on project in pairs to be presented the following week. Let students work in pairs to create 5 items under each type Respond to questions to review lesson
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<p>In-lesson Assessment: Group presentation tasks assigned in the course of the lesson. CLO 5 Tasks on objectives and essay test items constructed and peer assessed will be part of portfolio to be assess. Topic treated will be part of quiz in week 9.</p> <p>NTS 3</p> <p>k) Integrates a variety of assessment modes into teaching to support learning. l) Listens to learners and gives constructive feedback. m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher. n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners. o) Demonstrates awareness of national and school learning outcomes of learners. p) Uses objective criterion referencing to assess learners.</p>			
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • 			
Required Text (core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>			
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students’ achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. ‘N’ B. Publishers.</p>			
CPD needs	Item construction			

Lesson 7

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Planning classroom tests and assessment: Characteristics of Tests				Lesson Duration	3 Hours	
Lesson description	The lesson is designed to expose student teachers to the basic characteristics of tests. This entails the determination of the reliability of validity of tests conducted to enable it generated the kind of evidences required to for meaningful decision making in diverse learning environments. This will thus equip student teachers with the skills required to construct objective and essay type test that measures what they are supposed to measure in upper primary learning environments.						
Previous student teacher knowledge, prior learning (assumed)	Student teachers know, understand and can write test items. They have also observed the administration and scoring of test items in their schools of practice.						
Possible barriers to learning in the lesson	Student may not understand the how to determine the reliability and validity of test items.						
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [√]	Practical Activity [√]	Work-Based Learning	Seminars []	Independent Study [√]	e-learning opportunities []	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face: Discussion, lecturette, think, pair share should be used in facilitating lessons on various inclusive settings in the classroom.</p> <p>Independent study: student teachers engage with relevant and appropriate curriculum and discusses the procedures for planning inclusive classroom tests and assessments.</p> <p>Practical Activity: Group presentation on procedures for planning inclusive classroom tests and assessments.</p>						
<ul style="list-style-type: none"> • Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. • Write in full aspects of the NTS addressed 	<p>Demonstrate the understanding of the planning process in assessment taking into consideration the diverse group of learners and the reliability and validity of assessment procedures (NTECF; NTS 3f, 3g, k, l, n, m, o, p).</p>						
<ul style="list-style-type: none"> • Learning Outcome for the lesson, picked and developed from the course specification • Learning indicators for each learning outcome 	Learning Outcomes		Learning Indicators			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?	
	CLO 6. Demonstrate the understanding of the planning process in assessment taking into consideration the diverse group of learners and the reliability and validity of assessment procedures (NTECF; NTS 3f, 3g, k, l, n, m, o, p).		<ul style="list-style-type: none"> • Explain the concepts reliability and validity • Examine the factors that improve and influence reliability and validity of tests • Apply basic methods for estimating reliability of tests 			Communication skills: through group presentations Personal development: individual and group presentations Respect and diversity: construct test to assess learners with different	

			<p>in upper primary learning environment</p> <ul style="list-style-type: none"> Examine the factors that improve and influence validity of tests Analyse the categories of validity evidences and apply them decision making during STS 	<p>characteristics</p> <p>Critical thinking: developing test items for learner with different characteristics</p>
<p>Topic Title: Planning classroom tests and assessment: characteristics of tests</p>	<p>Sub-topic</p>	<p>Stage/time</p>	<p>Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.</p>	
			<p>Teacher Activity</p>	<p>Student Activity</p>
	<p>Introduction</p>	<p>30 minutes</p>	<p>Review student teachers RPK through questions. Guide them to exchange last week's assignment amongst themselves and mark. Link comments to the days lesson</p>	<p>Exchange last week's assignment amongst yourself and mark.</p>
		<p>20 minutes</p>	<p>Face-to-face and e-learning Uses lecturette to introduce topic. Guides student teachers to use their phones in searching for the meaning of reliability and validity. Let them share their findings</p>	<p>Face-to-face and e-learning Participate in discussion and use phones in searching for the meaning of reliability and validity. Share your findings</p>
		<p>30 minutes</p>	<p>Practical activity & independent learning Guides student teachers to think-pair and share their views on factors that improve and influence reliability of tests. Draw on their experiences from STS. Select pairs at random for them to share their findings and make inputs to enrich discuss.</p>	<p>Practical activity & independent learning think-pair and share views on factors that improve and influence reliability of tests. Draw on your experiences from STS. Selected pairs share their findings</p>
		<p>40 minutes</p>	<p>Face-to-face and independent learning Use lecturette to introduce and explain the basic methods for estimating reliability of tests in upper primary learning environment: Test-retest method Equivalent forms method Split half method Use case studies and practical illustrations to stimulate discussions on how methods are applied</p>	<p>Face-to-face and independent learning Examines cases provided to explain illustrate and stimulate discussions on how methods are applied in upper primary classrooms</p>
	<p>30 minutes</p>	<p>Practical activity</p> <ul style="list-style-type: none"> Guides student teachers to think-pair and share their views on factors that improve and influence validity of tests. Draw on their experiences from STS. Select pairs at random for them to share their findings and make inputs to enrich discuss. 	<p>Practical activity</p> <ul style="list-style-type: none"> think-pair and share views on factors that improve and influence validity of tests. Draw on experiences from STS. Selected pairs share their findings 	

		25 minutes	Face-to-face and independent learning Use lecturette to introduce and explain the categories of validity evidences and how to apply them in decision. They are: Content-related validity evidence Criterion-related validity evidence Construct-related validity evidence Use case studies and practical illustrations to stimulate discussions on how methods are applied.	Face-to-face and independent learning Participate in discussing The various validity evidences using case studies and practical illustrations
		5 minutes	Review key issues in the lesson and summarise	Provide response to questions posed during review and summary of lessons.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	In-lesson Assessment: in lesson tasks on item analysis. CLO 6 Topic treated will be assessed as part of a quiz in week 9. NTS 3 k) Integrates a variety of assessment modes into teaching to support learning. l) Listens to learners and gives constructive feedback. m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher. n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners. o) Demonstrates awareness of national and school learning outcomes of learners. p) Uses objective criterion referencing to assess learners.			
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) 			
Required Text (core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>			
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students’ achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. ‘N’ B. Publishers.</p>			

CPD needs	Determining reliability and validity of test items
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Lesson 8

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12 3 4 5 6 7 8 9 10 11 12		
Title of Lesson	Planning classroom tests and assessment: Analysing Test Results			Lesson Duration	3 Hours		
Lesson description	The lesson is designed to expose student teachers to test results can be analysed for decision making. This will thus equip student teachers with the skills items in tests and how they functioned. It will also aid in determining the difficulty of a test based on scores awarded to enable student teachers write and administer age appropriate assessment for learners in upper primary.						
Previous student teacher knowledge, prior learning (assumed)	Student teachers know, understand and can write test items. They have also observed the administration and scoring of test items in their schools of practice.						
Possible barriers to learning in the lesson	Student may not have the skills in analysing test items.						
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [<input checked="" type="checkbox"/>]	Practical Activity [<input checked="" type="checkbox"/>]	Work-Based Learning	Seminars []	Independent Study [<input checked="" type="checkbox"/>]	e-learning opportunities []	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face: Discussion, lecturette, think, pair share should be used in facilitating lessons on various inclusive settings in the classroom.</p> <p>Independent study: student teachers engage with relevant and appropriate curriculum and discusses the procedures for planning inclusive classroom tests and assessments.</p> <p>Practical Activity: Group presentation on procedures for planning inclusive classroom tests and assessments.</p>						
<ul style="list-style-type: none"> Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	<p>Demonstrate the understanding of the planning process in assessment taking into consideration the diverse group of learners and the reliability and validity of assessment procedures (NTECF; NTS 3f, 3g, k, l, n, m, o, p).</p>						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes	Learning Indicators		Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?			
	CLO 6. Demonstrate the understanding of the planning process in assessment taking into consideration the diverse group of learners and analysing test scores for informed decision making(NTECF; NTS 3f, 3g, k, l, n, m, o, p).	<ul style="list-style-type: none"> Explain the concept item analysis Discuss the benefits of analysing items in test scores Analyse both objective and essay test items 		<p>Communication skills: through group presentations</p> <p>Personal development: individual and group presentations</p> <p>Respect and diversity: construct test to assess learners with different characteristics</p> <p>Critical thinking: developing test items for learner with different characteristics</p>			

Topic Title: Planning classroom tests and assessment: Analysing test results	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction	20 minutes	Review student teachers RPK through questions. Link responses to topic to be treated	Exchange last week's assignment amongst yourself and mark.
		20 minutes	Face-to-face and e-learning Uses lecturette to introduce topic. Guides student teachers to use their phones in searching for the meaning of test analysis/item analysis. Lets them share their findings	Face-to-face and e-learning Participate in discussion and use phones in searching for the meaning and Share your findings
		20 minutes	Practical activity & independent learning Guides student teachers to think-pair and share their views on benefits of test analysis. Select pairs at random for them to share their findings and make inputs to enrich discuss.	Practical activity & independent learning think-pair and share views on benefits. Selected pairs share their findings
		25 minutes	Face-to-face and independent learning Use lecturette to introduce and explain the basic steps in doing test analysis. Use case studies and practical illustrations to stimulate discussions on how methods are applied	Face-to-face and independent learning Examines cases provided to explain illustrate and stimulate discussions on how test analysis can be done
		25 minutes	Practical activity <ul style="list-style-type: none"> Guides student teachers to think-pair and share their views on factors that improve and influence validity of tests. Draw on their experiences from STS. Select pairs at random for them to share their findings and make inputs to enrich discuss. 	Practical activity <ul style="list-style-type: none"> think-pair and share views on factors that improve and influence validity of tests. Draw on experiences from STS. Selected pairs share their findings
		40 minutes	Face-to-face and independent learning Use lecturette to introduce and explain how to determine discrimination index using: $DI = \frac{RU}{NU} - \frac{RL}{NL}$ Where: RU= number of pupils in the upper group who answered the test correctly. RL= number of pupils in the lower group who answered the test correctly. NU= number of pupils in the upper group	Face-to-face and independent learning Participate in discussing The discrimination index is computed using practical illustrations

			NL= number of pupils in the lower group Use case studies and practical illustrations to stimulate discussions on how formulae is applied.	
		30 miutes	Face-to-face and independent learning Use lecturette to introduce and explain how to determine item difficulty using: $p = \frac{R}{T} \text{ or } p = \frac{R}{T} \times 100$ Where: R= number of people who answered the items correctly T= Total number of people who attempted the test item Use case studies and practical illustrations to stimulate discussions on how formulae is applied. Interpretation can be done using the following ranges: Proportion .00 - .49 - very difficult .50 - .69 - fairly difficult .70 - .89 - moderately easy .90 – 1.00 - very easy	Participate in discussion and use formula provided to solve cases.Use ranges provided for interpretation.
			Review key issues and summarise lesson	Ask and answer questions to review key issues
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<p>In-lesson Assessment: in lesson group presentation on reliability and validity. CLO 6 Reflective notes on planning classroom tests and assessment should be part of the general portfolio and graded as part of assessment component 2</p> <p>Topic treated will be assessed as part of a quiz in week 9.</p> <p>NTS 3</p> <p>k) Integrates a variety of assessment modes into teaching to support learning. l) Listens to learners and gives constructive feedback. m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher. n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners. o) Demonstrates awareness of national and school learning outcomes of learners. p) Uses objective criterion referencing to assess learners.</p>			
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) 			

Required Text (core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students' achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. 'N' B. Publishers.</p>
CPD needs	Determining reliability and validity of test items

Lesson 9

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Assessment procedures for inclusive classrooms			Lesson Duration	3 Hours		
Lesson description	This lesson aims to prepare student teachers to assess students through, projects and assignments among others. It tries to assist students to effectively evaluate performance assessment tasks, considering gender and learners with diverse strengths in inclusive and multi-grade classrooms						
Previous student teacher knowledge, prior learning (assumed)	Student teachers have knowledge about achievement test.						
Possible barriers to learning in the lesson	Students may not be familiar with the various inclusive settings in the classroom.						
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [<input checked="" type="checkbox"/>]	Practical Activity [<input checked="" type="checkbox"/>]	Work-Based Learning	Seminars [<input checked="" type="checkbox"/>]	Independent Study [<input checked="" type="checkbox"/>]	e-learning opportunities [<input type="checkbox"/>]	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face: Concept mapping/cartooning for meaning and characteristics of the types of authentic or performance assessment.</p> <p>Seminar: Students participate in a seminar session</p> <p>Independent study: student teachers engage with relevant and appropriate curriculum and discuss the procedures for planning inclusive classroom tests and assessments.</p> <p>Practical Activity: Group presentations of how to plan and develop authentic/performance assessment tasks for inclusive and multi-grade classrooms</p>						
<ul style="list-style-type: none"> • Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. • Write in full aspects of the NTS addressed 	<p>Demonstrate the understanding of assessing performance and related assignments for inclusive and multi-grade classrooms (NTECF; NTS 3k, 3l, 3p).</p>						
<ul style="list-style-type: none"> • Learning Outcome for the lesson, picked and developed from the course specification • Learning indicators for each learning outcome 	Learning Outcomes	Learning Indicators		Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?			
	CLO 7. demonstrate understanding, planning and developing authentic/performance assessment tasks, considering gender and learners with diverse strengths in inclusive and multi-grade classrooms (NTECF; NTS 3k, 3l, 3p).	<ul style="list-style-type: none"> • Explain authentic/performance assessment and discuss the characteristics of the types of authentic/performance assessment tasks. • Plan and develop authentic/performance assessment tasks for inclusive and multi-grade classrooms. 		<p>Communication skills: through group presentations</p> <p>Personal development: Learning about planning assessment</p> <p>Respect and diversity: Understanding the various inclusive classroom settings.</p>			

Topic Title: Assessment procedures for inclusive classrooms	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction	20 minutes	Face-to-face Reviews RPK using questions and answers on planning and administering test (PD theme 2)	Face-to-face Provide relevant answers to questions posed and applying the knowledge gained during STS.
	The concept authentic/performance assessment	40 minutes	Face-to-face: Tutor uses concept mapping/cartooning for meaning and characteristics of the types of authentic or performance assessment.	Face-to-face: Student teachers participate in lesson and use their STS experience to answer questions.
	Principles of fair assessment	60 minutes	Seminar: Tutor invites an expert in assessment to facilitate a session	Seminar: Student teachers participate in the sessions.
	Learning stories approach and socio-cultural approach.	60 minutes	Practical Activity: Tutor guides students to work in groups on Learning stories approach and socio-cultural approach in assessment. Class must take into consideration diverse students with different background and multi-grades.	Practical Activity: Students participate in groups.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<p>In-lesson Assessment: Group presentation and seminar participation should be graded as part of Component 2.</p> <p>Assessment Component 2: Quiz Topics treated from lesson 5 to 8 should be part of a quiz to be scores 20% Presentation of assignment on test item construction and scoring guide. NTS 3 k) Integrates a variety of assessment modes into teaching to support learning. l) Listens to learners and gives constructive feedback. m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher. n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners. o) Demonstrates awareness of national and school learning outcomes of learners. p) Uses objective criterion referencing to assess learners.</p>			
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) 			

	<ul style="list-style-type: none"> • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy)
Required Text (core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students' achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. 'N' B. Publishers.</p>
CPD needs	Workshop on item analysis

Lesson 10

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Assessment procedures for inclusive classrooms (2)			Lesson Duration	3 Hours	
Lesson description	This lesson aims to prepare student teachers to assess students through, projects and assignments among others. It tries to assist students to effectively evaluate performance assessment tasks, considering gender and learners with diverse strengths in inclusive and multi-grade classrooms					
Previous student teacher knowledge, prior learning (assumed)	Student teachers have knowledge about characteristics of the types of authentic or performance assessment.					
Possible barriers to learning in the lesson	Students may not be familiar with the various inclusive settings in the classroom.					
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [v]	Practical Activity [v]	Work-Based Learning	Seminars [v]	Independent Study [v]	e-learning opportunities []
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face: Concept mapping/cartooning for using types of observation, check lists, and rating scales Seminar: Students participate in a seminar session Independent study: student teachers engage with relevant and appropriate curriculum and discusses the procedures for planning inclusive classroom tests and assessments. Practical Activity: Group presentations of how to plan and develop authentic/performance assessment tasks for inclusive and multi-grade classrooms</p>					
<ul style="list-style-type: none"> Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	Demonstrate the understanding of assessing performance and related assignments for inclusive and multi-grade classrooms (NTECF; NTS 3k, 3l, 3p).					
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes	Learning Indicators			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?	
	CLO 7. demonstrate understanding, planning and developing authentic/ performance assessment tasks, considering gender and learners with diverse strengths in inclusive and multi-grade classrooms (NTECF; NTS 3k, 3l, 3p).	<ul style="list-style-type: none"> Explain authentic/performance assessment and discuss the characteristics of the types of authentic/performance assessment tasks. Plan and develop authentic/performance assessment tasks for inclusive and multi-grade classrooms. 			Communication skills: through group presentations Personal development: Learning about planning assessment Respect and diversity: Understanding the various inclusive classroom settings.	

Topic Title: Assessment procedures for inclusive classrooms (2)	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction	20 minutes	Face-to-face Reviews RPK using questions and answers on planning and administering test (PD theme 2)	Face-to-face Provide relevant answers to questions posed and applying the knowledge gained during STS.
	Using types of observation, check lists, and rating scales	40 minutes	Face-to-face: Tutor uses concept mapping/cartooning for using types of observation, check lists, and rating scales	Face-to-face: Student teachers participate in lesson and use their STS experience to answer questions.
	Clinical interviews, conversation	60 minutes	Seminar: Guide student teachers to use phones to search for meaning of clinical interviews. Students are paired and they take turns to interview each other based on the principles learnt from the seminar.	Seminar: Student teachers participate in the sessions.
	Gallery work; project development; task analysis; and building portfolios	60 minutes	Practical Activity: Put students in small groups. Assign topics to them to work on and present in class. Presentation should be part of portfolios. Topics Observation Work sheets Task analysis Projects Rating scales Tally sheets etc	Practical Activity: Students participate in groups and reflect their experiences during STS. Groups present to whole class
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	In-lesson Assessment: Group presentation and seminar participation should be graded as part of Component 2 . NTS 3 k) Integrates a variety of assessment modes into teaching to support learning. l) Listens to learners and gives constructive feedback. m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher. n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners. o) Demonstrates awareness of national and school learning outcomes of learners. p) Uses objective criterion referencing to assess learners.			
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) 			

	<ul style="list-style-type: none"> • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy)
Required Text (core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students' achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. 'N' B. Publishers.</p>
CPD needs	Performance and authentic assessment

Lesson 11

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12 3 4 5 6 7 8 9 10 11 12		
Title of Lesson	Data presentation and Interpretation of tests and authentic assessment data			Lesson Duration	3 Hours		
Lesson description	This lesson aims to prepare students teachers to acquire a repertoire of knowledge and skills to enable them apply appropriate techniques, processes and procedures to gather relevant data from differently abled middle childhood learners in inclusive and multi-grade setting in order to support their learning.						
Previous student teacher knowledge, prior learning (assumed)	Student teachers have knowledge about characteristics of the types of authentic or performance assessment.						
Possible barriers to learning in the lesson	Students may not be familiar with the various inclusive settings in the classroom.						
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [v]	Practical Activity [v]	Work-Based Learning	Seminars [v]	Independent Study [v]	e-learning opportunities []	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p>Face-to-face: Concept mapping/cartooning to discuss descriptive statistics and its application in interpreting assessment results.</p> <p>Seminar: Students participate in a seminar session.</p> <p>Independent study: student teachers engage with relevant and appropriate previous assessment instruments and discuss validity and reliability issues.</p>						
<ul style="list-style-type: none"> • Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. • Write in full aspects of the NTS addressed 	Demonstrate the understanding and use of norm-referenced and criterion-referenced modes of interpreting tests and manage data gathered on various aspects of the learners (NTS 3p) .						
<ul style="list-style-type: none"> • Learning Outcome for the lesson, picked and developed from the course specification • Learning indicators for each learning outcome 	Learning Outcomes	Learning Indicators			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?		
	CLO 8. demonstrate understanding and use of norm-referenced and criterion-referenced modes of interpreting tests and manage data gathered on various aspects of the learners (NTS 3p) .	<ul style="list-style-type: none"> • Collect data on various aspects of learners with different tools, analyse and use results to support learning of diverse learners. • Design differentiated assessment for learners with SEN in inclusive settings. • Demonstrate how norm-referenced and criterion-referenced modes of interpreting tests are used. 	Communication skills: through group presentations Personal development: Learning about assessing project work Respect and diversity: collecting data on various types of learners				

Topic Title: Data presentation and Interpretation of tests and authentic assessment data	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction	20 minutes	Face-to-face Reviews RPK using questions and answers on assessing project work and portfolio (PD theme 2)	Face-to-face Provide relevant answers to questions posed and applying the knowledge gained during previous class practical activities
	Descriptive statistics	40 minutes	Face-to-face: Use illustrations to facilitate session on the use of basic descriptive statistics for test data analysis. The use of mean, median and mode	Face-to-face: Student teachers participate in lesson and try their hands on examples and hypothetical cases given.
	Norm-referenced and criterion-referenced interpretation of data	60 minutes	Face-to-face & e-learning Guide student to use phones to search for meaning of Norm-referenced and criterion-referenced and how they are used for interpretation of data	Face-to-face & e-learning Student teachers participate in the sessions by using phones to search for information and share
	Validity and reliability issues	60 minutes	Practical Activity: Tutor discusses with student-teachers data collection techniques and the importance of ensuring the validity and reliability of such instruments. The class uses knowledge gained to critique different assessment instruments.	Practical Activity: Students participate in groups and reflect their experiences in their journals.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	In-lesson Assessment: Presentation of tasks assigned to students NTS 3 k) Integrates a variety of assessment modes into teaching to support learning. l) Listens to learners and gives constructive feedback. m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher. n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners. o) Demonstrates awareness of national and school learning outcomes of learners. p) Uses objective criterion referencing to assess learners.			
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) • YouTube • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, 			

	www.oerafrica.org , www.futureLearn.com , www.telmooc.org , www.col.org , Khan academy)
Required Text (core)	Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i> . Cape Coast. Institute of Education. Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i> . Cape Coast: Yaci Publications Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i> . Accra: Black Mask Ltd
Additional Reading List	Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co. Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc. Archer, F. K. (2002). <i>Measurement and evaluation in education</i> . Kumasi: Paks. Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i> . New York: Sage Publication. Carey, L. M. (2001). <i>Measuring and evaluating school learning</i> . Boston: Allyn Bacon. Gronlund, E. (2003). <i>Assessment of students' achievement</i> . (7th ed.). Boston: McGrawHill. Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall. Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i> . Accra: K. 'N' B. Publishers.
CPD needs	Workshop on using descriptive statistics for data analysis

Lesson 12

Year of B.Ed.	1	Semester	2	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12										
Title of Lesson	Data presentation and Interpretation of tests and authentic assessment data (2)				Lesson Duration	3 Hours									
Lesson description	This lesson aims to prepare students teachers to acquire a repertoire of knowledge and skills to enable them apply appropriate techniques, processes and procedures to gather relevant data from differently abled middle childhood learners in inclusive and multi-grade setting in order to support their learning.														
Previous student teacher knowledge, prior learning (assumed)	Student teachers have knowledge about characteristics of the types of authentic or performance assessment.														
Possible barriers to learning in the lesson	Students may not be familiar with the various inclusive settings in the classroom.														
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to-face [√]	Practical Activity [√]	Work-Based Learning	Seminars [√]	Independent Study [√]	e-learning opportunities []	Practicum								
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	Face-to-face: Concept mapping/Cartooning to discuss descriptive statistics and its application in interpreting assessment results. Seminar: Students participate in a seminar session. Independent study: student teachers discusses the use of feedback obtained from assessment														
<ul style="list-style-type: none"> Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	Demonstrate the understanding and use of norm-referenced and criterion-referenced modes of interpreting tests and manage data gathered on various aspects of the learners (NTS 3p).														
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes	Learning Indicators				Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?									
	CLO 8. demonstrate understanding and use of norm-referenced and criterion-referenced modes of interpreting tests and manage data gathered on various aspects of the learners (NTS 3p).	<ul style="list-style-type: none"> Collect data on various aspects of learners with different tools, analyse and use results to support learning of diverse learners. Design differentiated assessment for learners with SEN in inclusive settings. Demonstrate how norm-referenced and criterion-referenced modes of interpreting tests are used. 	Communication skills: through group presentations Personal development: Learning about assessing project work Respect and diversity: collecting data on various types of learners												

Topic Title: Data presentation and Interpretation of tests and authentic assessment data	Sub-topic	Stage/ time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction	20 minutes	Face-to-face Reviews RPK using questions and answers on assessing project work and portfolio (PD theme 2)	Face-to-face Provide relevant answers to questions posed and applying the knowledge gained during previous class practical activities
	Types of feedback	60 minutes	Face-to-face: Tutor uses concept mapping/cartooning discuss types of feedback obtained from assessment	Face-to-face: Student teachers participate in lesson and use their previous class practical activities to answer questions.
	How to use feedback	60 minutes	Seminar: Tutor invites two other tutors to serve as resources persons and discuss how to use feedback obtained from assessment with class. The class must discuss how to analyse and use results to support learning of diverse learners.	Seminar: Student teachers participate in the sessions.
	Conclusion of lesson/evaluation	40 minutes	Practical Activity: Tutor assign students into groups based on their Halls they belong to in their college. They discuss all the subtopics in the course and provide a brief presentation of what they have learnt.	Practical Activity: Students participate in groups and reflect their experiences in their journals.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<p>In-lesson Assessment: Participation in discussion and answering of questions orally</p> <p>Component 3: 40% Selected topic treated from lesson 1 to 12 should be part of end of semester exams. CLOs 1 to 7</p> <p>NTS 3</p> <p>k) Integrates a variety of assessment modes into teaching to support learning. l) Listens to learners and gives constructive feedback. m) Identifies and remediates learners’ difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher. n) Keeps meaningful records of every learner and communicates progress clearly to parents and learners. o) Demonstrates awareness of national and school learning outcomes of learners. p) Uses objective criterion referencing to assess learners.</p>			
Instructional Resources	<ul style="list-style-type: none"> • TESSA Online Educational Resources (www.tessafrica.net) • T-TEL Modules (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy) • The iBox (CENDLOS) • YouTube 			

	<ul style="list-style-type: none"> • Transforming Teacher Education and Learning (2016). <i>Group work: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i>. Accra. Ministry of Education (www.t-tel.org). • Other Relevant Online Resources (www.Tess-india.net, www.oerafrica.org, www.futureLearn.com, www.telmooc.org, www.col.org, Khan academy)
Required Text (core)	<p>Asamoah-Gyimah, K., & Anane, E. (n.d.). <i>Assessment in basic schools</i>. Cape Coast. Institute of Education.</p> <p>Eshun, P., & Effrim, P. K. (2008). <i>Basics in measurement, evaluation and statistics in education</i>. Cape Coast: Yaci Publications</p> <p>Tamakloe, E. K. Amedahe, F. K., & Atta, E. T. (2005). <i>Principles and methods of teaching</i>. Accra: Black Mask Ltd</p>
Additional Reading List	<p>Alonge, M. F. (2004). <i>Measurement and evaluation in education and psychology</i> (2nd ed.). Ado-Ekiti: Adedogo Pub. Co.</p> <p>Anastasi, A. (1982). <i>Psychological testing</i> (6th ed.). New York: Macmillan Publishing Inc.</p> <p>Archer, F. K. (2002). <i>Measurement and evaluation in education</i>. Kumasi: Paks.</p> <p>Burke, J. & Larry, C. (2008). <i>Educational research: Quantitative, qualitative, and mixed approaches</i>. New York: Sage Publication.</p> <p>Carey, L. M. (2001). <i>Measuring and evaluating school learning</i>. Boston: Allyn Bacon.</p> <p>Gronlund, E. (2003). <i>Assessment of students' achievement</i>. (7th ed.). Boston: McGrawHill.</p> <p>Nitko, A. J. (2001). <i>Educational assessment of students</i> (3rd ed.). New Jersey: Prentice-Hall.</p> <p>Onivehu, A. O. & Amoah, S. A. (2002). <i>Essentials of measurement and evaluation</i>. Accra: K. 'N' B. Publishers.</p>
CPD needs	Using assessment data

www.t-tel.org