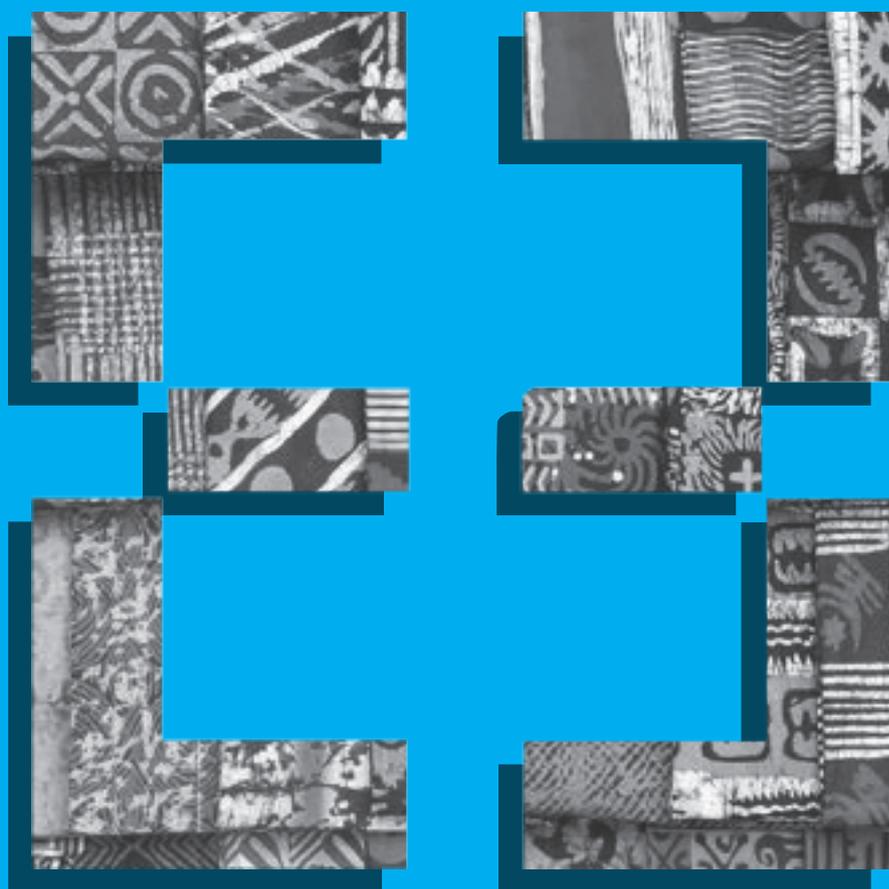


PROFESSIONAL DEVELOPMENT PROGRAMME

Tutor Professional Development Handbook: B.Ed. in Initial Teacher Education - Science Year 2 Semester 2

HANDBOOK FOR TUTORS





The Government of Ghana



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Foreword

It is a great pleasure and privilege to be asked to write the Foreword to this latest set of Professional Development Handbooks for the Bachelor of Education (B.Ed.) in Initial Teacher Education Year 2 Semester 2 courses.

These Professional Development Handbooks are at the heart of Ghana's ambitious teacher education reforms and have played a key role in the successes achieved to date. The Handbooks aim to ensure that tutors in Colleges of Education are reflecting critically on their methods of teaching and learning and supporting each other to implement the B.Ed. in line with the National Teacher Education Curriculum Framework and National Teacher Education Assessment Policy.

Tutors act as role models for student teachers. If tutors use the 'lecture-method' then this is what student teachers will imitate when they enter basic school classrooms. If tutors use a wide variety of interactive approaches, aligned with the National Teachers' Standards, then these approaches will become standard behaviour for beginning teachers when they graduate.

Over the last six years there is compelling empirical evidence that there has been a substantial shift in tutors' behaviour and approaches. This has had a tremendous impact on student teachers. An annual external evaluation of beginning teachers' classroom practices is carried out nationwide. In the 2015 evaluation only 2% beginning teachers demonstrated competencies and behaviours in the National Teachers' Standards. By 2019 this had increased to 42%. When one considers that these figures are derived from a national sample of all beginning teachers in the country it demonstrates that there has been a genuine transformation in Ghana's teacher education system.

This latest set of Professional Development Handbooks, developed by four mentoring universities (Kwame Nkrumah University of Science and Technology, University of Education, Winneba, University for Development Studies and University of Ghana) and tutors from their affiliated Colleges of Education, represents the first set of Handbooks developed since the onset of the COVID-19 pandemic. COVID-19 has had a significant impact on all of our lives and Colleges of Education should be commended for the way in which they rapidly responded to institutional closures and made the transition to emergency remote teaching and learning. These Handbooks have been designed to reflect the current realities of the blended learning approach which is being used in Colleges of Education and it is hoped that they will play a role in increasing the effectiveness of these new approaches.

These are also the first Professional Development Handbooks to be developed since Transforming Teaching, Education & Learning (T-TEL) was established as a Ghanaian not-for-profit organisation. I would like to take this opportunity to thank both the Ghana Tertiary Education Commission and Mastercard Foundation for their collaboration and support with the 'new T-TEL' which has made the development of these Handbooks possible.

Robin Todd
Executive Director, T-TEL
May 2021

ACKNOWLEDGEMENTS

Many thanks to Robin Todd and all other members of the T-TEL team for contributing to the success of the writing of the manual in diverse ways. The writing team was made up of the following contributors:

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The New approach to the Weekly Professional Development (PD) Sessions for Tutors

Overview

1. Background to the new approach to PD Sessions
2. Features of the B.Ed. PD Sessions
3. The Role of the PDC
4. The Role of the PDC in coordinating the introductory Session for tutors

1. Background to the new approach to PD

- For four years the CoE have been supported in leading weekly Tutor PD Sessions. The PD Sessions have focused on key themes, such as: the NTS, Action research and classroom enquiry among others. The ten theme-based PD modules have been vital in paving the way for the Reform of Teacher Education in Ghana. They have equipped tutors with important skills and knowledge to support the smooth transition to the New B.Ed.
- The New Four-Year B.Ed. will be implemented in CoEs, now affiliated to the Public Universities, and a new approach to the tutors' weekly PD is required. This new approach involves the Universities supporting their affiliated CoE in implementing the subject specific PD Sessions.
- The weekly PD Sessions are designed to prepare subject tutors to use the B.Ed. Course Manuals to teach the 12 lessons in the Course Manuals to student teachers. This means the PD Sessions will now be subject specific. This means there will be subject specific PD groups running each week in the CoEs and universities.
- The PD Sessions are designed to help operationalize the reform of teacher education at tutor and student teacher level and to support:
 - professionalising teaching by supporting teachers in developing communities of practice and raising the status of the teaching profession
 - improving the quality of new teachers by ensuring that they undergo a rigorous and practically focused, high-quality degree level programme
 - improving the learning outcomes and life chances for all children.

2. Features of the B.Ed. PD Sessions

- The universities will prepare the Subject Leads or HoDs from their affiliated CoE to lead the weekly subject tutor Sessions,
- The subject-tutor-groups can work at separate tables in one room. However, in exceptional cases a subject may need to work in another space in order to use specific materials or resources, e.g. video or science equipment,
- The main resources for the weekly tutor Sessions are the Subject Specific Course Manuals and the PD Guidance Notes on each Course Manual,
- Each PD Guidance Note is subject specific and contains two sections. The first section provides guidance for the Introductory Session for tutors. The second section is written to provide information to guide the weekly PD Sessions that are linked directly to the lessons in the Course Manual,
- The three-hour Introductory Session is to;
 - introduce the new approach to PD and organisation of the weekly Sessionsintroduce the course manuals

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 1 SESSION FOR LESSON 1 IN THE COURSE MANUAL

LEVEL/TITLE OF LESSON:

JHS Biology: Heredity and Variation I, and correction of related misconceptions, Concepts of heredity and variation

JHS Physics: Similarities and differences between rubber band and spring, Properties of elastic materials

Upper Primary: Meaning of energy and sources of energy

Early Grade: Uses of sunlight, Sunlight as a basic need of most plants

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session</i>	<i>Time in session</i>
1. Introduction / lesson overview	1.1 Write one thing you learnt in your semester 1 PD session, at any level, and how you applied it in your teaching.	15 mins
	1.2 Share your views with the whole group and add recommendations as appropriate.	
	1.3 Read the introduction, lesson description and the purpose of lesson 1 in the course manual.	
	1.4 Read silently the teaching and learning activities of the lesson from the course manual and indicate how they are related to student teachers' relevant previous knowledge.	
	1.5 Identify areas that require clarification and discussion.	
	1.6 Identify any challenges that you envisage in the delivery of the whole lesson in your groups and discuss how you would address the envisaged challenges of the lesson.	

<p>2. Concept Development (New learning likely to arise in this lesson).</p>	<p>2.1. List the major concepts in the lesson. 2.1.1. Share your list with the whole group.</p>	<p>30 mins</p>
	<p>2.2 Write possible challenging areas in teaching of the concepts identified and show how you can help student teachers to use different activities and strategies to support learning of these areas in basic schools through STS activities.</p>	
	<p>2.3 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classrooms.</p>	
<p>3. Teaching, learning and assessment activities for the lesson</p> <ul style="list-style-type: none"> ● Reading of teaching and learning activities and identification of areas that require clarification especially GESI related activities. ● Reading of teaching and learning activities and identification of GESI and ICT issues that require clarification. 	<p>3.1 Read silently the teaching and learning activities of Lesson 1 from the course manual and identify areas that require clarification</p>	<p>40 mins</p>
	<p>3.2 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how you can help student teachers to support basic school learners to develop these skills through STS activities.</p>	
	<p>3.3 Play a pre-recorded video on sources of energy, etc., to support teaching.</p>	
	<p>3.4 Discuss the relevance of the simulations and video(s) to the lesson</p>	
<p>4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,</p>	<p>4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP)</p>	

	4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5. Evaluation and review of session.	<p>5.1 Individually, identify any outstanding issues relating to Lesson 1 for clarification.</p> <p>5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session.</p> <p>5.3 Read the PD manual and look for relevant materials for the next session.</p>	5 mins

Assessment Policy

- **College base Assessment takes 60% while External Assessment takes 40%.**
- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged.**

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 2 SESSION FOR LESSON 2 IN THE COURSE MANUAL

LEVEL/TITLE OF LESSON:

JHS Biology: Heredity and Variation II

JHS Physics: Properties of Elasticity

Upper Primary: Energy II

Early Grade: Teaching Food I

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session)</i>	<i>Time in session</i>
1. Introduction / lesson overview	1.1 Write one thing you learnt in your first PD session and how you applied it in your teaching.	15 mins
	1.2 Share your views with the whole group.	
	1.3 Read the introduction and the purpose of lesson two in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	
	1.4 Identify and discuss the relationship among the following using the course manual: <i>CLOs, LIs, teaching and learning activities, assessment.</i>	
	1.5 Identify any challenges that you envisage in the delivery of the lesson in your groups. 1.5.1 Discuss how you might address the identified challenges.	
Concept Development (New learning likely to arise in this lesson).	2.1 List the major concepts in the lesson. 2.1.1 Share your list with the whole group. 1.6 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classrooms.	31 mins

<p>3. Teaching, learning and assessment activities for the lesson</p> <ul style="list-style-type: none"> ● Reading of teaching and learning activities and identification of areas that require clarification especially GESI related activities. ● Reading of teaching and learning activities and identification of GESI and ICT issues that require clarification. 	<p>3.1 Read silently the teaching and learning activities and identify areas that require clarification.</p> <p>3.2 Discuss how GESI issues that relate to the teaching and learning activities of the lesson will be addressed.</p> <p>3.3 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how you can help student teachers to support basic school learners to develop these skills through STS activities.</p> <p>3.4 Use games such as backs to the board from the theme 1 Page 20, pre-recorded video scenarios on the persons that have defied gender and social stereotyping to achieve successes in society</p> <p>3.5 Discuss the relevance of the video(s) to the lesson.</p>	<p>40 mins</p>
<p>4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,</p>	<p>4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP)</p> <p>4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.</p>	
<p>5. Evaluation and review of session:</p> <ul style="list-style-type: none"> ● identification of any outstanding issues relating to this lesson for clarification ● Advance preparation ● In the case of unresolved issues 	<p>5.1. Individually, identify any outstanding issues relating to the lesson for clarification.</p> <p>5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session.</p>	<p>5 mins</p>

	5.3 Read the PD manual and look for relevant materials for the next session.	
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Assessment Policy

- **College base Assessment takes 60% while External Assessment takes 40%.**
- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged.**

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 3 SESSION FOR LESSON 3 IN THE COURSE MANUAL

LEVEL/ TITLE OF LESSON:

JHS Physics: Kinematics

JHS Biology: Human Body-Mammalian Reproductive Structures

Upper primary: Force

Early grade: Food

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session)</i>	<i>Time in session</i>
1. Introduction / lesson overview	1.1 Explain to colleagues how you applied what you learnt last week in your PD session in teaching lesson two (2). 1.1.2 List any challenges encountered if any.	15 mins
	1.2 Write and cross-share your views on the following in the course manual for lesson 3: possible barriers, contextual issues and cross-cutting issues. 1.3 In groups read and discuss the introduction and learning outcomes of lesson 3 from the course manual and indicate how they are related to student teachers' relevant previous knowledge. 1.4 In pairs, identify intervention strategies and appropriate assistive devices for learners with SEN.	
2. Concept Development (New learning likely to arise in this lesson)	2.1 In pairs write down the major concepts of the lesson. 2.1.1 Share your list with the whole group. 2.2 Write possible challenging areas in teaching of the concepts identified in	31 mins

	<p>both CoE and basic school classrooms.</p> <p>2.3 Identify the needed inclusive resources for teaching and learning of the concepts in both CoE and basic school classrooms.</p>	
<p>2. Teaching and learning activities for the lesson</p> <p>a. Reading of teaching and learning activities and identification of areas that require clarification</p> <p>b. Discussion of activities Working through one or two activities,</p> <p>c. <i>Identify where, and which, core and transferable skills are being developed or applied</i></p> <p>d. <i>Makes links to the existing PD Themes with page reference where they can support teaching, for example: action research, questioning and to other external reference material</i></p>	<p>3.1 Read silently the teaching and learning activities and identify areas that require clarification.</p> <p>3.2 In pairs discuss the following questions:</p> <p>i) Are the teaching and learning activities appropriate to achieve the LOs and LIs? Explain.</p> <p>3.3 Be in pairs to identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills through STS activities.</p> <p>3.4 Provide techniques or strategies that are used to support SEN.</p> <p>3.5 Identify material resources required for producing any TLMs for the lesson.</p>	40 mins
<p>4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,</p>	<p>4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP)</p> <p>4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.</p>	
<p>5. Evaluation and review of session:</p>	<p>5.1 Individually, identify outstanding issues related to the lesson for clarification.</p>	5 mins

<ul style="list-style-type: none"> • identification of any outstanding issues relating to this lesson for clarification • Advance preparation <p>In the case of unresolved issues</p>	<p>5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation during the next PD session.</p> <p>5.3 Read the PD manual and find relevant materials for the next session.</p>	
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Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 4 SESSION FOR LESSON 4 IN THE COURSE MANUAL

LEVEL/ TILE OF LESSON:

JHS Physics: Vector and Scalar Quantities

JHS Biology: Human Body-Fertilization and Pregnancy

Upper primary: The Solar System 1

Early grade: Care of the Skin

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session).</i>	<i>Time in session</i>
1. Introduction / lesson overview	<p>1.1 Reflect on lesson 3 using the following guiding questions?</p> <ul style="list-style-type: none">• What challenges did learners manifest in classrooms?• What were some of the strategies employed to help learners overcome barrier to lesson 3? <p>1.2 Read the lesson descriptions, the purpose of lesson 4 from the course manual and indicate how they are related to student teachers' relevant previous knowledge and raise issues that need clarification and/or/ discussion.</p> <p>1.3 In pairs, discuss the relationship among the CLOs, LIs and the teaching activities.</p>	15 mins
2. Concept Development (New learning likely to arise in this lesson)	<p>2.1. List the major concepts in the lesson.</p> <p>2.1.1 Share your list with the whole group.</p> <p>2.2. Write possible challenging areas in teaching of the concepts identified.</p> <p>2.3. Suggest solutions to the possible challenging areas in teaching of the concepts identified.</p>	31 mins

	<p>2.4. Identify the resource needed for lesson 4 in the course manual and indicate how they will be used in the lesson to promote learning for all learners.</p> <p>2.5. Discuss how you will ensure that all the resources suggested in the course manual can be made GESI responsive.</p> <p>2.6. Suggest alternative relevant inclusive resources (different from those in the course manual) for the teaching and learning of the concepts identified in both CoE and basic school classrooms.</p>	
<p>3. Teaching and learning activities for the lesson</p>	<p>3.1 Discuss the teaching and learning activities and show how you will ensure that all the teaching and learning activities are GESI responsive.</p> <p>3.2 In your course groups, discuss how the main concepts will be taught, bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive.</p> <p>3.3 Suggest how you will develop core and transferable skills in all student teachers during the lesson and show how you can help student teachers to support basic school learners to develop these skills through STS activities.</p>	<p>40 mins</p>
<p>4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,</p>	<p>4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP)</p> <p>4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.</p>	

<p>5. Evaluation and review of session</p>	<p>5.1 Identify and discusses any outstanding issues related to the lesson for further clarification.</p> <p>5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session.</p> <p>5.3 Read the PD manual and find relevant materials for the next session.</p>	<p>5 mins</p>
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Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 5 SESSION FOR LESSON 5 IN THE COURSE MANUAL

JHS PHYSICS.....Work, Energy & Power and their relationship

JHS BIOLOGY Teaching Food and Nutrition I

UPPER PRIMARYThe Solar System 1

EARLY GRADE ECE.....Further Teaching Activities on Simple Electronics

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session)</i>	<i>Time in session</i>
1. Introduction / lesson overview	<p>Tutors provide their responses on a piece of papers given to them by the SL</p> <p>1.1 Invite your critical friend who sat in the previous lesson to share his/her observation with the whole group.</p> <p>1.2 Read the introduction and the purpose of lesson five in the course manual and indicate how they are related to student teachers' relevant previous knowledge.</p> <p>1.3 Identify any challenges that you envisage in the delivery of the lesson in your groups</p> <p>1.3.1 Discuss how you might address the identified challenges.</p>	15 mins
2. Concept Development (New learning likely to arise in this lesson)	<p>2.1 List the major concepts in the lesson and indicate how they are related to student teachers' relevant previous knowledge.</p> <p>2.1.1 Share your list of major concepts in the lesson with the whole group and indicate how they are related to student teachers' relevant previous knowledge</p> <p>2.2 Write possible challenging areas in teaching of the concepts identified and</p>	31 mins

	<p>show how you can help student teachers to use different activities and strategies to support learning of these areas in basic schools through STS activities.</p> <p>2.3 List the needed resources for the teaching and learning of the concepts identified in both CoE and basic school classrooms.</p>	
<p>3. Teaching and learning activities for the lesson.</p>	<p>3.1 Read silently the teaching and learning activities and identify areas that require clarification.</p> <p>3.2 Discuss how GESI issues that relate to the teaching and learning activities of the lesson will be addressed.</p> <p>3.3 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how you can help student teachers to support basic school learners to develop these skills through STS activities.</p> <p>3.4 Tutors share how they will present a specific lesson to enable student teachers develop a particular core and transferable skill.</p> <p>3.5 Discuss the relevance of the video(s), simulations, power point presentations and analogies of the lesson.</p> <p>3.6 In groups discuss how to build TLRs for the lesson. (E.g. first-class lever using local materials)</p>	
<p>4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities.</p>	<p>4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP)</p>	

	4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5. Evaluation and review of session.	5.1 Individually, identify any outstanding issues relating to the lesson and bring them up for clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session.	5 mins
	5.3 Read the PD manual and find relevant materials for the next session.	

Assessment Policy

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- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged.**

Age Phase:

Name of Subject:

BIOLOGY, PHYSICS, UPPER PRIMARY INT. SCIENCE AND EARLY GRADE SCIENCE II

Year 2 Semester 2

TUTOR PD SESSION 6 (REVIEW OF COURSE MANUAL FOR LESSONS 1, 2, 3, 4 AND 5)

<p><i>Focus: the bullet points provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i></p>	<p>Guidance Notes on Tutor Activity during the PD Session. <i>What PD Session participants (Tutors) will do during each state of the session)</i> Guidance Notes on Tutor Activity during the PD Session. <i>What PD Session participants (Tutors) will do during each state of the session)</i></p>	<p>Time in session</p>
<p>1. Introduction / lesson overview</p>	<p>1.1 Write down your reflections on the post-it card given you base on the following: positives, challenges and suggestions to improve on the next PD sessions.</p> <p>1.1.1 Share your reflections with a colleague and then with the larger group.</p> <p>1.2 Brainstorm on how to promote GESI in the CoE and basic classrooms.</p> <p>1.3 Discuss the parts of the NTS that support lessons 1, 2, 3, 4 and 5 and explain how they were implemented in your various lessons.</p> <p>1.3.1. Explain how you supported your student teachers to also implement the NTS during their STS activities.</p> <p>1.4 Discuss whether or not the TLRs used in the delivery of their varied lessons were GESI responsive.</p> <p>1.5 Shared your experiences on the kinds of feedbacks provided as well as assessment mode used to evaluate student teachers during the various teaching and learning processes.</p>	

	<p>1.6 Pick at random, read aloud and tell the meaning of the core and transferable skills written on pieces of paper and how they can help student teachers to support basic school learners to develop these skills through STS activities.</p> <p>1.7 Discuss cross cutting issues, including equity and inclusivity connected to the lessons delivered and how the student teachers would also implement them in the basic school classrooms.</p>	
<ul style="list-style-type: none"> Identify suitable digital tools to use to facilitate the various lessons. 	1.8 Mention the various digital tools used to facilitate your lessons.	
<p>2. Concept Development (New learning likely to arise in this lesson)</p>	<p>2.1 Work in pairs to identify and discuss basic concepts in lesson 1, 2, 3, 4, and 5 that you felt were not well treated with the students and suggest ways to improve upon teaching of those concepts.</p> <p>2.1.1 Explain the concepts above to the larger group with with appropriate exemplars that can enhance understanding.</p> <p>2.2 In pairs, identify challenging areas of teaching the concept in lessons 1, 2, 3, 4 and 5.</p> <p>2.2.1 Present your answers on chats for gallery walk.</p> <p>2.2.2 Share findings after gallery walk with whole group.</p>	25 mins
<p>3. Teaching, learning and assessment activities for the lesson.</p>	<p>3.1 Discuss the nature of the various tasks given to student teachers and how the scores were collated.</p> <p>3.1.1 How did you ensure that student teachers' assessment is in accordance with the NTEAP?</p>	40 mins
<p>4 Evaluation and review of session</p>	4.1 Evaluate the PD sessions indicating what lessons have been learnt and	5 mins

	<p>how the lessons learnt impacted teaching and learning of lessons 1, 2, 3, 4 and 5.</p> <p>4.2 Read through lesson seven (7) before the next PD session.</p>	
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Name of Subject: SCIENCE

Year 2 Semester 2

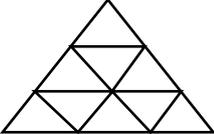
TUTOR PD 7 SESSION FOR LESSON 7 IN THE COURSE MANUAL

JHS Biology: Food and Nutrition II

JHS Physics: Viscosity

Upper Primary: The Solar System II

Early Grade: Personal Hygiene, Hand washing, Importance of cleaning teeth and bathing of the body

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session)</i>	<i>Time in session</i>
1. Introduction / lesson overview	1.1 How many triangles are in the figure below? 	15 mins
	1.2 Discuss with the whole group the strengths and the weaknesses of lesson 6.	
	1.3. Read and discuss the main issues connected to the introduction, lesson description and the purpose of lesson seven in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	
	1.4. Identify and discuss the relationship among the following in the course manual: lesson description, delivery mode, LOs, LIs, teaching and learning activities, assessment procedures.	
	1.5 Identify any challenges that you envisage in the delivery of the lesson in your groups.	

	1.5.1. Discuss how you might address the identified challenges.	
2. Concept Development (New learning likely to arise in this lesson).	2.1 List the major concepts in the lesson. 2.1.1 Share your list with the whole group.	30 mins
	2.2 Discuss how the main concepts will be taught bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive.	
	2.3 List the needed inclusive resources for teaching and learning of the concepts identified in both CoE and basic school classroom.	
3. Teaching and learning activities for the lesson.	3.1 Read silently the teaching and learning activities and identify areas that require clarification and discussions 3.2 Discuss how you will ensure that all the teaching and learning activities are GESI responsive. 3.3 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills through STS activities	
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,	4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP 4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	

<p>5. Evaluation and review of session:</p>	<p>5.1 Individually, identify any outstanding issues relating to the lesson for clarification.</p> <p>5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session.</p> <p>5.3 Read the PD manual and look for relevant materials for the next session.</p>	
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Assessment Policy

- **College base Assessment takes 60% while External Assessment takes 40%.**
- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged**

Name of Subject: SCIENCE

TUTOR PD 8 SESSION FOR LESSON 8 IN THE COURSE MANUAL

Year 2 Semester 2

JHS Physics: Pressure in Fluids

JHS Biology: Teaching Animal production

Upper Primary: The Solar System III

Early Grade: Further Strategies on Teaching Personal Hygiene

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session)</i>	<i>Time in session</i>
1. Introduction / lesson overview	1.1. Write one thing you learnt in your last weeks' PD session and how you applied it in your teaching. 1.1.1. Share your views with the whole group.	15 mins
	1.2 Read the introduction and the purpose of lesson eight in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	
	1.3 Identify and discuss the alignment of LOs, LIs, teaching and learning activities and assessment procedures.	
	1.4 Identify any challenges that you envisage in the delivery of the lesson in your groups. 1.4.1 Discuss how you might address the identified challenges.	
2. Concept Development (New learning likely to arise in this lesson)	2.1 List the major concepts in the lesson 2.1.1. Share your list with the whole group.	31 mins
	2.2. Write possible challenging areas in teaching of the concepts identified and discuss how you would address the envisaged challenges.	

	2.3 List the needed resources for the teaching and learning of the concepts identified in both CoE and basic school classroom.	
3. Teaching and learning activities for the lesson.	3.1 Read silently the teaching and learning activities and identify areas that require clarification. 3.2 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and show how you can help student teachers to support basic school learners to develop these skills through STS activities.	40 mins
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,	5.3 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP) 5.4 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5. Evaluation and review of session:	5.1 Individually, identify any outstanding issues relating to the lesson for clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation during the next PD session. 5.3 Read the PD manual and look for relevant materials for the next session.	

Assessment Policy

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Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 9 SESSION FOR LESSON 9 IN THE COURSE MANUAL

JHS Physics: Fluids in motion

JHS Biology: Biology and Industry

Upper Primary: Mixtures 1

Early Grade: Teaching Simple Machines

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session</i>	<i>Time in session</i>
1. Introduction / lesson overview	1.1 Write one thing you learnt in your last weeks' PD session and how you applied it in your teaching. 1.1.1. Share your views with the whole group.	15 mins
	1.2 Read the introduction and the purpose of lesson eight in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	
	1.3 Identify and discuss the relationship among the following using the course manual: LOs, LIs, teaching and learning activities, assessment procedures.	
	1.4 Identify any challenges that you envisage in the delivery of the lesson in your groups. 1.3.1 Discuss how you might address the identified challenges.	
2. Concept Development (New learning likely to arise in this lesson).	2.1 List the major concepts in the lesson. 2.1.1 Share your list with the whole group.	32 mins
	2.2 Write possible challenging areas in teaching of the concepts identified.	

	2.3 Suggest solutions to the possible challenging areas in teaching of the concepts identified.	
	3.4 List the needed resources for the teaching and learning of the concepts identified in both CoE and basic school classroom.	
3. Teaching and learning activities for the lesson.	3.1 Read silently the teaching and learning activities and identify areas that require clarification. 3.2 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills through STS activities.	40 mins
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities.	4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP) 4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5. Evaluation and review of session: Identification of any outstanding issues relating to this lesson for clarification 5 Advance preparation 6 In the case of unresolved issues	5.1 Individually, identify any outstanding issues relating to the lesson for clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation during the next PD session. 5.3 Read the PD manual and look for relevant materials for the next session.	

Assessment Policy

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Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 10 SESSION FOR LESSON 10 IN THE COURSE MANUAL

LEVEL/LESSON TITLE:

JHS (Physics): Resources for Physics teaching

JHS (Biology): Further studies on JHS Science curriculum

UPPER PRIMARY: Mixtures II

EARLY GRADE: Teaching the uses of Simple Machines

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session)</i>	<i>Time in session</i>
1. Introduction/Lesson Overview	1.1 In pairs write two things you learnt in your previous PD session 1.1.1 In your pairs, read and explain how you applied them in your teaching to the whole group.	15 mins
	1.2 Read silently the introduction, lesson description and the purpose of lesson 10 in the course manual and indicate how they are related to student teachers' relevant previous knowledge. 1.3 Discuss the alignment of the CLOs, LIs, teaching and learning activities, assessment procedures of the lesson and how they are connected to the basic school curriculum.	
2. Concept Development (New learning likely to arise in this lesson).	2.1 List the major concepts in the lesson and show how you can help student teachers to use different activities and strategies to support learning of these areas in basic schools through STS activities.	30 mins
	a. Write possible challenging areas in teaching of the concepts identified and discuss how they	

	would address the envisaged challenges of the lesson.	
	<p>b. Read and identify the resources suggested in the course manual to teach the lesson in both CoE and basic school classrooms.</p> <p>2.2 Suggest alternative needed inclusive resources (different from those in the course manual) for the teaching and learning of the concepts identified.</p>	
3. Teaching and learning activities for the lesson.	3.1 Read silently the teaching and learning activities and identify areas that require discussion and clarification	40 mins
	3.2 In your course groups, discuss how the main concepts will be taught bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive.	
	3.3 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and show how you can help student teachers to support basic school learners to develop these skills through STS activities.	
	<p>3.4 In developing resources be mindful of the following:</p> <ul style="list-style-type: none"> ✓ Materials should be enough for everyone/groups ✓ Materials should be usable by everyone/groups ✓ Internet availability if required. ✓ Electricity availability if required. 	
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project	3.1. Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities.	

<p>(30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities.</p>	<p>(Ensure all assessments are in line with NTEAP)</p> <p>3.2. Refer to the NTEAP document and focus on subject portfolio and subject project especially.</p>	
<p>4. Evaluation and review of session.</p>	<p>5.1 Individually, identify any outstanding issues relating to the lesson for clarification.</p> <p>5.2 Identify a critical friend who took part in the PD session to sit in your class during lesson and report on observation during the next PD session.</p> <p>5.3 Read the PD manual and look for relevant materials for the next session.</p>	<p>5 mins</p>

Assessment Policy

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Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 11 SESSION FOR LESSON 11 IN THE COURSE MANUAL

LEVEL/LESSON TITLE:

JHS (Physics): Developing a portfolio

JHS (Biology): Science Teaching Styles

UPPER PRIMARY: Upper Primary Integrated Science Curriculum

EARLY GRADE: EGE Science Student-teachers as Resources

<i>Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed</i>	<i>Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each state of the session</i>	<i>Time in session</i>
1. Introduction / Lesson Overview	1.1 Mention challenging issues from your previous lessons that needs to be addressed and discuss them as a whole group activity.	15 mins
	1.2 Read silently the introduction, lesson description and the purpose of lesson 11 in the course manual, indicate how they are related to student teachers' relevant previous knowledge and raise issues that need clarification and/ or discussion.	
1.3 In pairs, discuss the purpose of the lesson and share with the larger group		
1.4 Discuss the alignment of the CLOs, Lls, teaching and learning activities, assessment procedures of the lesson.		
2. Concept Development (New learning likely to arise in this lesson).	2.1 List the major concepts in the lesson from the course manual and discuss them with the whole group. 2.2 Individually prepare and share with the whole group thought-provoking and probing questions that will	30 mins

	guide all students to acquire the major concepts of the lesson irrespective of their background.	
	<p>2.3 Write possible challenging areas related to teaching of the major concepts.</p> <p>2.4 Suggest to the whole group practical ways of addressing the challenges identified and show how you can help student teachers to use these practical ways to support learning in basic schools through STS activities.</p> <p>2.5 Read and identify the resources suggested in the course manual to teach the lesson.</p> <p>2.6 Discuss how you will ensure that all the resources suggested in the course manual can be made GESI responsive</p> <p>2.7 Suggest alternative relevant inclusive resources (different from those in the course manual) for the teaching and learning of the concepts identified in both CoE and basic school classrooms.</p>	
<p>3. Teaching, learning and assessment activities for the lesson</p> <ul style="list-style-type: none"> ● Reading of teaching and learning activities and identification of areas that require clarification especially GESI related activities. ● Reading of teaching and learning activities and identification of GESI and ICT issues that require clarification. 	<p>3.1 Read silently the teaching and learning activities and identify areas that require discussion and clarification.</p> <p>3.2 Discuss how you will ensure that all the teaching and learning activities are GESI responsive.</p> <p><i>NB: The activities should be designed and well-arranged so as to promote the understanding and participation of all (male & female, slow & fast learners, physically challenged and the marginalised) students during the lesson.</i></p>	40 mins

	<p>3.3 In your course groups, discuss how the main concepts will be taught bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive.</p>	
	<p>3.3 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills through STS activities.</p>	
	<p>3.5 In developing resources be mindful of the following:</p> <ul style="list-style-type: none"> ● Materials should be enough for everyone/groups. ● Materials should be usable by everyone/groups. ● Internet availability if required. ● Electricity availability if required. 	
<p>4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,</p>	<p>4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP)</p> <p>4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.</p>	
<p>5. Evaluation and review of session.</p>	<p>5.1 Individually, identify any outstanding issues relating to the lesson for clarification.</p> <p>5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session.</p> <p>5.3 Evaluate the PD sessions indicating what lessons have been learnt and</p>	<p>5 mins</p>

	how the sessions have impacted teaching and learning of the course.	
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Assessment Policy

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College of Education Tutor Professional Development (TPD) Survey – Coordinators Survey

Introduction

This survey should be completed by the TPD Coordinators for each College of Education. This survey will be completed on the College of Education Management Information System (CEMIS). The survey should be completed each week after TPD sessions.

1. Name of College of Education	
2. Please enter the date of the session	

3. Did today's scheduled TPD session take place?		
Yes	1	Go to Q5
No and we did not reschedule.	2	Go to Q4
No but we rescheduled for later this week or for an additional slot next week	3	Go to Q4

4. If the TPD session did not take place, please explain why		
Conflict with other activities	1	End data submission.
No one showed up for the session.	2	
Other (please specify)	3	

5. How many male tutors attended?	Answer must be a number.....
6. How many female tutors attended?	Answer must be a number.....
7. Which session was it?	Answer must be a text.....

8. What was the level of tutor participation during today's session?	
75-100% of the tutors were engaged	1
50-75% of the tutors were engaged	2
25-50% of the tutors were engaged	3
0-25% of the tutors were engaged	4

9. Please rate yourself on how well you facilitated the session	
I was not prepared	1
I could have been better prepared.	2
I felt adequately prepared.	3
I was very prepared and knew the content well	4

10. Did anyone from your mentoring University visit your college to observe and participate in the PD session?		
Yes	1	Go to Q11
No	2	Skip to Q13

11. What kind of support was provided during the visit?	
The University team worked with me to prepare for the session.	1
The University team participated in the PD session.	2
The University team observed the session.	3
After the session, the University team gave feedback on how the session went	4

12. How valuable was the support to you?	
Not Valuable	1
Somewhat Valuable	2
Very Valuable	3

13. Do you think the tutors found the session valuable?	
Not Valuable	1
Somewhat Valuable	2
Very Valuable	3

14. How adequately do you think Gender Equality and Social Inclusion (GESI) issues were addressed throughout the session?	
Not Adequate	1
Somewhat Adequate	2
Very Adequate	3

15. How much impact do you think the session will have on the learning of students?	
Very Good	1

Good	2
Minimal	3

16. Based on the reflection on the session today, what percentage of tutors do you think are applying interactive teaching strategies learnt from the sessions in their classes?	
75-100% of tutors are applying interactive teaching strategies in their classes	1
50-75% of tutors are applying interactive teaching strategies in their classes	2
25-50% of tutors are applying interactive teaching strategies in their classes	3
0-25% of tutors are applying interactive teaching strategies in their classes	4

17. What percentage of tutors do you think are using ICT in their classes as teaching aids e.g., integration of videos, PowerPoint presentations and as a research tool?	
75-100% of tutors are using ICT as teaching aids in their classes	1
50-75% of tutors are using ICT as teaching aids in their classes	2
25-50% of tutors are using ICT as teaching aids in their classes	3
0-25% of tutors are using ICT as teaching aids in their classes	4

18. Did the Principal and/or Vice Principal attend, visit or monitor the PD session? (Choose one or more answer from the list)?	
The Principal	1
The Vice Principal	2
Neither the Principal nor Vice Principal attended	3

