

# Four-Year B.Ed. Course Manual

# **Multimedia Development and Use**

















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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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# **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 .....

### **Course Manual Writing Format**

#### Course Information Title Page

#### The vision for the New Four-Year B.Ed. Curriculum

To transform initial teacher education and train highly qualified, motivated new teachers who are effective, engaging and fully prepared to teach the basic school curriculum and so improve the learning outcomes and life chances of all learners they teach as set out in the National Teachers' Standards. In doing this to instil in new teachers the Nation's core values of honesty, integrity, creativity and responsible citizenship and to achieve inclusive, equitable, high quality education for all learners

learners **Course Details Course name** Multimedia Development and use for primary schools **Pre-requisite Course Level** 200 Course Credit 3 Code Value **Table of contents** Goal for the Subject or Learning Area The goal of pedagogic studies is to equip student teachers with the foundation of the teaching profession by providing requisite instructional competencies, passion, commitment and positive attitude that ensures effective learning in diverse contexts. **Key contextual factors** The use of varying learning resources in stimulating learning at the primary schools is critical to any learning situation especially in this technologically-driven era. However, in most primary schools in Ghana, some teachers do not have equal access to adequate teaching and learning resources in teaching at the primary school level due to resource constraints. The need for teachers to be resourceful becomes imperative if they are to meet the ever-changing educational needs of learners. Knowledge and skills required to identify, select and utilise multimedia resources for effective teaching and learning become one of the core competencies that is required of any 21st century teacher. This course is expected to provide knowledge and skills for developing and using low cost instructional resources available in the immediate environment and communities, in which primary school teachers teach, to facilitate learning among primary school learners. **Course Description** The course is structured to expose primary school student teachers to the concept and nature of multimedia development and educational technology. Student teachers are guided to examine some constructivist theories and principles of learning suitable for primary school learners. The course further focuses on various types of instructional media; how to develop, adapt learning materials to suit diverse learners, develop adaptive and assistive technologies for learners with SEN. Student teachers will also be guided to examine ways of evaluating, auditing and storing learning resources developed. Among others, the course will be delivered through demonstrations, projects, presentations, gallery work and peer assessment.

Similarly, diverse methods including projects, gallery work and illustrative presentations would be used to assess student teachers. It is expected that this would enable them use various criteria in selecting materials and also apply principles in developing and using varying multimedia and low-cost learning resources in facilitating and stimulating learning among differently abled learners in inclusive and multi-grade classrooms to improve learning. It will also equip student teachers of middle childhood learners with skills to manage transition from the Upper Primary stage through to JHS (NTS 1a, 3g, 3j, 3f; NTECF, p. 45)

Core and transferable skills and cross cutting issues, including equity and inclusion

**Digital literacy** of student teachers will be enhanced by giving them opportunities to surf and present information across units using various digital tools

**Critical thinking** is developed in student teachers when they express their conceptions, misconceptions and biases towards the use of various multimedia resources.

Collaboration is fostered through assigning group projects and presentation of various topics across units.

**Communicative skills** of student teacher would be enhanced through group discussions, presentations, co-planning and co-teaching

**Personal development** would be fostered through individual and group presentation, examining personal prejudices for some multimedia resources for teaching.

Respect for diversity would be engendered in student teachers by using various criteria of group formation.

**Commitment and passion for teaching** would be developed when student teachers develop various multimedia resources for teaching.

**Creativity:** This would be enhanced by creating or developing different multimedia resources to support the learning of learners with diverse characteristics.

Course Learning Outcomes	Learning Indicators
CLO 1. Demonstrate a clear understanding among the concepts of multimedia, educational technology and instructional technology and how to develop and use low- cost materials. They should also be able to explain the importance and challenges of using multimedia resources to address misconceptions, barriers to learning (NTS 3m).	<ul> <li>Distinguish among the concepts of multimedia, educational technology and instructional technology</li> <li>Identify some misconceptions and barriers to developing and using multimedia materials to support learning and explain how to address them through poster presentations.</li> </ul>
CLO 2. exhibit an understanding and application of the constructivist theories and the principles of learning in the use of learning materials (NTS 2e)	<ul> <li>Discuss the relevance of the constructivist theories to the use of learning materials in diverse contexts.</li> <li>Apply the principles of learning in the use of learning resources in diverse learning settings.</li> </ul>
CLO 3. Demonstrate knowledge and application of the basic elements and principles of creating visual designs using different media production techniques with low/no-cost materials and their evaluation with respect to SEN/gender suitability in order to ensure effective communication and interaction in primary schools (NTS 3m).	<ul> <li>Develop a learning material/model for learning any concept in a specific subject area by applying the basic elements and principles of visual design using imitative media production technique.</li> <li>Develop a learning material/model for learning any concept in a specific subject area by applying the basic elements and principles of visual design using adaptive media production technique.</li> <li>Develop a learning material/model for learning any concept in a specific subject area by applying the basic elements and principles of visual design using adaptive media production technique.</li> <li>Develop a learning material/model for learning any concept in a specific subject area by applying the basic elements and principles of visual design using creative media production technique.</li> <li>Apply the principles of effective communication and deal with barriers that inhibit communication during interactions in primary schools</li> <li>Conduct SEN/gender evaluation and audit of learning resources and create various appropriate ways of storing them.</li> </ul>
CLO 4. Demonstrate an understanding of the relevance and the use of technology (computers, mobile devices) in creating communication, and teaching and learning applications (NTS 3m).	<ul> <li>Discuss the relevance of the use of computers and handheld mobile devices in developing communication, and teaching and learning applications.</li> <li>Use computers or handheld devices in developing applications for communicating/collaborating with colleagues and creating learning resources.</li> </ul>

		resources.	
Course Co	ntent		
Unit/ Week	Торіс	Sub-topic if any)	Teaching and learning activity to achieve the learning outcomes
1	Nature of multimedia use in learning and conceptual issues	Conceptions, misconceptions and barriers to developing multimedia resources and use; The concept multimedia, educational technology and instructional technology; technology in education and technology of education; history of educational technology	<ul> <li>Use pyramid discussions with mixed ability/gender based pairings for misconceptions/barriers for using multimedia resources; tutor led discussions on conceptual issues; using power point to map or model the development of educational technology</li> </ul>
2	Instructional media production	<ul> <li>The concept of instructional media; Types of instructional media; Characteristics of media; Edgar Dale's "Cone of Experience"; Classification of instructional media; Techniques of instructional media production</li> </ul>	<ul> <li>Use animations/pictures on power point to stimulate discussion on types and characteristics; mixed ability/gender based group discussion and project on the techniques of media production</li> </ul>

3	Theories and principles of learning and instruction	<ul> <li>Concept of learning; principles of learning; Constructivist theories (e.g. Vygotsky and Piaget)</li> </ul>	<ul> <li>Student led discussion and panel discussion on the relevance of constructivist theories for multimedia use; using cases/ scenarios and concept mapping for the application of principles of learning.</li> </ul>
4	Instructional visual design and communication	<ul> <li>Basic elements of visual design; Principles for creating visual design; principles and barriers of communication; Instructional design models (only Dick &amp; Carey's model; ADDIE model)</li> </ul>	<ul> <li>Student led discussion with power point presentation on basic elements and principles of visual design; develop models on power point for discussion on designing models</li> </ul>
5	Models and material adaptation for inclusive classrooms and their uses	<ul> <li>Types of models (solid, cross section, construction and working models); diorama and puppets; Ways of developing learning materials using low/no cost resources; criteria for selecting materials; factors behind ineffective materials; Adaptive and Assistive Technologies (AATs) for SEN</li> </ul>	<ul> <li>Tutor led discussion on types of models and uses animations/visuals on power point; individual and group project on developing materials/models for teaching specific concepts with commentary; tutor led discussion on AATs (co- teach with SEN specialist)</li> </ul>
6	Handheld technologies (mobile and wireless learning)	<ul> <li>The concept handheld technology; Properties and relevance; communication and collaborating applications, and teaching and learning applications.</li> </ul>	<ul> <li>Tutor led discussion on use of handheld devices, properties and relevance; demonstration and group project on creating collaborating and teaching and learning applications.</li> </ul>
7	Storage and evaluation/audit of multimedia learning resources	<ul> <li>Need for storage of resources; ways of storing types of resources; SEN and gender audit/evaluation of resources using checklists</li> </ul>	<ul> <li>Group discussion on ways of storing resources;</li> <li>Audio-visual and tactile analysis of how multimedia resources are stored.</li> <li>Tutor led discussion on criteria for evaluating resource suitable for learners with diverse needs.</li> </ul>
Teaching a	and Learning Strategies		
• C • C • Ir • V • T • Is • T	Concept cartoons and concept maps Cooperative learning ndividual and group presentations Vriting of reflective notes 'hink-pair-share, debates shakawa or fishbone strategy 'eam teaching – co-planning and co-	teaching by tutors and lecturers with	
	alk for learning approaches- always liscussion etc	, sometimes, never true, convince yo	ursen, convince a friend; pyramid
1. C	Course Assessment Components		
	ent 1: Subject Portfolio Assessmen		
	ielected items of students work (3 o Aidterm assessment = 20%	f them -10% each) = 30%	
	Reflective Journal = 40%		
		= 10% (how it is presented /organise	d)
	Assessment (INDIVIDUAL AND GRC	UP PRESENTATIONS)	
	· · · ·		

#### <sup>1</sup>See rubrics on Subject Portfolio Assessment in Annex 6 of NTEAP

Summary of Assessment Method: i. mixed ability/ gender based group presentation on misconceptions/barriers and how to address them.

ii. Group presentation on conceptual issues on multimedia development, constructivist theories and principles of learning. Assesses Learning Outcomes: CLO 1 and CLO 2

#### <sup>2</sup>Component 2: Subject Project: (30% overall semester score)

- 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%

#### NOTE

Summary of Assessment Method:

1. Paired mid semester project using imitative, adaptive or creative production techniques and applying principles of design on media to develop TLMs for teaching selected topics.

2. Developing individual learning resources and applications using computer or handheld devices. All projects MUST come with commentaries of why, what, how it should be used and how to store them.

Group projects should be assessed by peers. Conduct SEN/gender audit and evaluation of material developed with reports (soft skills to be developed include: critical thinking, digital literacy, respect for diversity) Weighting: 40%

# Component 3: End of Semester Exams 40% NOTE

On multimedia development, constructivist theories and principles of learning using imitative and adaptive production techniques and applying principles of design on media/model development using creative production technique; developing learning resources and applications using computer or handheld devices, communication etc

Assesses Learning Outcomes: CLO 3 and CLO 4

Component 3: Summative (End of Semester Examination)

Summary of Assessment Method: End of Semester Examination on multimedia development, constructivist theories and principles of learning using imitative and adaptive production techniques and applying principles of design on media/model development using creative production technique; developing learning resources and applications using computer or handheld devices, communication (soft skills to be developed include: critical thinking, honesty) Weighting: 30%

Weighting: 30%

Assesses Learning Outcomes: CLO 1,2, 3 and 4

2. Required Reading and Reference List

Adeoye, B. F. (2015). Technology guide for teaching & learning. Ibadan-Nigeria: His Lineage Publishing House. Amoah, S. A., Laryea, P., &Amoako, B. M. (2016). Fundamentals of educational technology for effective teaching and learning. Winneba: University Press.

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Driscoll, M.P. (2005). *Psychology of learning for instruction*. Boston: Pearson Education Inc.

Gagne, R.M. & Briggs L.J. (1979). *Principles of instructional design* (2<sup>nd</sup> ed.). New York: Holt, Rinehalt, & Winston.

Gerlach, S. V., Ely, P. D., & Milnick, R. (1980). *Teaching and media: A systematic approach*. New Jersey: Englewood Cliffs. Heinich, R., Molenda, M., Russel, J. D., & Smaldino, E. S. (1996). *Instructional media and technologies for learning (5<sup>th</sup>ed)*. Prentice Hall.

Rowntree, D. (1982). *Educational technology in curriculum development*. London: Harper and Row.

Smaldino, S.E., Lowther, D.L., & Russell, D.J. (2008). *Instructional technology and media for learning* (9<sup>th</sup> ed.). Upper saddle River, NJ: EngleCliff Woods.

T-tel (2016): Professional development guide for tutors on teaching and learning materials. Theme 5

3. Course related professional development for tutors/ lecturers

Using handheld technologies and mobile devices to create learning applications

<sup>&</sup>lt;sup>2</sup>See rubrics on Subject Project Assessment in Annex 6 of NTEAP

Year of B.Ed. 2	Semester 1	Place of lesson in s	emester	<b>1</b> 2345678	9 10 11 12					
Title of Lesson	The nature and concep development and use	tions of multimedia	Less Dura	ion 3 I ation	Hours					
Lesson description	multimedia resources. resources shall also be	The lesson will deal with varying conceptions and meaning of concepts related to the use of multimedia resources. The biases and prejudices of student teachers about the use of resources shall also be explored in order to identify ways of addressing them. The relevance for the use of multimedia resources in teaching, the challenges and how they can be								
Previous student teacher knowledge, prior learning (assumed) Possible barriers to	play as a pedagogy lear requires the use of vari- teaching and learning re This first lesson introdu	Student teachers have knowledge, understanding and use various creative approaches and play as a pedagogy learnt form "inclusive school-based inquiry". The use of these strategies requires the use of various resources. They have also observed teachers use various teaching and learning resources during Supported teaching in Schools. This first lesson introduces student teachers to the course learning outcomes and the 3 assessment components of the course.								
learning in the lesson Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to- Practica face [ V ] I	Work-SeminarsIBased[ V ]S	ndependent Study V]	E-learning opportunities [ V]	Practicum					
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	E-learning opportunitie teaching and learning. Seminars: to generate and/or tutor led on the Independent study: to topic.	Seminars: to generate group and individual creativity, discussion and reflection; student and/or tutor led on the use various learning resources. Independent study: to enable student teachers to engage with relevant issues related to topic.								
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 a clear un technology and instruct They should also be abl	Practical activity: working in groups or individually on projects for presentation. Demonstrate a clear understanding among the concepts of multimedia, educational technology and instructional technology and how todevelop and use low-cost materials. They should also be able to explain the importance and challenges of using multimedia resources to address misconceptions, barriers to learning( <b>NTS 3m</b> ).								
<ul> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning</li> </ul>	Learning Outcomes	Learning Indicat		Identify which c issues – core an skills, inclusivity addressing dive these be addres developed?	d transferable , equity and rsity. How will					
outcome	Demonstrate a clear understanding among the concepts of multimedia, educational technology and instructional technology and how to develop and use low- cost materials. They should also be able to explain the importance and challenges of using	<ul> <li>Explain in writin importance of d and using multir resources in tea</li> <li>Examine the barriers/challen</li> </ul>	ng the timedia, nnology I g the eveloping nedia ching. ges to	<ul> <li>Communication through critication of the sentation of the sen</li></ul>	iquing and ns acy: Surfing the relevant on themes to d. nd innovation: out ways of appropriate					

	multimedia res to address misconceptions barriers to learn ( <b>NTS 3m</b> ).	teaching and learning in primary schools and how			using various strategies in grouping students considering their background characteristics and abilities.
Topic Title: The nature and conceptions of multimedia development and use	Sub-topic	Stage/ti	me	Teaching and learning activ depending on the delivery r collaborative group work o	mode selected. Teacher-led
				Teacher Activity	Student Activity
			<ul> <li>Face-to-face</li> <li>Review RPK of student teachers through questioning. Let them identify some resources or materials they prepared in order to make the use of some games, songs and puzzles they designed to support identified learners with difficulties during STS in year 1 (PD theme 2, 5)</li> </ul>	<ul> <li>Face-to-face</li> <li>Provide relevant answers to questions by talking about the various projects they worked regarding the use of games, songs etc. and the material they used in developing them.</li> </ul>	
	Concepts of multimedia resources	40 minu	tes	<ul> <li>Face-to-face</li> <li>Guide student using questioning skills for them to guess the topic for discussion. Through lecturette link RPK to the use of multimedia resources.</li> <li>Guide student teachers to use their phones and tablets to search for meaning of concepts related to the topic: <ul> <li>Multimedia resources</li> <li>Technology in education</li> <li>Educational technology</li> <li>Instructional technology</li> <li>Teaching and learning resources etc.</li> </ul> </li> <li>Pyramid discussion can be employed for different pairs of students to work on a</li> </ul>	<ul> <li>Face-to-face</li> <li>Listencarefully to questions and try to link RPK to topic to be discussed.</li> <li>Start working in pairs and look for the meaning of the different concepts assigned to each pair and compare meanings as groups build up.</li> <li>Present meanings of concepts to whole class and establish linkages.</li> <li>Write down meanings of the different concepts.</li> </ul>

use teo res der and bia	ed for the e of chnology source velopment d use, isses and sconceptio	minutes Ind •	different concept and compare and contract findings as groups build up. Discuss meanings read out with students and assist them through questioning to establish relationships between concepts. (PD theme 2, 3). Guide students to present findings. <b>dependent study</b> Let students work in pairs to discuss the need for technology in materials development and their use and the misconceptions and the biases people/teachers have and how this can be address drawing on their experiences during STS. Randomly select pairs of students to present findings for discussion on the three areas (in bold above). Use concept maps/webs to organize thoughts for students to copy.	<ul> <li>Independent study</li> <li>Work in pairs, explore their experiences during STS and randomly present findings for discussion.</li> <li>Organise presentation using concept maps or webs</li> </ul>
and cha for mu res tea lea pri		our 30 nutes •	Jependent study Guide students to explore their experiences during STS. Put them into small groups of 4 and 5 members to discuss strengths, challenges and how they can be addressed. These may be put under these suggested headings: Strengths/benefits: for teachers, fore learners, instructional management etc. Challenges (sources): teacher, learners, institution, community etc.	<ul> <li>Independent study</li> <li>Work in various small groups to discuss the benefits and challenges of using resources as observed during STS</li> <li>Using digital devices to also search for information and prepare scripts for presentation.</li> </ul>

<b></b>	,	1					
		prepare manuscript					
		for a brief					
		presentation.					
		Summarize lesson					
		after presentations					
		using questions and					
		give a reading					
		assignment. (PD 2, 4)					
		Reading Assignment					
		Direct student	• Read topics assigned for				
		teachers to read on	lesson 2 and make your				
		the history of	own notes.				
		educational					
		technology; types/					
		categories of					
		resources, their					
		general characteristics					
		of multimedia					
		resources (MRs) and					
		their use in					
		preparation for the					
		next lesson					
Losson occorrents	In-lesson Assessment:	Tiext lesson					
Lesson assessments – evaluation of learning: of,	Students prepare a reflective no	ote on the relevance of the use	of multimedia resources in				
for and as learning within	teaching, challenges encounter						
the lesson	could have addressed them.		ing 515 and now teachers				
	could have addressed them.						
	NTS 1a Critically and collectively	reflects to improve teaching	and learning				
	into the entitedity and concentrely						
Instructional Resources	Transforming Teacher Educ	ation and Learning (2016). Tea	ching and learning materials:				
Instructional Resources	_						
		guide for tutors. Accra. Ministr	y of Education (www.t-tel.org)				
	Mobile phones						
	Laptops						
	Videos from YouTube						
Required Text (core)	Adeoye, B. F. (2015). <i>Technolog</i>	y guide for teaching & learning	g. Ibadan-Nigeria: His Lineage				
	Publishing House.						
	Amoah, S. A., Laryea, P., & Amoa						
	for effective teaching and learn	•					
	Sarfo, F. K. (2008). Educational	technology. Kumasi: Wilas Pre	ss Ltd.				
	we size a Tanak an Estrantian an dut						
Additional Reading List	rmaing Teacher Education and Le	earning (2017). Teaching and le	earning materials. Accra:				
	Ministry of Education.						
	Instatule D. Mark, J. Mark, D.	Heinich, R., Molenda, M., Russel, J. D., &Smaldino, E. S. (1996). Instructional media and					
			). Instructional media and				
	technologies for learning	(5 <sup>th</sup> ed). Prentice Hall.					
	technologies for learning Rowntree, D. (1982). Education	(5 <sup>th</sup> ed). Prentice Hall.					
CPD needs	technologies for learning	(5 <sup>th</sup> ed). Prentice Hall. al technology in curriculum de	velopment. London: Harper				

Year of B.Ed. 2	Semester	1 Plac	e of less	on in seme	ester 12 a	45678910	11 12			
Title of Lesson	Instructional m	edia Productio	on		Less	on Duration	3 Hours			
Lesson description		esson will focus on the types and characteristics of multimedia resources. The specific features f the various types will be explored and their used discussed using various modes of delivery.								
Previous student teacher knowledge, prior learning (assumed) Possible barriers to	Have an unders inhibiting their styles under psy teaching during	Have an understanding of what multimedia resources are, their importance and challenges nhibiting their use in educational settings. They have also been exposed to different learning styles under psychological basis of learning and have observed resources being used for teaching during STS Biases towards the use of certain resources for teaching and learning.								
learning in the lesson Lesson Delivery – chosen	Face-to-face [									
to support student teachers in achieving the outcomes	v]	Activity [ √ ]	Based Leaning	[V]	Study [√]	opportunities [ √ ]				
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes. Overarching outcome, what you want the student teachers to achieve, serves as basis for the learning outcomes. An expanded version of the description.	<ul> <li>Face-to-face – Discussion, lecturette, think, pair share should be used in facilitating lessons.</li> <li>E-learning opportunities – Videos from YouTube on various kinds of resources used for teaching and learning.</li> <li>Seminars: to generate group and individual creativity, discussion and reflection; student and/or tutor led on the use various learning resources.</li> <li>Independent study: to enable student teachers to engage with relevant issues related to topic.</li> <li>Practical activity: working in groups or individually on projects for presentation.</li> <li>PD theme 1(Creative approaches) and theme 5 (teaching and learning materials)</li> <li>Demonstrate a clearknowledge of the types, general and specific characteristics of the types of multimedia resources (NTS 3c, j).</li> </ul>									
Write in full aspects of the NTS addressed  Learning Outcome for the lesson,	Learning Outco	mes	Lear	ning Indicato		dentify which cro	oss cutting			
picked and developed from the course specification • Learning indicators for each learning	transferable ski inclusivity, equi addressing dive will these be ad developed?						and ity. How			
outcome	Demonstrate knowledge of general and s characteristic types of multi resources ( <b>NT</b>	the types, pecific s of the media	<ul> <li>of ex relev learn</li> <li>Ident mult on th</li> <li>Discu the u of re</li> </ul>	tify the types imedia resou leir characte iss the impo ise of each o sources for t earning in pi	d its C thing and a b of C ristics. the ristics. p rtance of f f the types v reaching s rimary b	reativity and inner reating TLMs for nd learning nigital literacy: us nobile devices to nformation ommunication sl nrough critiquing resentations quity and inclusi arious strategies tudents consider ackground chara nd abilities.	teaching ing their search for kills: and vity: using in grouping ing their			

Topic title Types and characteristics of multimedia resources	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	<ul> <li>Face-to-face</li> <li>Review RPK based on students' knowledge of the meaning, strengths and challenges in using instructional media (PD theme 2)</li> </ul>	Provide relevance     responses to     questions asked			
	Edgar Dale's cone of experience Types and characteristics of resources	50 minutes	<ul> <li>Independent study</li> <li>Show a short video on Edgar Dale's cone of experience. Guide student teachers to analyse and discuss the relevance of using multimedia resources that appeals to multiple senses in teaching</li> <li>Put student teachers into smaller groups. Identify group leaders to select a type on behalf of the group for them to search on and present in class using power point and show illustrations and animations.</li> </ul>	<ul> <li>Independent study</li> <li>Watch video and do an analysis of the relevance of using multimedia resources for teaching and learning drawing on their experiences from STS</li> <li>Work in groups on the type chosen by the group.</li> <li>Preparepower point presentation with relevant illustrations and animations and</li> </ul>			
			<ul> <li>Groups should pick anyone of the following:</li> <li>Visual materials, audio materials, and audio visual material</li> <li>Guide groups toexamine their experiences during STS and focus on type, purpose, characteristics and importance for teaching and learning using a selected type of resource</li> <li>Group should select an 'expert' to do the presentation on their behalf (PD theme 2, 4)</li> </ul>	<ul> <li>select an 'expert' to present on behalf of the group.</li> <li>Observe, listen and ask questions after presentations.</li> <li>Peer assess and score presentation and quality of slides.</li> </ul>			
		60 hour	<ul> <li>Independent study</li> <li>In their small groups, guide student teachers to select a particular type of media from a category e.g radio, television, computer etc. and explain WHAT and HOW they can be used in teaching and learning. Groups may be guided to</li> </ul>	<ul> <li>Independent study</li> <li>Select a particular type of media and explain what and how they can be used in teaching. Various groups present their work</li> </ul>			
	Criteria for selecting and using multimedia resources	40 minutes	<ul> <li>present to whole class or do jigsaw/cross group presentations (PD theme 2, 3)</li> <li>Face-to-face</li> <li>Use lecturette and questioning to stimulate discussion on criteria for selecting and using resources (PD theme 2)</li> </ul>	Face-to-face • Listen and answer questions and use their mobile phones to search for information online			

	Closure	10 minutes	<ul> <li>Summarise lesson noting key issues raised.</li> <li>Give a reading assignment on topic to be treated in lesson 3: Theories and principles of learning.</li> </ul>	<ul> <li>Take note of key issues raised and topic to be treated in lesson 3.</li> </ul>			
Lesson assessments –	Formative Asse			- han an a			
evaluation of learning: of, for and as learning within the lesson			nixed ability/ gender groups on types, or rce for teaching and learning. Peers obs				
	and critical thin	<ul> <li>3e) Employs a variety of instructional strategies that encourages student participation and critical thinking</li> <li>3h) Sets meaningful tasks that encourages learner collaboration and leads to purposeful learning</li> </ul>					
Instructional Resources	<ul> <li>Transforming Teacher Education and Learning (2016). Teaching and learning materials: Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org)</li> <li>Mobile phones</li> <li>Laptops</li> <li>Videos from YouTube</li> <li>Animations and pictures</li> </ul>						
Required Text (core)	Adeoye, B. F. (2015). <i>Technology guide for teaching &amp; learning.</i> Ibadan-Nigeria: His Lineage Publishing House. Amoah, S. A., Laryea, P., &Amoako, B. M. (2016). <i>Fundamentals of educational technology for</i> <i>effective</i> <i>teaching and learning.</i> Winneba:University Press. Sarfo, F. K. (2008). <i>Educational technology.</i> Kumasi: Wilas Press Ltd.						
Additional Reading List	<ul> <li>Transformaing Teacher Education and Learning (2017). <i>Teaching and learning materials</i>. Accra: Ministry</li> <li>of Education.</li> <li>Heinich, R., Molenda, M., Russel, J. D., &amp;Smaldino, E. S. (1996). <i>Instructional media and technologies for learning (5<sup>th</sup>ed)</i>. Prentice Hall.</li> <li>Rowntree, D. (1982). <i>Educational technology in curriculum development</i>. London: Harper and Row</li> </ul>						
CPD needs	-	ative approac	hes) and Theme 5 (teaching and learnir	ng materials)			

Year of B.Ed. 2	Semester	1 Pla	ice of le	sson in sen	nester	12 <b>3</b> 4 5 6	7891(	) 11 12	
Title of Lesson	Theories and p	rinciples o	flearning	and instruct		esson Durat	ion 3	Hours	
Lesson description	learning. Stude development a	Lesson is designed to expose student teachers to the constructivist theories and principles of learning. Student teachers will examine how the theories and principles influence the development and use of multimedia resources for teaching and learning of primary school pupils with diverse needs.							
Previous student teacher knowledge, prior learning (assumed) Possible barriers to	resources by te topics related t May have little	Student teachers have observed the development and use of some teaching and learning resources by teachers during supported teaching in schools and have also read relevant topics related to the lesson. May have little knowledge and understanding of topic to be treated.							
learning in the lesson Lesson Delivery – chosen to support student teachers in achieving the outcomes	The large class Face-to-face [ √ ]	[V]	tunities	Practicum					
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	[ V]Leaning[ V][ V]Face-to-face – Discussion, lecturette, think, pair share should be used in facilitating lessons.E-learning opportunities – Videos from YouTube on various kinds of resources used for teaching and learning.Seminars: to generate group and individual creativity, discussion and reflection; student and/or tutor led on the use various learning resources.Independent study: to enable student teachers to engage with relevant issues related to topic.Practical activity: working in groups or individually on projects for presentation.							ed for student	
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									
<ul> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for</li> </ul>	Learning Outco	omes	Le	arning Indica	core inclu dive	tify which cr and transfe sivity, equit rsity. How w essed or dev	erable ski ty and ad vill these	lls, Idressing be	
Learning indicators for each learning outcome	Exhibit an unde and application constructivist t and the princip learning in the development a multimedia res (NTS 2e)	n of the heories les of nd use of	<ul> <li>rel</li> <li>co</li> <li>the</li> <li>de</li> <li>use</li> <li>ma</li> <li>pri</li> <li>pri</li> <li>lea</li> <li>of</li> <li>res</li> <li>div</li> <li>set</li> </ul>	scuss the evance of the nstructivist eories to velopment a e of learning aterials in mary schools ply the nciples of urning in the learning sources in verse learning ttings in prim nools.	e • • • • • • • • • • • • • • • • • • •	Communicat critiquing an Digital litera	tion skills ad presen acy: Surfi relevant o be disc velopmen n and dev n suppor for teac inclusivity cegies in characte king: Dev mining th	:: through itations ng the information ussed. nt: Through veloping of t of the use hing. y: using grouping their vristics and elops this neories and	

Topic Title:	Sub-topic	Stage/time	Teaching and learning activitie depending on the delivery mo collaborative group work or in	de selected. Teacher-led		
			Teacher Activity	Student Activity		
	Introduction		<ul> <li>Face-to-face</li> <li>Review RPK through questioning. Ask student teacher to share their observations on what and how primary school teachers use various resources in teaching. (PD theme 2)</li> </ul>	<ul> <li>Face-to-face</li> <li>Provide relevant answers by sharing observations during STS with class.</li> </ul>		
			<ul> <li>Lecturette and student-led discussion</li> <li>Select and guide two student teachers to lead discussion on the Vygotsky and Piajet's perspectives on constructivist theories</li> <li>Guide them to lead class to discuss their relevance for multimedia development and use.</li> <li>Give student teachers an assignment on comparing and contrasting the perspectives of the two proponents.Let students work in pairs (PD theme 2)</li> <li>Guide students to discuss the difference</li> </ul>	<ul> <li>Student-led discussion</li> <li>Participate in a student-led discussion on relevance of theories to use of resources.</li> <li>Write down the take home assignment.</li> <li>Compare and contrast constructivism from the perspectives of the two proponents.</li> <li>Discuss the differences and make notes.</li> </ul>		
			between constructivism and traditional teaching practices.			
			<ul> <li>Face-to-face</li> <li>Lead the discussion on the application of principles of learning using cases/ scenarios and concept mapping. (PD theme 2)</li> </ul>	<ul> <li>Face-to-face</li> <li>Participate in discussion by answering relevant questions and searching for information online using their mobile phones.</li> </ul>		
	Closure		<ul> <li>Guide student teachers to summarise lesson by identifying key points.</li> <li>Ask student teachers to read relevant topics for next lesson.</li> </ul>	<ul> <li>Answer questions and note down key points from the lesson.</li> <li>Take note of topic for lesson 4 and read on it.</li> </ul>		

Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<ul> <li>In-lesson Assessment:</li> <li>A take home assignment on comparing and contrasting Vygotsky and Piaget's perspectives on constructivism and its implications for development and use of resources.</li> <li>3e) Employs a variety of instructional strategies that encourages student participation and critical thinking</li> <li>3h) Sets meaningful tasks that encourages learner collaboration and leads to purposeful learning</li> <li>2e) Understands how children develop and learn in diverse contexts and applies this in his or her teaching</li> </ul>
Instructional Descurres	
Instructional Resources	<ul> <li>Transforming Teacher Education and Learning (2016). Teaching and learning materials: Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org)</li> </ul>
	Mobile phones
	Laptops
	Videos from YouTube
Required Text (core)	Adeoye, B. F. (2015). <i>Technology guide for teaching &amp; learning</i> . Ibadan-Nigeria: His Lineage
	Publishing House. Amoah, S. A., Laryea, P., &Amoako, B. M. (2016). <i>Fundamentals of educational technology</i>
	for effective teaching and learning. Winneba:
	University Press.
	Sarfo, F. K. (2008). Educational technology. Kumasi: Wilas Press Ltd.
Additional Reading List	Transformaing Teacher Education and Learning (2017). Teaching and learning materials.
	Accra: Ministry of Education.
	Heinich, R., Molenda, M., Russel, J. D., & Smaldino, E. S. (1996). <i>Instructional media and</i>
	<i>technologies for learning (5<sup>th</sup>ed).</i> Prentice Hall.
	Rowntree, D. (1982). <i>Educational technology in curriculum development</i> . London: Harper and
	Row
CPD needs	Constructivism and it application to the use of resources

Year of B.Ed. 2	Semester	1	Place of I	esson in se	emester	12	2 3 <b>4</b> 5 6	789	10 11 12
Title of Lesson	Instruction	al and visua	l design			Lesso Durat		3 Hou	rs
Lesson description	design. Les apply the v	son shall be	delivered in ples in deve	ents of visual various mod loping teach Is.	les and st	tudent	teachers a	are exp	ected to
Previous student teacher knowledge, prior learning (assumed)	observed t	eacher deve	oping and u	rstanding of t ising TLMs du	uring sup				-
Possible barriers to learning in the lesson				esources for t	_				
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face-to- face [ √]	Practical Activity [√]	Work- Based Leaning	Seminars [√]	Indeper Study [√]	ndent	E-learnin opportu [√]	-	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes. 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	E-learning a teaching an Seminars: and/or tuto Independe topic. Practical ac Demonstra	opportunitie nd learning. to generate or led on the nt study: to ctivity: worki te knowledg	s – Videos f group and in use various enable stud ng in groups te and unde	e, think, pair rom YouTube ndividual crea learning reso ent teachers s or individua rstanding of f al design. NTS	e on vario ativity, di ources. to engag <u>Illy on pro</u> the use o	ous kinc scussio ge with ojects fo	ls of resou In and ref relevant i or presen	urces us lection; issues r tation.	sed for student elated to
Learning Outcome for the lesson, picked and developed from the course specification	Learning O	utcomes		ning cators	core equi	and tr ty and	addressir	e skills, ng diver	issues – inclusivity, sity. How leveloped?
Learning indicators for each learning outcome	Demonstra knowledge understand use of basi of visual de the princip creating vis NTS 3m	and ling of the c elements esign and	elem prind desig appr teac learn for p	y basic nents and ciples of visua gn to develop opriate hing and hing material pupils in ary schools.	al • o s	critiqui Digital for rele to be d Person presen argume resourc Equity strateg conside	evant info iscussed. al develop tation and ents in sup ces for tea	esentat Surfing rmatior oment: d develo oport o aching. sivity: t uping st r backgr	tions the internet on themes Through oping of f the use of using various cudents round

Topic Title: Instructional and visual design	Sub-topic	Stage/time		tivities to achieve outcomes mode selected. Teacher-led or independent.
			Teacher Activity	Student Activity
	Introduction	20 minutes	<ul> <li>Face-to-face</li> <li>Review RPK through questioning the nature of some of the TLMs they have observed teachers use in class during supported teaching in schools. (PD theme 2)</li> </ul>	
	Basic elements of visual design	50 minutes	<ul> <li>Face-to-face&amp;E-learning         <ul> <li>Use videos and animations on slides to initiate discussions on the basic elements of visual design.</li> <li>Guide student teachers to illustrate how the elements can be used in generating various images (PD theme 2, 5)</li> </ul> </li> </ul>	<ul> <li>Face-to-face &amp;E-learning</li> <li>Watch/observe, analyse and answer questions.</li> <li>Use writing/drawing materialsto illustrate how the elements can be applied.</li> </ul>
	Principles of visual design	50 minutes	<ul> <li>Face-to-face &amp;E-learning         <ul> <li>Use videos and animations on slides to initiate discussions on the principles of visual design.</li> <li>Guide student teachers to illustrate how the principles can be used in generating various images (PD theme 2, 5)</li> </ul> </li> </ul>	<ul> <li>Face-to-face &amp;E-learning</li> <li>Watch/observe, analyse and answer questions.</li> <li>Use writing/drawing materials to illustrate how the principles can be applied.</li> </ul>
		60 minutes	<ul> <li>Independent study</li> <li>Assign student teachers a task. Guide them to combine both the elements and principles in sketching/drawing various simple images for display and peer review (PD theme 2, 5)</li> </ul>	<ul> <li>Independent study</li> <li>Apply the elements and principles in drawing/sketching images for display and peer review.</li> </ul>

Lesson assessments –	In-lesson Assessment:
evaluation of learning: of,	Peers assess and critique displayed images of colleagues and score.
for and as learning within	Weighting: 20%
the lesson	3e) Understands how children develop and learn in diverse contexts and applies this
	in his or her teaching
	3j) Produces and uses a variety of teaching and learning resources including ICT, toenhance
	learning.
Instructional Resources	• Transforming Teacher Education and Learning (2016). Teaching and learning materials:
	Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org)
	<ul> <li>Mobile phones</li> </ul>
	Laptops
	Videos from YouTube
	Drawing pads, pencils, pens
	Cardboards
	Resource person with expertise in art
Required Text (core)	Adeoye, B. F. (2015). Technology quide for teaching & learning. Ibadan-Nigeria: His Lineage
	Publishing House.
	Amoah, S. A., Laryea, P., & Amoako, B. M. (2016). Fundamentals of educational technology
	for effective teaching and learning. Winneba: University Press.
	Sarfo, F. K. (2008). Educational technology. Kumasi: Wilas Press Ltd.
Additional Reading List	Transformaing Teacher Education and Learning (2017). Teaching and learning materials.
-	Accra: Ministry
	of Education.
	Heinich, R., Molenda, M., Russel, J. D., &Smaldino, E. S. (1996). Instructional media and
	technologies for learning (5 <sup>th</sup> ed). Prentice Hall.
	Rowntree, D. (1982). Educational technology in curriculum development. London: Harper
	and Row
CPD needs	Using basic elements and principles in developing teaching and learning resources.

Year of B.Ed. 2	emester	1	Place	of lesson in se	emester <sub>1.</sub>	234	<b>5</b> 6789	10 11 12	
Title of Lesson	Concept	Concept and principles of effective communication Lesson Duration 3 Hou							
Lesson description	effective class and various n	The lesson is designed to expose student teachers to the concept and principles of effective communication. The model of communication, barriers to communication in class and how to address them shall also be discussed. Lesson shall be delivered using various modes of delivery in order to make it interactive.							
Previous student teacher knowledge, prior learning (assumed)	they are teachers co-teachi	used for inst teaching duing.	ructiona ring STS	g of the use of a l purposes. The and are also con	have observed t nmunicating wit	teach :h pui	ers also obs pils by co-pl	erved anning and	
Possible barriers to learning in the lesson				ching full classes ively communication		erore	nave difficu	ities in	
Lesson Delivery – chosen to support student teachers in achieving the outcomes	Face- to-face [ √]	Practical Activity [ √ ]	Work- Based Leaning	Seminars [ √]	Independent Study [ V ]		earning portunities ]	Practicum	
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	lessons. E-learnin principles Seminars and/or tu Independ topic.	<ul> <li>Face-to-face – Discussion, lecturette, think, pair share should be used in facilitating lessons.</li> <li>E-learning opportunities – Videos from YouTube on the communication model and principles of communication.</li> <li>Seminars: to generate group and individual creativity, discussion and reflection; student and/or tutor led on barriers to communication and how to address them.</li> <li>Independent study: to enable student teachers to engage with relevant issues related to</li> </ul>						l and n; student s related to	
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	Practical activity: working in groups or individually on projects for presentation. Demonstrate knowledge and understanding of application of principles of communication and how to deal with the barriers of communication in primary classrooms. NTS 3i								
<ul> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	Learning	Outcomes		Learning Indic	ators	cut tra inc ado wil	-	- core and cills,	
	of comm how to d barriers o commun	ge and nding of on of princip unication an eal with the of		Explain the con communicatio Identify the ele communicatio to teaching an primary schoo Discuss the set (7Cs) for ensur- communicatio schools. Examine barrie communicatio schools and ho them.	n ements of n with regard d learning in ls. ven principles ring effective n in primary ers to effective n in primary	•	Communic through cr presentati Digital lite Surfing the for relevan informatic themes to discussed. Personal developm Through p and develop	eracy: e internet nt on on be ent: resentation oping of s in support	

Topic Title: The concept and principles of effective communication	Sub-topic	Stage/time	Teaching and learning activities t depending on the delivery mode s collaborative group work or indep	elected. Teacher-led
			Teacher Activity	Student Activity
	Introduct	10 minutes	Face-to-face	• Liston attentively and
	ion	10 minutes	<ul> <li>Through questioning review student teachers RPK and link it to the topic for discussion. (PD theme 2)</li> </ul>	<ul> <li>Listen attentively and answer questions related to RPK.</li> </ul>
	The	20 minutes	Face-to-face	Face-to-face
	concept 'commun ication'		<ul> <li>Guide pupils to think-pair and share the meaning of communication. Let them use their phones to search for various meanings and definitions and share with class.</li> <li>Guide to them to explain communication within the context of teaching and learning (PD theme 2, 3, 5)</li> </ul>	<ul> <li>Think-pair and share the meaning of communication with peers.</li> <li>Use phones to search for meaning and share with whole class.</li> <li>Explain the meaning in the context of teaching and learning.</li> </ul>
	Elements	40 minutes	Independent study and E-	Independent study and E-
	of communi cation		learning Put student teachers in small groups to search for the elements of communication using their phones and discuss in their groups.	<ul> <li>Work in small groups on the elements of communication and present to class for discussion</li> </ul>
			<ul> <li>Guide selected groups to share their findings with the whole class for discussion.</li> <li>Project a model on slides illustrating the various elements and their interactions (Encoder, channel, decoding etc.)</li> <li>Guide student teachers to examine and identify who/what these elements represent in the classroom context, for example Encoder-teacher. (PD theme 2, 3, 4, 5)</li> </ul>	<ul> <li>Observe communication model, identify elements and how they interact and explain</li> <li>Explain who/what the elements represent in the teaching and learning context.</li> </ul>
	Principles	50 minutes	Independent study	Independent study and E-
	for effective communi cation		<ul> <li>Put student teachers into seven groups and share the seven principles amongst them. Guide each group to examine the meaning of the principles and how it applies</li> </ul>	<ul> <li>Work in various groups on a principle and share information with other groups through jigsaw or</li> </ul>

	Barriers to communi cationan d how to address them	60 minutes	<ul> <li>in the classroom context.</li> <li>Guide pupils to do jigsaw or cross group presentations.</li> <li>Let groups present to whole class and use concept maps to organize information provided. (PD theme 2, 3, 4, 5)</li> <li>Face-to-face &amp; independent study</li> <li>Through questioning and brainstorming, guide student teachers to identify barriers to communication in the classroom and during teaching and learning.</li> <li>Put student teachers into small groups consistent with the number of barriers identified.</li> <li>Guide them to discuss what the barriers are and how they can be addressed by the teacher to ensure effective teaching and learning.</li> <li>Guide student teachers to do a jigsaw or cross group presentation. (PD theme 2,</li> </ul>	<ul> <li>cross group presentations.</li> <li>Each group presents to whole class for further discussion.</li> <li>Face-to-face &amp; independent study</li> <li>Brainstorm on barriers to communication in class by using your phones to search.</li> <li>Work in groups on barriers assigned and how they can be addressed.</li> <li>Present findings to</li> </ul>	
			3, 4, 5)	other groups for discussion.	
			<ul> <li>Guide groups to present to whole class briefly on the barrier and how to deal/address it as a teacher. (PD theme 2)</li> </ul>		
Lesson assessments –	Assessmen	t for and of le		1	
evaluation of learning: of, for and as learning within the lesson	Jigsaw and Peers listen	whole class gr and ask ques	oup presentation of principles of cor		
	3i) Explains	concepts clea s and uses a v	rly using examples familiar to studer ariety of teaching and learning resou	nts.	
Instructional Resources	Transformin Professiona Mobile pho Laptops Videos fron	ng Teacher Ed I development nes n YouTube	ucation and Learning (2016). <i>Teachir</i> t guide for tutors. Accra. Ministry of I	Education (www.t-tel.org)	
Required Text (core)	Videos from YouTube Adeoye, B. F. (2015). <i>Technology guide for teaching &amp; learning</i> . Ibadan-Nigeria: His Lineage Publishing House. Amoah, S. A., Laryea, P., &Amoako, B. M. (2016). <i>Fundamentals of educational technology</i> <i>for effective teaching and learning</i> . Winneba: University Press. Sarfo, F. K. (2008). <i>Educational technology</i> . Kumasi: Wilas Press Ltd.				
Additional Reading List	Transforma Accra: Mini of Educatio	stry	ducation and Learning (2017). Teach	ing and learning materials.	

	<ul> <li>Heinich, R., Molenda, M., Russel, J. D., &amp;Smaldino, E. S. (1996). Instructional media and technologies for learning (5<sup>th</sup>ed). Prentice Hall.</li> <li>Rowntree, D. (1982). Educational technology in curriculum development. London: Harper and Row</li> </ul>
CPD needs	

Year of B.Ed. 2	Semester 1	Place of le	esson in ser	mester 12	3 4 5 <b>6</b> 7 8 9	10 11 12		
Title of Lesson	Concept, Types, Charac community resources	cteristics and	Lesson	Duration	3 Hours			
Lesson description	The lesson is designed to expose student teachers to the concept of community resources, the types and how they are used for instructional purposes. Lesson shall be delivered using various modes of delivery in order to make it interactive.							
Previous student teacher knowledge, prior learning (assumed)	are used for instruction various materials from	Knowledge and understanding of the use of audio and audio-visual resources and how they are used for instructional purposes. The have observed teachers developing and using various materials from the community to teach during supported teaching in schools. They can also apply basic elements and principles in developing materials for teaching and						
Possible barriers to learning in the lesson Lesson Delivery – chosen	Biases towards the use Face-to-face Practica	_	esources for t	eaching Independent	E-learning	Practicum		
to support student teachers in achieving the outcomes	[√] Activity [√]	Based Leaning	[v]	Study [√]	opportunitie [√]	S		
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes. 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	<ul> <li>Face-to-face – Discussion, lecturette, think, pair share should be used in facilitating lessons.</li> <li>E-learning opportunities – Videos from YouTube on various kinds of resources used for teaching and learning.</li> <li>Seminars: to generate group and individual creativity, discussion and reflection; student and/or tutor led on the use various learning resources.</li> <li>Independent study: to enable student teachers to engage with relevant issues related to topic.</li> <li>Practical activity: working in groups or individually on projects for presentation.</li> <li>Demonstrate knowledge and understanding of how community resources can be used for teaching and learning in diverse learning contexts. (NTS 3 c, j)</li> </ul>							
<ul> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	Learning Outcomes Learning Indicators			ators	Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?			
	Demonstrate knowledg and understanding of h community resources of be used for teaching ar learning in diverse learning contexts. (NTS c, j)	iow rr ian c id 3 n r e E le fr c c	naterials from esources xplain how te earning mater rom commun	ed on their g and learning n community eaching and rials developed ity resources t each various	<ul> <li>commu to deve</li> <li>Commu through present</li> <li>Digital Surfing for relevinforma themes discusse</li> <li>Equity a using value</li> </ul>	ion: Using nity resources lop TLMs nication skills: o critiquing and ations literacy: the internet vant tion on to be ed. and inclusivity:		

				students considering
				their background
				characteristics and
Toute This	Cult touts	Charles Island		abilities.
Topic Title:	Sub-topic	Stage/time	Teaching and learning activities to depending on the delivery mode s	
			collaborative group work or indep	
			Teacher Activity	Student Activity
	Introduction		Face-to-face	otadentrictinty
	introduction		<ul> <li>Guide a student teacher in</li> </ul>	<ul> <li>Provide relevant</li> </ul>
			leading the class to review	answers to questions
			RPK on multimedia resources	relating to RPK.
			and the resources teachers	
			use that have been observed	
			during STS.	
			Face-to-face& student-led discussion	Face-to-face & student-led discussion
			Guide selected expert	A selected student
			student teacher to facilitate	leads discussions.
			lesson by using questioning	Respond to questions.
			to explore student teachers	Use mobile phones to
			understanding of community	search for information
			resources. (PD theme 2, 4, 5)	relative to questions asked.
			<ul><li>and types of TLMs:</li><li>Paper made TLMs</li></ul>	dskeu.
			Wood made TLMs	
			Metal made TLMs	
			Plastic made TLMs	
			Practical work	Practical work
			Guide expert student	• Work in groups on the
			teacher(s) to put peers into	type of material
			small groups for them to select any one of the types	selected and follow guidelines provided by
			and explain what it is;	expert student
			indicate types of materials	teacher.
			that can be created from	
			that material, characteristics,	
			criteria, importance and how	
			they can be preserved/stored.	
			preserveu/storeu.	
			• Assist expert student teacher	• Present assignment in
			to guide groups to present	posters to whole class
			whole class for discussion.	for discussion.
			(PD theme 2, 3, 4, 5)	Due attack A attach
			<ul><li>Practical activity</li><li>Pair student teachers in their</li></ul>	<ul><li>Practical Activity</li><li>Work in pairs to</li></ul>
			<ul> <li>Pair student teachers in their groups to prepare a TLM</li> </ul>	<ul> <li>work in pairs to produce a TLM based</li> </ul>
			from selected material and	on instructions given
			explain how and what it can	and present before
			be used to teach in their	next lesson.
			specialisms.	
			• This has to be presented	
			<ul> <li>This has to be presented before the next lesson. (PD</li> </ul>	
			theme 4, 5)	
	1			

Lesson assessments –	Formative Assessment:
evaluation of learning: of,	In-lesson assessment of presentation by peers
for and as learning within	TLM prepared and presented should count towards grading: 20%
the lesson	
	3i) Explains concepts clearly using examples familiar to students.
	3j) Produces and uses a variety of teaching and learning resources including ICT, toenhance
	learning.
Instructional Resources	Mobile phones
	Laptops
	Videos from YouTube
Required Text (core)	Adeoye, B. F. (2015). Technology guide for teaching & learning. Ibadan-Nigeria: His Lineage
	Publishing
	House.
	Amoah, S. A., Laryea, P., & Amoako, B. M. (2016). Fundamentals of educational technology
	for effective teaching and learning. Winneba:University Press.
	Sarfo, F. K. (2008). Educational technology. Kumasi: Wilas Press Ltd.
Additional Reading List	Transformaing Teacher Education and Learning (2017). Teaching and learning materials.
	Accra: Ministry
	of Education.
	Heinich, R., Molenda, M., Russel, J. D., &Smaldino, E. S. (1996). Instructional media and
	<i>technologies for learning (5<sup>th</sup>ed)</i> . Prentice Hall.
	Rowntree, D. (1982). Educational technology in curriculum development. London: Harper and
	Row
CPD needs	Preparing TLM using various community resources

Ye	ar of B.Ed. 2	Semester	1	Place of	lesson in s	semester	12 3 4 5	6 <b>7</b> 89	10 11 12
Title	e of Lesson	Instructional a	nd visual D	esign II			Lesson Duration	31	lours
Les	son description	This lesson is aimed at introducing student teachers to two instructional design models, Dick and Carey's Model and ADDIE Model. This lesson aims at helping student teachers to apply the knowledge on basic elements of visual design, and principles for creating visual design to the use of Dick and Carey's Model and ADDIE Model in designing instruction for effective learning outcomes.							
teac pric (ass	vious student cher knowledge, or learning sumed)	Student teachers have been exposed to the concept of instructional media, types and characteristics of instructional media. Again, student teachers have been introduced to basic elements of visual design, and principles for creating visual design.							
Possible barriers to learning in the lesson Lesson Delivery –		Challenges faced with inadequate ICT related resources and to design, as well as unstable internet connectivity. Large class si Face-to-face Practical Work- Seminars Independer				ize could also be a barrier.			
stud	sen to support dents in achieving outcomes	[v]	Activity [V ]	Based Leaning	[]	Study [	oppor [ √ ]	rtunities	
moo cho stud ach	son Delivery – main de of delivery sen to support dent teachers in ieving the learning comes. Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed Learning Outcome for the lesson, picked and	livery upport chers in he learningPractical work, Independent study and seminars: Jigsaw with cross grouping to enable student teachers to work in groups to discuss and present project reports. E-learning opportunities: Watching of short videos, animations and using digital devices for searching, assembling and presenting information.ching he, what you he students eve, serves s for the g outcomes. anded hof the tion.By the end of the lesson, it is expected that student teachers would be able to design and develop a learning material/model for learning any concept in a specific subject area by applying Dick and Carey's Model and ADDIE Model. Through this, it is expected that student teachers would understand and appreciate the need for collaboration, team work and communication by considering gender and equality, diversity and SEN, as well as integrating ICT in instructional processes (NTS 1a, 2c, 3c, 3d, 3e, 3f, 3g, 3m, 3p).anded to of the tion. n full aspects NTS sedLearning OutcomesLearning Indicatorsg OutcomeLearning OutcomesLearning Indicators							
•	picked and developed from the course specification Learning indicators for each learning	eveloped from the ourse specification earning indicators						transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?	
	outcome	Demonstrate k understanding concept, instru Demonstrate k understanding using Carey's N designing instr learners in incl developmenta upper primary Demonstrate k understanding	of the actional des chowledge, and skills i Model in ruction for lusive and Ily appropr classrooms chowledge,	sign. n iate • s.	as a means instruction outcomes in multi-grade developmen appropriate classrooms. Explain the Carey's Mod in designing	and ntally upper prima features of del and apply	gn • Ir u fr o rr • C rr c t t p it • G	ntegratior	ie ion and ation oup ons. quity

	using ADDIE Model in designing instruction for learners in inclusive and developmentally appropriate upper primary classrooms. Demonstrate knowledge and understanding on difference and similarities between Carey's Model and the ADDI Model, and the advantages of using them during instructional activities in inclusive and developmentally appropriate upper primary classrooms.		<ul> <li>learning in a specific upper primary subject.</li> <li>Explain the features of ADDIE Model and apply it in designing and developing materials for learning in a specific upper primary subject area.</li> <li>Discuss the differences and similarities between Carey's Model and ADDIE Model, and the advantages of using them during instructional activities in inclusive and developmentally appropriate upper primary classrooms.</li> </ul>	<ul> <li>distribution of teaching and learning opportunities in and out of classroom, inclusivity, and diversity through acknowledgment of individual differences in the classroom.</li> <li>Reflection and critical thinking for self- awareness through multi and varied interactive strategies to support learners with diverse characteristics.</li> <li>Creativity and innovation: developing TLMs using various designs</li> </ul>		
Topic Title: Instruction and Visual Design II	ruction and Visual		Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led			
Design II	Sub-topic	Stage/time	collaborative group work or inde Teacher Activity	Student Activity		
	Instructional Design Models (Carey's Model and ADDIE Model)	40 minutes 70 minutes	<ul> <li>Face-to-face:         <ul> <li>Use questioning and shower thought to assist student teachers to review their previous knowledge and experiences on the use of assistive and adaptive devices in instructional processes to introduce lesson to explain instructional design. Use tutor-led discussion to introduce student teachers to Carey's Instructional Design Model and ADDIE Instructional Model (PD Theme 2; pp. 5-14; PD Theme 3; pp. 75-82).</li> </ul> </li> <li>Independent Study and Practical Work/Project:         <ul> <li>Use jigsaw with cross grouping to enable student teachers to discuss and apply Carey's Instructional Design Model and ADDIE Instructional Design Model to design materials for learning in a specific subject for an inclusive upper primary classroom as a project work to be submitted for marking (PD</li> </ul> </li> </ul>	<ul> <li>Face-to-face</li> <li>Student teachers share and build on their knowledge and experiences on the use of assistive and adaptive devices in instructional processes to explain instructional design. Through tutor-led discussion, student teachers understand the characteristics of Carey's Instructional Design Model and ADDIE Instructional Model.</li> <li>Student teachers, in jigsaw with cross grouping, design materials for learning in a specific subject for an inclusive upper primary classroom and submit their project work for marking.</li> </ul>		

	70 minutes	Theme 4; pp. 69-98; PD	Independent Study and			
		Theme 5; pp. 29-60).	Practical Work/Project:			
			Discuss assigned			
			models in groups and			
		Independent Study:	do a jigsaw or cross			
		Use mixed gender and	presentation.			
		mixed attainment group work to assist student	Indonondont Study:			
		teachers to discuss the	<ul> <li>Independent Study:</li> <li>Through mixed</li> </ul>			
		differences and similarities	gender and mixed			
		between Carey's Model	attainment group			
		and ADDIE Model, and the	activities, student			
		advantages of using them	teachers discuss the			
		in inclusive upper primary	differences and			
		classrooms. Groups are to	similarities between			
		present their findings in a	Carey's Model and			
		poster form (PD Theme 4;	ADDIE Model, as well			
		pp. 19-44).	as the advantages of			
			using them in			
			inclusive upper			
		<ul> <li>Guide student teachers to examine how the models</li> </ul>	primary classrooms. Student teachers			
		are applicable in classroom	present their findings			
		contexts	in a poster form.			
			Examine the			
			application of the			
			models in real life			
			contexts.			
Lesson assessments –	In-lesson Assessment:					
evaluation of learning: of, for and as learning	Group presentation on Differences and similarities between Carey's Model and ADDIE Model,					
within the lesson	advantages of using Carey's Instructional Design Model and ADDIE Instructional Design Model. Discuss its application in real life contexts.					
	This should be part of summative assessment					
	3i) Explains concepts clearly using examples familiar to students.					
	3j) Produces and uses a variety of teaching and learning resources including ICT, toenhance					
	learning. 3e) Employs a variety of instructional strategies that encourages student participation and critical thinking					
Instructional Resources	TESSA (2016). <i>Inclusive education tool kit</i> . Walton Hall: United Kingdom					
	Transforming Teacher Education and Learning (2016). Talk for learning: Professional					
	development guide fortutors. Accra. Ministry of Education ( <u>www.t-tel.org</u> ). Transforming Teacher Education and Learning (2016). <i>Group work: Professional development</i>					
	guide for tutors.Accra. Minist	ry of Education ( <u>www.t-tel.org</u> ).				
	guide for tutors.Accra. Minist Transforming Teacher Educat	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questionin</i>				
Required Text (core)	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Minist	ry of Education ( <u>www.t-tel.org</u> ).				
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Minist YouTube	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ).	g: Professional development			
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Minist YouTube	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questionin</i>	g: Professional development			
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Minist YouTube Adeoye, B. F. (2015). Technolo Publishing House. Amoah, S. A., Laryea, P., &Am	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ). ogy guide for teaching & learning. Ib oako, B. M. (2016). Fundamentals o	g: Professional development adan-Nigeria: His Lineage			
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Minist YouTube Adeoye, B. F. (2015). Technolo Publishing House. Amoah, S. A., Laryea, P., &Am effective teaching and learnin	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ). ogy guide for teaching & learning. Ib oako, B. M. (2016). <i>Fundamentals o</i> g.Winneba: UEW Press.	g: Professional development adan-Nigeria: His Lineage f educational technology for			
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Ministr YouTube Adeoye, B. F. (2015). Technolo Publishing House. Amoah, S. A., Laryea, P., &Am effective teaching and learnin Gagne, R. M. & Briggs, L. J. (19)	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ). ogy guide for teaching & learning. Ib oako, B. M. (2016). Fundamentals o	g: Professional development adan-Nigeria: His Lineage f educational technology for			
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Ministr YouTube Adeoye, B. F. (2015). Technolo Publishing House. Amoah, S. A., Laryea, P., &Am effective teaching and learnin Gagne, R. M. & Briggs, L. J. (19) Rinehalt,& Winston.	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ). ogy guide for teaching & learning. Ib oako, B. M. (2016). <i>Fundamentals o</i> g.Winneba: UEW Press. 079). Principles of instructional desig	g: Professional development adan-Nigeria: His Lineage f educational technology for gn (2 <sup>nd</sup> ed.). New York: Holt,			
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Ministr YouTube Adeoye, B. F. (2015). Technolo Publishing House. Amoah, S. A., Laryea, P., &Am effective teaching and learnin Gagne, R. M. & Briggs, L. J. (19 Rinehalt, & Winston. Sarfo, F. K. (2008). Educationa	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ). ogy guide for teaching & learning. Ib oako, B. M. (2016). <i>Fundamentals o</i> g.Winneba: UEW Press. 079). Principles of instructional designation of the second se	g: Professional development adan-Nigeria: His Lineage f educational technology for gn (2 <sup>nd</sup> ed.). New York: Holt, rd.			
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Ministr YouTube Adeoye, B. F. (2015). Technolo Publishing House. Amoah, S. A., Laryea, P., &Am effective teaching and learnin Gagne, R. M. & Briggs, L. J. (19 Rinehalt,& Winston. Sarfo, F. K. (2008). Educationa Transforming Teacher Educat	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ). ogy guide for teaching & learning. Ib oako, B. M. (2016). <i>Fundamentals o</i> g.Winneba: UEW Press. 979). Principles of instructional design I technology. Kumasi: Wilas Press Lt ion and Learning (2016). <i>Teaching a</i>	g: Professional development adan-Nigeria: His Lineage f educational technology for gn (2 <sup>nd</sup> ed.). New York: Holt, rd. nd learning materials:			
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Ministr YouTube Adeoye, B. F. (2015). Technolo Publishing House. Amoah, S. A., Laryea, P., &Am effective teaching and learnin Gagne, R. M. & Briggs, L. J. (19 Rinehalt,& Winston. Sarfo, F. K. (2008). Educationa Transforming Teacher Educat Professional developme	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ). ogy guide for teaching & learning. Ib oako, B. M. (2016). <i>Fundamentals o</i> g.Winneba: UEW Press. 079). Principles of instructional designation of the second se	g: Professional development adan-Nigeria: His Lineage f educational technology for gn (2 <sup>nd</sup> ed.). New York: Holt, rd. nd learning materials:			
Additional Reading List	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Ministr YouTube Adeoye, B. F. (2015). Technolo Publishing House. Amoah, S. A., Laryea, P., &Am effective teaching and learnin Gagne, R. M. & Briggs, L. J. (19 Rinehalt,& Winston. Sarfo, F. K. (2008). Educationa Transforming Teacher Educat Professional development tel.org).	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ). ogy guide for teaching & learning. Ib oako, B. M. (2016). <i>Fundamentals o</i> g.Winneba: UEW Press. 979). Principles of instructional design I technology. Kumasi: Wilas Press Lt ion and Learning (2016). <i>Teaching a</i>	g: Professional development adan-Nigeria: His Lineage f educational technology for gn (2 <sup>nd</sup> ed.). New York: Holt, ed. nd learning materials: of Education (www.t-			
	guide for tutors.Accra. Ministr Transforming Teacher Educat guide for tutors. Accra. Ministr YouTube Adeoye, B. F. (2015). Technolo Publishing House. Amoah, S. A., Laryea, P., &Am effective teaching and learnin Gagne, R. M. & Briggs, L. J. (19 Rinehalt,& Winston. Sarfo, F. K. (2008). Educationa Transforming Teacher Educat Professional development tel.org). Driscoll, M.P. (2005). Psycholog	ry of Education ( <u>www.t-tel.org</u> ). ion and Learning (2016). <i>Questioning</i> ry of Education ( <u>www.t-tel.org</u> ). ogy guide for teaching & learning. Ib oako, B. M. (2016). <i>Fundamentals o</i> g.Winneba: UEW Press. 079). Principles of instructional design al technology. Kumasi: Wilas Press La ion and Learning (2016). <i>Teaching a</i> <i>ent guide for tutors</i> . Accra. Ministry	g: Professional development adan-Nigeria: His Lineage f educational technology for gn (2 <sup>nd</sup> ed.). New York: Holt, ed. nd learning materials: of Education (www.t- n: Pearson Education Inc.			

	Smaldino, S.E., Lowther, D.L., & Russell, D.J. (2008). <i>Instructional technology and media for learning</i> (9 <sup>th</sup> ed.). Upper saddle River, NJ: Engle Cliff Woods
CPD needs	Workshop on instructional design models

Year of B.Ed.	2	Semeste	er 1	Place of	lesson in se	mester	12 3	4567 <b>8</b> 9	9 10	11 12
Title of Lesson			nd Material		osson D	Juration	2 11	Durc		
Lesson description		Classrooms and their Uses ILesson Duration3 HoursThis lesson aims at exposing student teachers to types of models by specifically considering solid models, cross section models, construction and working model, dioramas and puppets. The lesson also seeks to introduce student teachers to the appropriate ways of developing								sidering puppets.
Previous student tea knowledge, prior lea (assumed)		Student t creating ADDIE In instructio videos fro develope	learning materials using low or no cost resources. Student teachers have been introduced to basic elements of visual design, principles for creating visual design, and instructional design models (Carey's Instructional Design Model and ADDIE Instructional Model). Student teachers have also observed their teachers applying instructional design models in their instructional activities. Again, they have watched short videos from YouTube and other online resources about how instructional design models are developed and used to teach.							
Possible barriers to learning in the lessor Lesson Delivery – cho		-	ete ICT tools a	and poor int	ernet connectiv				be a	barrier. Practicum
to support students i achieving the outcom	n	Face- to-face [√]	Activity	Based Leaning	[]	Indeper Study [√]	ident	E-learning opportunit	ies	Flacticum
<ul> <li>Lesson Delivery – ma mode of delivery cho to support student teachers in achieving learning outcomes.</li> <li>Overarching outo what you want t students to achie serves as basis for learning outcome expanded versio the description.</li> <li>Write in full aspe the NTS addresse</li> </ul>	sen the come, he eve, or the es. An n of ects of ed	E-learnin simulatio of develo Practical work in g of model Student t models, i They wou ways of c that stud specific c in School equity, d thinking 3d, 3e, 3	g opportuni ons from You oping types o Work and Po- groups to des s. eachers wou ncluding soli ald also be ex- developing le ent teacher o oncepts in in s (STS). It is a iversity, colla would be dev f, 3g, 3m, 3p	ity and Inde Tube and ot f models for roject: Use ign learning Id be able to d, cross sect xpected to d arning mate would be ab hoclusive upper also the expension, te veloped amo	igsaw with cros materials using o demonstrate ion, constructio emonstrated ki rials using low/ le to develop d er primary class ectation that co am work, comr ong student tea	urces desi ss groupin g low or no knowledge, nowledge, no cost re eveloping crooms, es re and tra nunication chers at th	gned on g to ena o cost re e and ur prking m , unders esources materia specially unsferab n, reflec	able student able student sources bas nderstanding odels, dioral tanding and project wor ils/models for during Supp le skills inclu tive practice of the lesson	teach ed on g of th ma ar skills k. It i or tea oorteo ding and . (NTS	wing ways hers to the types ne types of ad puppets. on the s expected ching d Teaching gender, critical 5 <b>1a, 2c, 3c,</b>
<ul> <li>Learning Outcom the lesson, picke developed from course specificat</li> <li>Learning indicato each learning outcome</li> </ul>	d and the ion		Outcomes		Learning Indicators			Identify wh cutting issu transferabl inclusivity, addressing will these to developed	ies – le skil equit dive be ade ?	core and ls, y and rsity. How dressed or
		and under types of a section, of working a and pupp designing teaching in inclusion classroor Demonst understa developin	erstanding of models (solid construction models, diora oets) used for g materials for specific cond ve upper prir	the d, cross and ama r or cepts mary dge, ills in	Create variou (solid, cross s construction models, diora puppets) for specific conce upper primar using low-cos Develop learn for teaching s concepts in in primary class low or no cos	ection, and worki ama and teaching epts in inc y classroo st materia ning mate specific nclusive uj rooms usi	lusive oms ls. rials pper ing	innova TLMs u Integra utilisin from Y	tion: using ation g sho ouTu online oratic unicat h gro tation r, equ h fair	developing models of ICT by rt videos be and resources. n and tion up ns. hity

	specific concepts in inclusive upper primary classrooms using low or no cost resources.			<ul> <li>teaching and learning opportunities in and out of classroom, inclusivity, and diversity through acknowledgment of individual differences in the classroom.</li> <li>Reflection and critical thinking for self- awareness through multi and varied interactive strategies that would support learners with diverse characteristics.</li> </ul>
Topic Title: Models and material adaptation for inclusive primary school	Sub-topic	Stage/time		vities to achieve outcomes mode selected. Teacher-led r independent.
settings			Teacher Activity	Student Activity
	Models and material development	45 minutes	<ul> <li>Face-to-face:</li> <li>Use questioning and shower thought to review student teachers' relevant previous knowledge on the lesson (PD Theme 2; pp. 5-14; PD Theme 3; pp. 75-82).</li> <li>Use questioning and whole class discussion on the types of models (solid, cross section, construction and working models, diorama and puppets) (PD Theme 2; pp. 5-14; PD Theme 3; pp. 75-82).</li> </ul>	<ul> <li>Face-to-face</li> <li>Student teachers share their understanding of their relevant previous knowledge and experiences.</li> <li>Student teachers share their views and experiences on types of models (solid, cross section, construction and working models, diorama and puppets) used for designing materials for teaching specific concepts in inclusive upper primary classrooms.</li> <li>E-learning Opportunity</li> </ul>
		90 minutes	<ul> <li>E-learning Opportunity and Independent Study:</li> <li>Use short videos, animations and simulations from YouTube and other online resources designed on power point showing ways of developing types of models for learning in upper primary classrooms using low or no cost resources, after which comments and discussions are made (PD Theme 5; pp. 29-60).</li> </ul>	<ul> <li>E-learning Opportunity and Independent Study:</li> <li>Student teachers watch short videos, animations and simulations from YouTube and other online resources designed on power point showing ways of developing types of models for learning in upper primary classrooms using low or no cost resources after which discussions are made.</li> </ul>

		Practical Work and	Practical Work and
		Project:	Project:
		Guide	Undertake a project
		studentteachers to	by designing learning
		work in small groups	materials using low or
		to design learning	no cost resources
		materials using low or	based on the types of
		no cost resources	models (solid, cross
		based on the types of	section, construction
		models (solid, cross	and working models,
		section, construction	diorama and puppets)
		and working models,	in a particular subject
		diorama and puppets)	area. Submit their
		to teach concepts in	project work for
		their subject area	assessment in a week.
		Let student teachers	assessment in a week.
		submit their group	
		project work within the week. 9PD Theme	
		3; pp. 65-72; PD	
1		Theme 4; pp. 69-98).	
Lesson assessments –	Formative Assessment: Assessment		
evaluation of learning: of,	using low or no cost resources for d		
for and as learning within	in their specialisms to be submitted	at the end of the semester. If	is should be part of week 11
the lesson	project.		
	Assessment weight: 30 %		
	1a) Critically and collectively reflect	to improve teaching and lear	ning
	2f) Takes accounts of and respects l		
		-	
	educational backgrounds in plannin		
	3c) Creates a safe, encouraging lear		including ICT teenhance
	3j) Produces and uses a variety of te	acting and learning resources	including ICT, toennance
Instructional Resources	learning. TESSA (2016). Inclusive education to	ol kit Walton Hall: United Kin	adom
Instructional Resources	Transforming Teacher Education an		_
	guide for tutors. Accra. Ministry of E		Projessional development
	Transforming Teacher Education an		rning: Drofossional
	development guide for tutors. Accra		
	Transforming Teacher Education an Professional development guide for		
	Transforming Teacher Education an		
	<i>guide for tutors</i> . Accra. Ministry of E		g. Frojessional development
	YouTube	ducation (www.t-tel.org).	
Required Text (core)	Adeoye, B. F. (2015). <i>Technology gu</i>	ide for teaching & learning Th	adan-Nigeria: His Lineage
Required Text (core)	Publishing House.		adan Mgena. Ins Encage
	Amoah, S. A., Laryea, P., &Amoako,	B M (2016) Fundamentals of	feducational technology for
	effective teaching and learning.Win		easestional technology joi
	Gagne, R. M. & Briggs, L. J. (1979). P		n (2 <sup>nd</sup> ed.) New York: Holt
	Rinehalt,& Winston.	menpies of modificational desig	
	Sarfo, F. K. (2008). Educational tech	nology, Kumasi: Wilas Press I t	d.
	Transforming Teacher Education an		
	Professional development guide for		
Additional Reading List	Driscoll, M.P. (2005). <i>Psychology of</i>	-	
i dantional fiedding List	Rowntree, D. (1982). Educational te		
	Row.		Sment. London. Harper and
	Smaldino, S.E., Lowther, D.L., & Rus	sell D I (2008) Instructional t	echnology and media for
	learning (9 <sup>th</sup>	ייש איז	cennology and media joi
	ed.). Upper saddle River, NJ: Engle C	liff Woods	
CPD needs	Workshop on use of low-cost mater		lels for teaching concents in
ci o necus	their specialisms		icio for teaching concepts in

Ye	ar of B.Ed. 2	Seme	ster 1	Place o	of lesson in	semester	12 3 4 5 6 7 8	9 10 11 12	
Titl	e of Lesson	Models a	nd Material	Adaptation f					
		Classrooms and their Uses II					sson Duration	3 Hours	
Les	son description	This lesson seeks to introduce student teachers to the criteria for selecting materials for teaching in inclusive upper primary classrooms with learners from diverse background. The lesson also aims at exposing student teachers to the factors for selecting materials during instructional activities in inclusive upper primary classrooms with learners from diverse background.							
Pre	vious student	-		e been introd	uced to the t	ypes of models	and how to deve	elop learning	
prio (as	cher knowledge, or learning sumed)	materials using diffe	using low ar erent materi	nd no cost res als for teachin	ources. Studeng during STS	ent teachers ha	ave also observed	some teachers	
lea	ssible barriers to rning in the lesson	materials backgrour	for teaching nd.	in inclusive u	pper primary	/ classrooms w	hort videos on se ith learners from	diverse	
	son Delivery –	Face-to-	Practical	Work-	Seminars	Independen	E-learning	Practicum	
	sen to support	face	Activity	Based	[]	t Study	opportunities		
	dents in achieving	[V]	[v]	Leaning		[V]	[v]		
	outcomes son Delivery – main	Eaco to fr	Cuestie	ning and show	vor thoughts				
cho stu ach	de of delivery osen to support dent teachers in ieving the learning comes. Overarching outcome, what you	<ul> <li>E-learning opportunity and Independent study: Watching short videos, animations and simulations from YouTube and other online resources designed on power point showing ways of developing types of models for learning</li> <li>Practical Work and Project: Use jigsaw with cross grouping to enable student teachers to wor in groups to design learning materials using low or no cost resources based on the types of models.</li> <li>Student teachers would be expected to explain the criteria for selecting materials to teach in</li> </ul>							
•	want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed	factors re primary cl equity, div thinking v <b>3d, 3e, 3f</b> ,	sponsible for lassrooms. It versity, colla vould be dev , <b>3g, 3m, 3p)</b>	r ineffective r is also expec boration, tea eloped amon	naterials use ted that core m work, com g student tea	d in instruction and transferal munication, re achers at the e	al activities in ind ble skills includin flective practice a nd of the lesson.	lusive upper g gender, and critical ( <b>NTS 1a, 2c, 3c,</b>	
•	Learning Outcome for the lesson, picked and developed from the course specification	Learning	Outcomes	Lear	ning Indicato	ors	skills, inclusivit	nd transferable cy, equity and ersity. How will	
specification       Student teachers would be expected to explain the criteria for selecting materials to teach in inclusive upper primary classrooms.       • Explain the selecting teaching materials to teach in inclusive upper primary to facilitate						ching and burces to be STS factors for the haterials used earning in the	<ul> <li>YouTube a resources.</li> <li>Collaborat communic group pres</li> <li>Gender, et fair distrib teaching a</li> </ul>	ort videos from nd other online ion and ation through centations. quity through	

Topic Title:Models and	inclusive upper classrooms. (NT 3d, 3e, 3f, 3g, 3r	S 1a, 2c, 3c,	<ul> <li>of classroom, inclusivity, and diversity through acknowledgment of individual differences in the classroom.</li> <li>Reflection and critical thinking for self- awareness through multi and varied interactive strategies that would support learners with diverse characteristics.</li> </ul>
Material Adaptation for Inclusive	Sub-topic	Stage/time	depending on the delivery mode selected. Teacher-led collaborative group work or independent.
Classrooms and their	Sub topic	Stuge, time	Teacher Activity Student Activity
Uses II	Criteria for selectingmate rials; factors behind ineffective materials; and Adaptive and Assistive Technologies (AATs) for SEN	30 minutes 80minutes	Face-to-face:Face-to-face• Use questioning and shower thought to review student teachers' relevant previous knowledge on the lesson (PD Theme 2; pp. 5-14; PD Theme 3; pp. 75- 82).Face-to-face• Student teachers' relevant previous knowledge on the lesson (PD Theme 2; pp. 5-14; PD Theme 3; pp. 75- 82).Face-to-face• Provide relevant responses to questions posed by teachers.• Student teachers share their understanding of their relevant previous knowledge and experiences.
		90 minutes	<ul> <li>Guide student teachers to explore and discuss the criteria for selecting materialsusing talk for learning approaches (PD Theme 2; pp. 5- 14; PD Theme 3; pp. 75-82).</li> <li>Independent study &amp; group work</li> <li>Work in pairs and do presentation</li> </ul>
			Independent study &         group work         • Put student         teachers into pairs         for them to pair         and share factors         contributing to         the ineffective use         of materials.         • Guide them to         present findings

Lesson assessments –	In-lesson Assessment
evaluation of learning:	Peers listen, assess colleagues during presentations and comment
of, for and as learning	
within the lesson	1a) Critically and collectively reflects to improve teaching and learning.
	2f) Takes accounts of and respects learners' cultural, linguistic, socio-economic and
	educational backgrounds in planning and teaching
	3c) Creates a safe, encouraging learning environment.
	3j) Produces and uses a variety of teaching and learning resources including ICT, toenhance
	learning.
	5
Instructional Resources	TESSA (2016). Inclusive education tool kit. Walton Hall: United Kingdom
	Transforming Teacher Education and Learning (2016). Group work: Professional
	development guide for tutors. Accra. Ministry of Education (www.t-tel.org).
	Transforming Teacher Education and Learning (2016). Talk for learning: Professional
	development guide for tutors. Accra. Ministry of Education (www.t-tel.org).
	• Transforming Teacher Education and Learning (2016). Teaching and learning materials:
	Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org).
	Transforming Teacher Education and Learning (2016). Questioning: Professional
	development guide for tutors. Accra. Ministry of Education (www.t-tel.org).
	YouTube
Required Text (core)	Adeoye, B. F. (2015). Technology guide for teaching & learning. Ibadan-Nigeria: His Lineage
	Publishing House.
	Amoah, S. A., Laryea, P., & Amoako, B. M. (2016). Fundamentals of educational technology for
	effective teaching and learning.Winneba: UEW Press.
	Gagne, R. M. & Briggs, L. J. (1979). Principles of instructional design (2 <sup>nd</sup> ed.). New York: Holt,
	Rinehalt,& Winston.
	Sarfo, F. K. (2008). Educational technology. Kumasi: Wilas Press Ltd.
	Transforming Teacher Education and Learning (2016). Teaching and learning materials:
	Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org).
Additional Reading List	Driscoll, M.P. (2005). Psychology of learning for instruction. Boston: Pearson Education Inc.
	Rowntree, D. (1982). Educational technology in curriculum development. London: Harper and
	Row.
	Smaldino, S.E., Lowther, D.L., & Russell, D.J. (2008). <i>Instructional technology and media for</i>
	learning (9 <sup>th</sup>
	ed.). Upper saddle River, NJ: Engle Cliff Woods
CPD needs	Workshops on the use of digital literacy (audio-visual and tactile analysis), PD Theme 2; PD
	Theme 3; PD Theme 4; PD Theme 5.

Year of B.Ed. 2	Seme	ster 1	Pla	ce of	lesson in	semeste	er 1	12345678	9 10 11 12		
Title of Lesson		Models and Material Adaptation for InclusiveLesson Duration3 HoursClassrooms and their Uses IIILesson Duration3 Hours									
Lesson description	teachers upper pr designing	This lesson which should be based on co-teaching with SEN experts, aims at exposing student teachers to the meaning and types of Adaptive and Assistive Technologies (AATs) for inclusive upper primary classrooms. The lesson also seeks to introduce student teachers to the designing and appropriate use of Adaptive and Assistive Technologies (AATs) for inclusive									
Previous student teacher knowledge, prior learning (assumed)	Student inclusive upper pr selected observed	upper primary classrooms. Student teachers have been introduced to the criteria for selecting materials to teach in inclusive upper primary classrooms, and factors behind ineffective materials in teaching upper primary learners in inclusive classrooms. Student teachers have observed the materials selected by teachers for teaching upper primary classrooms during STS. They have also observed the types of materials their tutors bring to the lecture room during lectures.									
Possible barriers to learning in the lesson	Adaptive		e Techno	logies	(AATs) and	how they	are us	ort videos on tl ed for SEN in ir			
Lesson Delivery – chosen to support students in achieving the outcomes	Face- to-face [√]	Practical Activity [√]	Work- Based Leanin	g	Seminars [ ]	Indeper t Study [√]	nden	E-learning opportunities [√]	Practicum [√]		
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul> <li>Face-to-face: Questioning, tutor led discussion, and shower thoughts.</li> <li>Independent Study: Mixed gender and mixed attainment small groups to enable student teachers discuss the relevance of using Adaptive and Assistive Technologies (AATs) for SEN.</li> <li>E-learning opportunity: Watching short videos, animations and simulations from YouTube and other online resources on how types of Adaptive and Assistive Technologies (AATs) for SEN are used.</li> <li>Practical Work and Practicum: jigsaw with cross grouping to enable student teachers to role play the appropriate use of the types of Adaptive and Assistive Technologies (AATs) for SEN.</li> </ul>										
<ul> <li>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the NTS addressed</li> </ul>	Student f and iden student f Technolo the end o Assistive especiall gender, o critical th	teachers wou tify the types teachers wou ogies (AATs) f of the lesson Technologie y during STS. equity, divers	Ild be exp of Adap Ild be exp or SEN in student s (AATs) It is also sity, colla d be deve	bected tive a bected inclu teach are us the e borati	d to explain A nd Assistive d to explain t sive upper p ers would be red appropria xpectation the	Adaptive a Technolog the releva rimary cla a able to c ately in in hat core a ork, comm	and As gies (A ince of assroor demons iclusive and trai nunicat	sistive Technol ATs) for SEN. M using Adaptive ms. It is also exp strate how Ada upper primary nsferable skills tion, reflective the end of the	ogies (AATs), lore so, and Assistive pected that by ptive and classrooms, including practice and		
<ul> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning</li> </ul>	Learning	Learning Outcomes Learning Indicators						Identify which issues – core a transferable s inclusivity, eq addressing di will these be developed?	kills, uity and versity. How		
outcome	and unde meaning Adaptive Technolo in inclusi classroor Demonst	rate knowled erstanding of and types of and Assistive ogies (AATs) f ve upper prir ms. crate knowled erstanding of	the e for SEN mary	ہ ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا	Explain the n Adaptive and Fechnologies dentify the t n inclusive u classrooms. Explain the re using Adaptiv Assistive Tec	Assistive (AATs) a ypes for S pper prin elevance ve and	e nd SEN nary of	<ul> <li>Integratic utilising s from You other onl</li> <li>Collabora communi group pre</li> </ul>	ine resources.		

	relevance of using Adaptive and Assistive Technologies (AATs) for SEN in inclusive upper primary classrooms. Demonstrate the appropriate use of Adaptive and Assistive Technologies (AATs) for SEN in inclusive upper primary classrooms.		<ul> <li>(AATs) for SEN in inclusive upper primary classrooms</li> <li>Show through role play, the use of appropriate Adaptive and Assistive Technologies (AATs) for SEN in inclusive upper primary classrooms.</li> </ul>	<ul> <li>fair distribution of teaching and learning opportunities in and out of classroom, inclusivity, and diversity through acknowledgment of individual differences in the classroom.</li> <li>Reflection and critical thinking for self- awareness through multi and varied interactive strategies that would support learners with diverse characteristics.</li> </ul>
Topic Title: Models and Material Adaptation for			Teaching and learning activities depending on the delivery mode	
Inclusive Classrooms	Sub-topic	Stage/time	collaborative group work or inde	
and their Uses III			Teacher Activity	Student Activity
	Adaptive and Assistive Technolog ies (AATs) for SEN	45 minutes 30 minutes 45 minutes 60 minutes	<ul> <li>Face-to-face (Co-teaching with SEN experts):</li> <li>Use questioning and shower thought to review student teachers' relevant previous knowledge and introduce the lesson.</li> <li>Use questioning and whole class discussion to assist student teachers to understand the meaning and types of Adaptive and Assistive Technologies (AATs) for SEN (PD Theme 2; pp. 5-14; PD Theme 3; pp. 75-82).</li> <li>Independent Study (Co-teaching with SEN experts):</li> <li>Use mixed gender and mixed attainment small groups to enable student teachers discuss the relevance of using Adaptive and Assistive Technologies (AATs) for SEN in inclusive upper primary classrooms after which they disseminate their findings through poster presentation (PD Theme 4; pp. 27-44).</li> </ul>	<ul> <li>Face-to-face (Co-teaching with SEN experts):</li> <li>Student teachers share their understanding of their relevant previous knowledge and experiences in the introduction of the lesson.</li> <li>Student teachers answer questions by sharing their understanding of the meaning and types of Adaptive and Assistive Technologies (AATs) for SEN.</li> <li>Independent Study (Co-teaching with SEN experts</li> <li>Student teachers, through mixed gender and mixed attainment small groups, discuss the importance of using Adaptive and Assistive Technologies (AATs) for SEN in inclusive upper primary classrooms panel or pyramid discussion. Student teachers present their group work through poster presentation.</li> </ul>

			<ul> <li>E-learning Opportunity and Independent Study (Co- teaching with SEN experts):</li> <li>Use short videos, animations and simulations from YouTube and other online resources on how types of Adaptive and Assistive Technologies (AATs) for SEN are used (PD Theme 5; pp. 29-60).</li> <li>Practical Work and Practicum (Co-teaching with SEN experts):</li> <li>Use jigsaw with cross grouping to enable student teachers to role play the appropriate use of the types of Adaptive and Assistive Technologies (AATs) for SEN in inclusive upper primary classrooms, after which comments are given for discussion (PD Theme 3; pp. 65-72; PD Theme 4; pp. 69-98).</li> </ul>	<ul> <li>E-learning Opportunity and Independent Study (Co- teaching with SEN experts):</li> <li>Student teachers watch short videos, animations and simulations from YouTube and other online resources on how types of Adaptive and Assistive Technologies (AATs) for SEN are used after which discussions are made.</li> <li>Practical Work and Practicum (Co-teaching with SEN experts):</li> <li>In jigsaw with cross grouping, student teachers demonstratethe appropriate use of the types of Adaptive and Assistive Technologies (AATs) for SEN in inclusive upper primary classrooms. Comments are given for discussion afterwards.</li> </ul>				
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	to assess. 2f) Takes acceducational 3c) Creates a 3j) Produces	chers demonstrat counts of and res backgrounds in p a safe, encouragin	e use of different adaptive and ass pects learners' cultural, linguistic, s lanning and teaching ng learning environment. ty of teaching and learning resourc	socio-economic and				
Instructional Resources	<ul> <li>3j) Produces and uses a variety of teaching and learning resources including ICT, toenhance learning.</li> <li>TESSA (2016). Inclusive education tool kit. Walton Hall: United Kingdom</li> <li>Transforming Teacher Education and Learning (2016). Group work: Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org).</li> <li>Transforming Teacher Education and Learning (2016). Talk for learning: Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org).</li> <li>Transforming Teacher Education and Learning (2016). Teaching and learning materials: Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org).</li> <li>Transforming Teacher Education and Learning (2016). Teaching and learning materials: Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org).</li> <li>Transforming Teacher Education and Learning (2016). Questioning: Professional development guide for tutors. Accra. inistry of Education (www.t-tel.org).</li> </ul>							
Required Text (core)	Publish Amoah, S. A <i>effective tea</i> Gagne, R. M Rinehalt,& V Sarfo, F. K. (	. (2015). <i>Technol</i> ning House. ., Laryea, P., &Am <i>iching and learnir</i> I. & Briggs, L. J. (1 Vinston. 2008). Educationa	ogy guide for teaching & learning. noako, B. M. (2016). Fundamentals ng.Winneba: UEW Press. 979). Principles of instructional des al technology. Kumasi: Wilas Press cion and Learning (2016). Teaching	of educational technology for sign (2 <sup>nd</sup> ed.). New York: Holt, Ltd.				

	Professional development guide for tutors. Accra. Ministry of
	Education (www.t-tel.org).
Additional Reading List	Driscoll, M.P. (2005). Psychology of learning for instruction. Boston: Pearson Education Inc.
	Rowntree, D. (1982). Educational technology in curriculum development. London: Harper and
	Row.
	Smaldino, S.E., Lowther, D.L., & Russell, D.J. (2008). <i>Instructional technology and media for learning</i> (9 <sup>th</sup>
	ed.). Upper saddle River, NJ: Engle Cliff Woods
CPD needs	Workshops on the use of digital literacy (audio-visual and tactile analysis), PD Theme 1; PD
	Theme 2; PD Theme 3; PD Theme 4; PD Theme 5.

Ye	ear of B.Ed. 2	Seme	ster 1	Place	of lesson in	semester	12345678	9 10 <b>11</b> 12	
Titl	e of Lesson	Handhal	d Tochnolog	ios (Mobilo	and Wireless				
110		Learning	-			L	esson Duration	3 Hours	
Les	son description	This lesson seeks to introduce student teachers to the concept and properties of handheld technology. Specifically, the lesson aims at exposing student teachers to relevance and the use of computers and mobile devices in creating communication, and teaching and learning							
tea pri	evious student Icher knowledge, or learning sumed)	applications. Student teachers have been introduced to criteria for selecting materials for instruction in inclusive upper primary classrooms, and the factors that account for ineffective use of materials in inclusive upper primary classrooms. Student teachers have also been exposed to the types of Adaptive and Assistive Technologies (AATs) for SEN. Moreover, student teachers have observed their tutors and other instructors use computers and mobile devices for classroom activities to enhance learning. Student teachers have also been using their mobile phones and laptops to search for information from the internet, take pictures and record activities.							
	ssible barriers to	Inadequa	ate ICT tools	and poor int	ernet connect	ivity.			
Les cho stu	rning in the lesson son Delivery – osen to support dents in achieving outcomes	Face- to-face [√]	Practical Activity [√]	Work- Based Leaning	Seminars [√]	Independ t Study [ √ ]	en E-learning opportunities [√]	Practicum S	
mo cho stu ach	son Delivery – main ode of delivery osen to support dent teachers in nieving the learning comes. Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed	E-learnin simulatic of develo Practical work in g of model Student t technolo mobile d inclusive to exhibi commun classroor gender, e critical th	g opportun ons from You opping types of Work and P groups to des s. teachers woo gy. Student evices in cree upper prima t the approp ication, and ns, especiall equity, diversi inking woul	ity and Inde Tube and ot of models for roject: Use sign learning uld be able to teachers woo ating common ary classroon riate skills in teaching and y during STS sity, collabor	ner online reso learning igsaw with cro materials usin o explain the c uld be expecte unication, and ns. Again, it is e using comput l learning appl It is expected ation, team we ed among stur	y: Watching burces desig oss grouping g low or no oncept, pro d to discuss teaching an expected th ers and mol ications for that core an ork, commu	short videos, anim red on power poin to enable student cost resources base perties and relevan the relevance of co d learning applicati at student teacher bile devices in creat inclusive upper prin nd transferable skill nication, reflective rs at the end of the	t showing ways teachers to ed on the types ce of handheld omputers and ons for would be able ring mary s including practice and	
•	Learning Outcome for the lesson, picked and developed from the course specification Learning indicators	Learning Outcomes       Learning Indicators       Identify which cross cut issues – core and transfiskills, inclusivity, equity addressing diversity. He will these be addressed developed?						nd transferable ty, equity and ersity. How	
	for each learning outcome	and under concept technolo Demonst and under relevance technolo compute	rate knowle erstanding of of handheld gy and properate knowle erstanding of e of handhel gy such as rs and mobil n creating	f the erties. dge • f the d	Discuss the r properties o technology Discuss the r handheld tec such as com mobile devic creating com	f handheld relevance of chnology puters and ces in	<ul> <li>utilising sh YouTube a resources.</li> <li>Collaborat communic group pres</li> <li>Gender, ec</li> </ul>	ort videos from nd other online ion and ation through sentations. quity through	

	communicatio teaching and la applications in upper primary Demonstrate t using handhele such as compu mobile devices communicatio teaching and la applications in upper primary	earning inclusive classrooms. the skills in d technology uters and s in creating in, and earning inclusive classrooms.	lea inc cla Ex ha su cre an lea inc	d teaching and arning applications in clusive upper primary assrooms. hibit the skills in using ndheld technology ch as computers and obile devices in eating communication, d teaching and arning applications in clusive upper primary assrooms.	<ul> <li>teaching and learning opportunities in and out of classroom, inclusivity, and diversity through acknowledgment of individual differences in the classroom.</li> <li>Reflection and critical thinking for self- awareness through multi and varied interactive strategies that would support learners with diverse characteristics.</li> </ul>
Topic Title: Handheld Technologies (Mobile and Wireless Learning)	Sub-topic	Stage/time		depending on the delive led collaborative group	
				Teacher Activity	Student Activity
	The meaning, properties, relevance and use of handheld technology in creating communicat ion, and	45 minutes 45 minutes		<ul> <li>Face-to-face:</li> <li>Use questioning to review student teachers' relevant previous knowledge to introduce the lesson (PD Theme 2; pp. 5-14).</li> </ul>	<ul> <li>Face-to-face:</li> <li>Student teachers respond to questions and share their views to contribute to the introduction of the lesson.</li> </ul>
	teaching and learning applications.	90 minutes		<ul> <li>Independent Study and Seminar:</li> <li>Use pyramid discussion technique to enable student teachers discuss relevance of handheld technology such as computers and mobile devices in creating communication, and teaching and learning applications in inclusive upper primary classrooms (PD Theme 4; pp. 27- 30).</li> </ul>	<ul> <li>Independent Study and Seminar:</li> <li>Through pyramid discussion, student teachers discuss the relevance of handheld technology such as computers and mobile devices in creating communication, and teaching and learning applications in inclusive upper primary classrooms.</li> <li>Student teachers then present their findings for comments and discussion.</li> </ul>
				<ul> <li>Practical Work and</li> <li>Project:</li> <li>Use jigsaw with cross grouping to enable student teachers to work in groups to use handheld technology</li> </ul>	<ul> <li>Practical Work and Project</li> <li>In jigsaw with cross grouping, student teachers undertake a project by creating communication, and teaching and learning applications suitable for</li> </ul>

	(computers and inclusive upper primary					
	mobile devices) to classrooms.					
	create • Student teachers					
	communication, submit their project					
	and teaching and work for assessment					
	learning					
	applications					
	suitable for					
	inclusive upper					
	primary					
	classrooms, and					
	submit their group					
	project work. (PD					
	Theme 4; pp. 69-					
	98; PD Theme 5;					
	pp. 29-60)).					
Lesson assessments –	formative Assessment:					
evaluation of learning:	Project Work: Each student should use their digital devices to create communication, and					
of, for and as learning	teaching and learning applications for learning specific topics in primary schools. This project					
within the lesson	should be added to project given in the 8 <sup>th</sup> week and scored.					
	2f) Takes accounts of and respects learners' cultural, linguistic, socio-economic and					
	educational backgrounds in planning and teaching					
	3c) Creates a safe, encouraging learning environment.					
	3j) Produces and uses a variety of teaching and learning resources including ICT, toenhance					
	learning.					
Instructional Resources	TESSA (2016). Inclusive education tool kit. Walton Hall: United Kingdom					
	Transforming Teacher Education and Learning (2016). Group work: Professional					
	development guide for tutors. Accra. Ministry of Education (www.t-tel.org). Transforming					
	Teacher Education and Learning (2016). Talk for learning: Professional development					
	guide for tutors. Accra. Ministry of Education (www.t-tel.org). Transforming Teacher					
	Education and Learning (2016). Teaching and learning materials: Professional					
	development guide for tutors. Accra. Ministry of Education (www.t-tel.org).					
	• Transforming Teacher Education and Learning (2016). Questioning: Professional					
	development guide for tutors. Accra. Ministry of Education (www.t-tel.org).YouTube					
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	effective teaching and learning.Winneba: UEW Press.					
	Gagne, R. M. & Briggs, L. J. (1979). Principles of instructional design (2 <sup>nd</sup> ed.). New York: Holt,					
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	Professional development guide for tutors. Accra. Ministry of Education (www.t-tel.org).					
Additional Reading List	Driscoll, M.P. (2005). <i>Psychology of learning for instruction</i> . Boston: Pearson Education Inc.					
	Rowntree, D. (1982). Educational technology in curriculum development. London: Harper and					
	Row.					
	Smaldino, S.E., Lowther, D.L., & Russell, D.J. (2008). <i>Instructional technology and media for</i>					
	learning (9 <sup>th</sup>					
CDD used	ed.). Upper saddle River, NJ: Engle Cliff Woods					
CPD needs	Workshops on the use of digital literacy (audio-visual and tactile analysis), PD Theme 2; PD					
	Theme 3; PD Theme 4; PD Theme 5.					

Ye	ar of B.Ed. 2	Semeste	er 1	Pla	ce of	lesson in	semester	123456789	9 10 11 12
Title	e of Lesson	Storage and I	Evaluation	/Audit o	f Mul	timedia			
		Resources					Lesson Dur	ation	3 Hours
Less	son description	-				co-teaching with SEN experts, seeks to introduce student resources and the need for storing them. The lesson also ai			
				-				-	
		at exposing student teachers to the conduct of SEN/gender evaluation and audit of learning resources using checklist. Again, the lesson seeks to introduce student teachers to the							
		appropriate ways of storing the various types of resources.							
Pre	vious student	Student teach	ners have b	been intr	oduce	ed to the crit	eria for selecti	ng materials to t	each in
tead	cher knowledge,	Student teachers have been introduced to the criteria for selecting materials to teach in inclusive upper primary classrooms, and factors behind ineffective materials in teaching upper							
-	or learning							ave been expos	
(ass	sumed)		-					inclusive upper	primary
Dec	cible barriers to						se AATs for SE	N.	
	sible barriers to ning in the lesson	Inadequate o	I Idek of St	orage ta	unties				
-	son Delivery –	Face-to-	Practic	Work-		Seminars	Independen	E-learning	Practicum
	sen to support	face	al	Based		[v]	t Study	opportunities	
	dents in achieving	[V]	Activity	Leanin	g	• •	[V]	[V]	
	outcomes		[v]						
	son Delivery –	Face-to-face:		-					
	n mode of delivery	-	-	Semina	r: Mix	ed gender a	nd mixed attai	nment group act	ivities and
	sen to support	group presen							
	dent teachers in							videos, animatio	
	ieving the learning							oropriate ways o	-
out	comes.	teachers	oriearning	gresourd	les to	consolidate	the knowledge	and understand	ang of student
•	Overarching		ners would	be able	to ide	ntify and ex	plain the type	of resources and	the need for
-	outcome, what							ould be able to c	
	you want the								
	students to	and gender audit or evaluation of learning resources using checklist. Furthermore, student teachers would be expected to demonstrate the appropriate ways of storing the various types							
	achieve, serves as				-			ers would be ab	
	basis for the	appropriate learning resources to be used in inclusive upper primary classrooms during STS,							
	learning				-			pected that core	
	outcomes. An	transferable skills including gender, equity, diversity, collaboration, team work, communication,							
	expanded version of the	reflective practice and critical thinking would be developed among student teachers at the end of the lesson (NTS 1a, 2c, 3c, 3d, 3e, 3f, 3g, 3m, 3p).							
	description.	or the ressolit (113 ta, 21, 31, 32, 31, 38, 311, 34).							
•	Write in full								
	aspects of the								
	NTS addressed								
•	Learning	Learning Out	comes		Learn	ning Indicato	ors		h cross cutting
	Outcome for the							issues – core	
	lesson, picked							transferable s	
	and developed from the course	inclusivity, equity and							
	specification	addressing diversity. How will these be addressed or							
•	Learning	developed?							
	indicators for	Demonstrate	knowledg	e and	• 6	Explain the t	ypes of		on of ICT by
	each learning	understandin	-				ources suitable	-	hort videos
	outcome	learning resources suitable for inclusive upper primary from YouTube and							
		for instructional activities in classro					and discuss		ine resources.
		inclusive upp				he need for		Collabora	
		classrooms, a			â	appropriate	storage.		ication through
		their appropr							esentations.
		Demonstrate understandin		e and	• [	Discuss the a	ppropriate	Gender, e	equity through
L		unuerstanulh	guitte					1	

	appropriate ways of storing various types of learning resources used in inclusive upper primary classroomsDemonstrate knowledge and understanding of the appropriate ways of conducting SEN and gender evaluation/ audit of learning resources for inclusive upper primary classrooms, using checklist.		•	ways of storing the types of learning resources suitable for inclusive upper primary classrooms. Discuss the appropriate ways of conducting SEN and gender evaluation/audit of learning resources for inclusive upper primary classrooms, using checklist	<ul> <li>fair distribution of teaching and learning opportunities in and out of classroom, inclusivity, and diversity through acknowledgment of individual differences in the classroom.</li> <li>Reflection and critical thinking for self- awareness through multi and varied interactive strategies that would support learners with diverse characteristics.</li> </ul>	
Topic Title: Handheld	Sub-topic	Stage/time		Feaching and learning activitie		
Technologies (Mobile and Wireless				depending on the delivery more collaborative group work or in		
Learning)						
		<b></b>		Teacher Activity	Student Activity	
	The meaning, properties, relevance and use of handheld technology in creating communication , and teaching and learning applications.	30 minutes	•	student teachers' relevant previous knowledge to discuss the types of learning resources suitable for instructional activities in inclusive upper primary classrooms (PD Theme 2; pp. 5-14).	<ul> <li>Face-to-face</li> <li>Student teachers respond to questions and share their views to contribute to the discussion on the types of learning resources suitable for instructional activities in inclusive upper primary classrooms.</li> <li>Through tutor-led discussion, student teachers share their knowledge and understanding of the need for appropriate storage of learning resources suitable for inclusive upper primary classrooms.</li> <li>Independent Study and Seminar:</li> <li>In mixed gender and</li> </ul>	
		30 minutes	•	Seminar:	mixed attainment groups, student teachers discuss the appropriate ways of storing various types of learning resources suitable for inclusive upper primary classrooms. Student teachers present their group work using power point.	

	[	I					
		20 minutes	Independent Study:	E-learning Opportunity			
		30 minutes	<ul> <li>Showshort videos,</li> </ul>	and Independent Study:			
			animations and	Student teachers			
			simulations from	watch short videos,			
			YouTube and other online	animations and			
			resources on the	simulations from			
			appropriate ways of	YouTube and other			
			storing various types of	online resources on			
			learning resources to	the appropriate ways			
			consolidate the	of storing various			
			knowledge and	types of learning			
			understanding of student	resources to deepen			
			teachers (PD Theme 5;	their understanding of			
			pp. 29-60).	appropriate ways of			
				storing learning			
				resources. Comments,			
				clarifications and			
				tactile analysis are			
				made after watching			
			Face-to-face:	the short videos.			
			<ul> <li>Use questioning and</li> </ul>				
			tutor-led discussion to	Face-to-face			
			enable student teachers	Through tutor-led			
			discuss the criteria for	discussion and			
			evaluating resource	questioning, student			
			suitable for learners with	teachers discuss the			
			diverse needs(PD Theme	criteria for evaluating			
			2; pp. 5-14; PD Theme 3;	resource suitable for			
			pp. 75-82).	learners with diverse			
				needs in upper			
		<u> </u>		primary classrooms.			
		60 minutes	Use questioning and	<ul> <li>Ask questions and</li> </ul>			
			discussions to review key	express concerns on			
			issues discussed across	key issues treated in			
			the 12weeks of	the semester.			
			interaction.	Students exchange			
			Guide student to	materials for			
			audit/evaluate resources	auditing/evaluating to			
			prepared on the 8th and	find out how gender			
			11th week with criteria	responsive and			
			discussed before they are	inclusive they are.			
Lesson assessments –	In-lesson Assessr	nent:	scored				
evaluation of learning:			power point to present ways of a	uditing/evaluating and			
of, for and as learning							
within the lesson	storing various types of learning resources suitable for primary classrooms. Guide students topeer audit/evaluate resources produced in weeks 8 and 11 and weighted.						
	1a) Critically and collectively reflects to improve teaching and learning.						
	2f) Takes accounts of and respects learners' cultural, linguistic, socio-economic and						
	educational backgrounds in planning and teaching						
	3c) Creates a safe, encouraging learning environment.						
	3j) Produces and uses a variety of teaching and learning resources including ICT, toenhance						
	learning.						
Instructional			tool kit. Walton Hall: United King				
Resources			roup work: Professional developm				
	Ministry of Education ( <u>www.t-tel.org</u> ). Transforming Teacher Education and Learning (2016).						
	Talk for learning: Professional development guide for tutors. Accra. Ministry of Education						
	( <u>www.t-tel.org</u> ).Transforming Teacher Education and Learning (2016). <i>Teaching and learning</i>						
	materials: Professional development guide for tutors. Accra. Ministry of Education ( <u>www.t-</u>						
	tel.org).Transforming Teacher Education and Learning (2016). <i>Questioning: Professional development guide for tutors</i> . Accra. Ministry of Education ( <u>www.t-tel.org</u> ).YouTube						
	aevelopment guid	<i>ie for tutors.</i> Acc	ra. Winistry of Education ( <u>www.t-</u>	tei.org).YouTube			

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	<i>learning</i> (9 <sup>th</sup> ed.). Upper saddle River, NJ: Engle Cliff Woods				
CPD needs	Workshops on the use of digital literacy (audio-visual and tactile analysis), PD Theme 2; PD				
	Theme 3; PD Theme 4; PD Theme 5.				
	<sup>3</sup> Component 1: Subject Portfolio Assessment (30% overall score)				
	<ul> <li>Selected items of students work (3 of them -10% each) = 30%</li> </ul>				
	<ul> <li>Midterm assessment = 20%</li> </ul>				
	Reflective Journal = 40%				
	<ul> <li>Organization of the subject portfolio = 10% (how it is presented /organised)</li> </ul>				
	<sup>4</sup> Component 2: Subject Project: (30% overall semester score)				
	<ul> <li>Introduction, a clear statement of aim and purpose of the project = 10%</li> </ul>				
	<ul> <li>Methodology: what the student teacher has done and why to achieve the purpose of</li> </ul>				
	the project = 20%				
	<ul> <li>Substantive or main section = 40%</li> </ul>				
	<ul> <li>Conclusion = 30%</li> </ul>				
	Component 3: End of Semester Exams 40%				
	NOTE				
	On multimedia development, constructivist theories and principles of learning using imitative				
	and adaptive production techniques and applying principles of design on media/model				
	development using creative production technique; developing learning resources and				
	applications using computer or handheld devices, communication etc				

<sup>&</sup>lt;sup>3</sup>See rubrics on Subject Portfolio Assessment in Annex 6 of NTEAP <sup>4</sup>See rubrics on Subject Project Assessment in Annex 6 of NTEAP

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